



GANSU GUAZHOU BEIDAQIAO WIND POWER PROJECT

Document Prepared by LongYuan Power Group Energy Sale Co., LTD

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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 (NWPG). In the registration PDD, the project was estimated to deliver 446,721 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 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 (01-January-2013 to 31-December-2018) is 1,644,730 tCO₂e.

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

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1.4 Other Entities Involved in the Project

Organization name	LongYuan Power Group Energy Sale Co., LTD
Role in the Project	Project developer
Contact person	Shi Di
Title	Project 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 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 VCs 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 had underwent 240 hours consecutive trial operation.

1.6 Project Crediting Period

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 3. 2 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.

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

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

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 21-January-2031.

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.

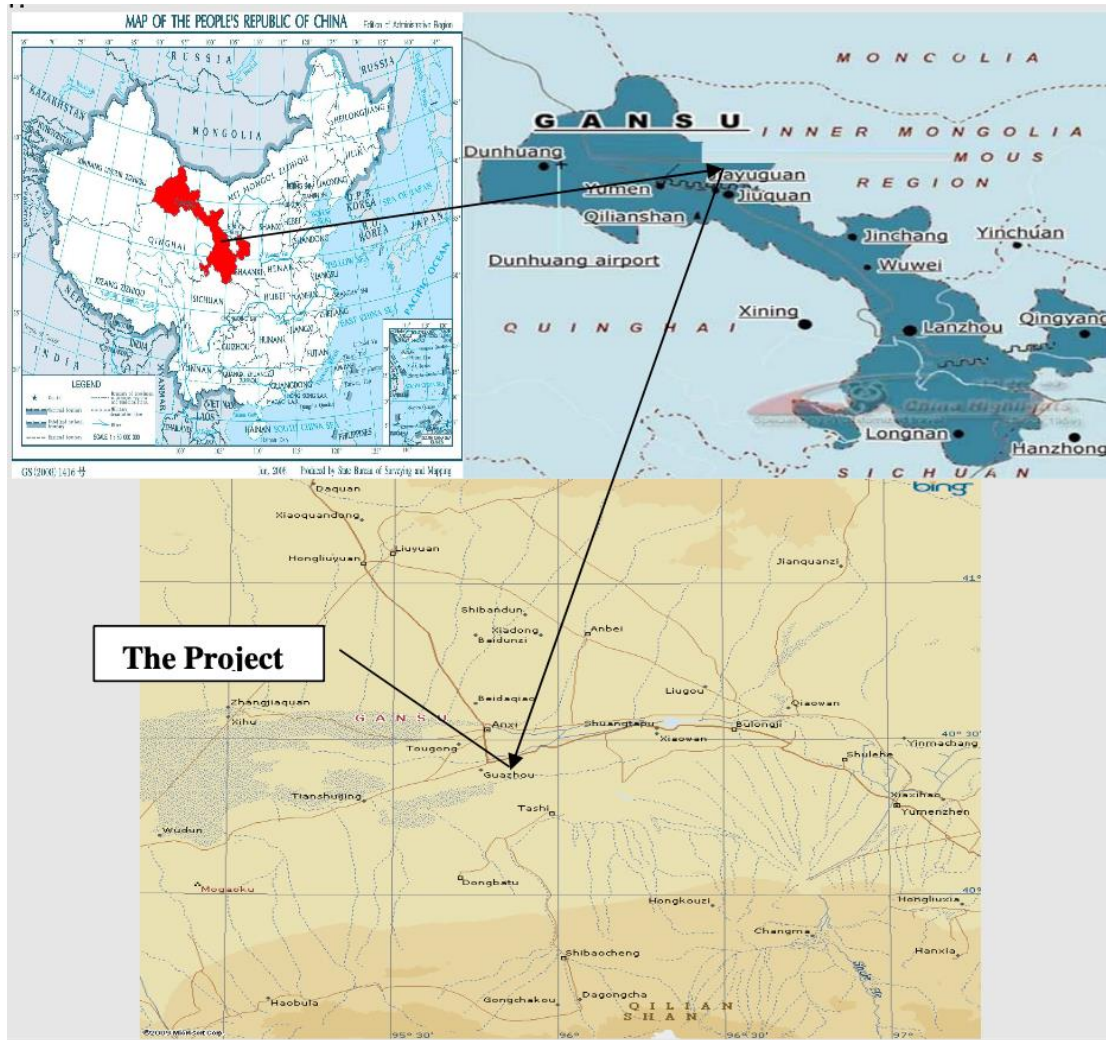


Figure 1. Location of the project

1.8 Title and Reference of Methodology

Title: Approved consolidated baseline and monitoring methodology ACM0002: “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (Version 12.1.0) is applied by the Project.

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

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

Tool for the demonstration and assessment of additionality (Version 05.2)

1.9 Participation under other GHG Programs

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.

The project is a registered CDM project with reference No. 4832. Total GHG emission reductions of 413,259 tCO₂ generated from 05-July-2011 to 31-December-2012 by the project has been issued as CERs under CDM program, the detailed information can be found at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1305872143.32/view>.

All emission reductions during 01-January-2013 to 31-December-2018 have not and will not seek CDM CER issuance. Emission reductions during this monitoring period will only seek issuance under VCS program.

1.10 Other Forms of Credit

1.10.1 Emissions Trading Programs and Other Binding Limits

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 emission industries that emitted at least 26,000 tons of CO₂e/year, not including renewable project².

The project proponent Longyuan (Jiuquan) Wind Power Co., Ltd. as an enterprise for renewable energy investment, is not included in the compliance entity list by China national Emission Trading Scheme (ETS). 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 is not involved in an emission trading program or any other mechanism that includes GHG allowance trading. 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.

In addition, a statement on no double counting will be submitted to Verra to confirm the credits during this monitoring period has not been counted and will not be counted under emission trading programs and other binding limits.

Other Forms of Environmental Credit

² http://www.mee.gov.cn/xxgk2018/xxgk/xxgk05/202103/t20210330_826728.html

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

1.10.2 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.

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, which contributes to SDG8³.
- Increase of power supply and reduction of fossil fuel use: With the new wind farm, the grid is expected to improve its supply while contributing to steady and reliable economical growth in the region. 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, 1,769,861.85 MWh of net electricity from renewable sources had been exported to the power grid, which contributes to SDG7⁴.
- 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 1,644,730 tCO_{2e} emission reduction in this monitoring period, which contributes to SDG13⁵.

³ <https://sdgs.un.org/goals/goal8>

⁴ <https://sdgs.un.org/goals/goal7>

⁵ <https://sdgs.un.org/goals/goal13>

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	7.2	7.2.1 Renewable energy share in the total final energy consumption	Implemented activities to increase	During this monitoring period, 1,769,861.85 MWh of net electricity from renewable sources has been exported to the power grid.	An accumulated 2,333,207.502 MWh of electricity from renewable sources has been supplied to the power grid by end of the reporting period (See Appendix I for details).
2)	8.5	Numbers of job opportunities provided by implementation of the project	Implemented activities to increase	During this monitoring period, 30 people including 15 females and 15 males were employed for operation, and maintenance of this project.	The project activity generates long-term working opportunities for 30 people during the construction 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.
3)	13.0	Tones of greenhouse gas emissions avoided or removed	Implemented activities to increase	During this monitoring period, the project has achieved GHG emission reductions of 1,644,730 tCO ₂ e.	An accumulated 2,168,244 tCO ₂ e of GHG emission reduction have been achieved by the project by end of the reporting period (See Appendix I for details).

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 30respondents, 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 every two years. In this monitoring period, the project owner carried out questionnaire survey for the local stakeholder to collect the relevant comments and suggestions in August 2014, August 2016 and August 2018.. 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, the 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 (type: SL1500/82) 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	20m/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.

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 3.2 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.

The deviation will not impact the applicability of methodology, baseline scenario and additionality of the project activity.

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	$EF_{grid,CM,y}$
Data unit	tCO ₂ e/MWh
Description	Baseline emission factor: the combined emission factor of the project grid system.
Source of data	Registered PDD
Value applied	0.9293
Justification of choice of data or description of measurement methods and procedures applied	Ex-ante determined in the registered PD and fixed during the 1 st crediting period.
Purpose of Data	Calculation of baseline emissions
Comments	The emission factor of the Project was ex-ante determined and is fixed during the first crediting period. All data and parameters had been determined at registration.

4.2 Data and Parameters Monitored

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

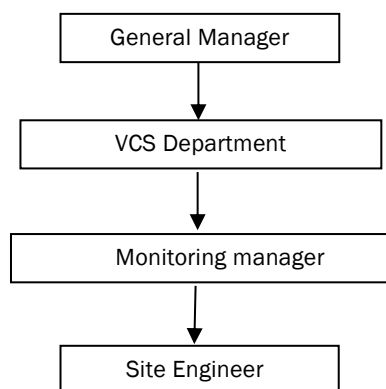
Source of data	Measured electricity meters installed in the substation
Description of measurement methods and procedures to be applied	Monitor continuously, then calculate the net electricity generation supplied by the project plant to the grid $EG_{facility,y}$ was calculated based on the direct measurement 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 measured, daily recorded and monthly aggregated.
Value applied	1,769,861.85
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. (Meters information and calibration see Table 3 below).
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	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 ETNs 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 ETNs of import from 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:

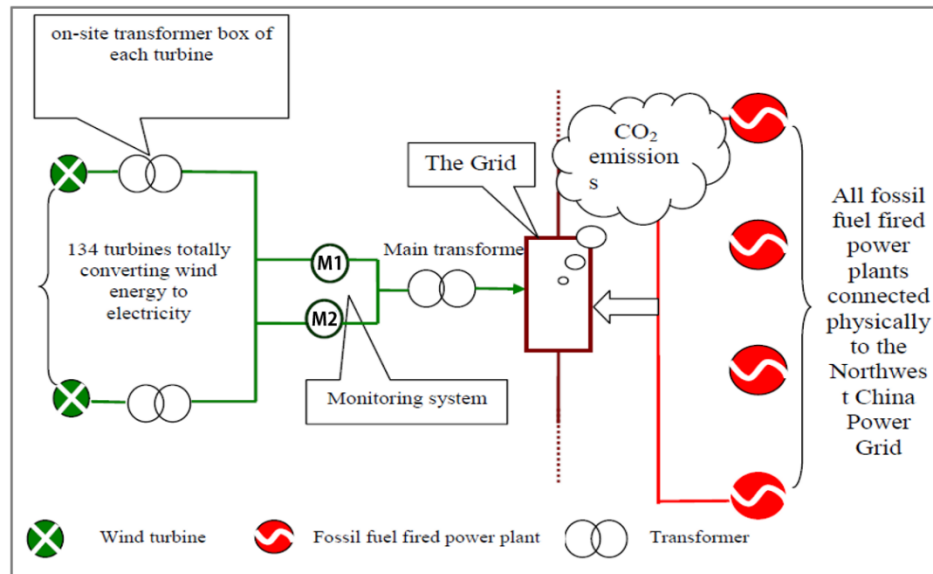


Figure 2. The monitoring system of the project

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	SL7000	57034799	0.2S	Annually	02-April-2012 29-March-2013 25-March-2014 22-March-2015 16-March-2016 11-March-2017 08-March-2018	01-April-2013 28-March-2014 24-March-2015 21-March-2016 15-March-2017 10-March-2018 07-March-2019	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation
M2	SL7000	57034801	0.2S	Annually	02-April-2012 29-March-2013 25-March-2014 22-March-2015 16-March-2016 11-March-2017 08-March-2018	01-April-2013 28-March-2014 24-March-2015 21-March-2016 15-March-2017 10-March-2018 07-March-2019	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation

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 (tCO₂/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;

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

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

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

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

Period	Electricity exported to the grid ($EG_{\text{export},y}$) (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)
01/01/2013-29/01/2013	9,917.25	10,125.50	20,042.75	20,042.75	20,042.75
30/01/2013-26/02/2013	14,867.12	15,940.75	30,807.87	30,807.87	30,807.87
27/02/2013-29/03/2013	15,650.25	18,025.00	33,675.25	33,675.25	33,675.25
30/03/2013-28/04/2013	7,582.75	8,993.25	16,576.00	16,576.00	16,576.00
29/04/2013-29/05/2013	18,556.12	22,433.25	40,989.37	40,989.37	40,989.37
30/05/2013-28/06/2013	16,286.37	19,004.12	35,290.49	35,290.49	35,290.49
29/06/2013-29/07/2013	13,110.12	14,639.62	27,749.74	27,749.74	27,749.74
30/07/2013-29/08/2013	21,224.00	22,855.00	44,079.00	44,079.00	44,079.00
30/08/2013-28/09/2013	19,136.25	21,630.00	40,766.25	40,766.25	40,766.25
29/09/2013-29/10/2013	13,307.00	15,149.75	28,456.75	28,456.75	28,456.75
30/10/2013-28/11/2013	22,090.25	23,729.12	45,819.37	45,819.37	45,819.37
29/11/2013-29/12/2013	13,527.50	15,806.00	29,333.50	29,333.50	29,333.50
30/12/2013-31/12/2013	717.50	766.50	1,484.00	1,484.00	1,484.00
01/01/2013-31/12/2013	185,972.48	209,097.86	395,070.34	395,070.34	395,070.34
01/01/2014-29/01/2014	8,806.87	10,226.12	19,032.99	19,032.99	19,032.99
30/01/2014-26/02/2014	17,878.00	19,931.62	37,809.62	37,809.62	37,809.62
27/02/2014-29/03/2014	15,381.62	16,556.75	31,938.37	31,938.37	31,938.37
30/03/2014-28/04/2014	18,186.00	18,355.75	36,541.75	36,541.75	36,541.75
29/04/2014-29/05/2014	17,625.12	18,805.50	36,430.62	36,430.62	36,430.62
30/05/2014-28/06/2014	16,837.62	18,674.25	35,511.87	35,511.87	35,511.87
29/06/2014-29/07/2014	14,729.75	16,405.37	31,135.12	31,135.12	31,135.12
30/07/2014-29/08/2014	14,872.37	16,270.62	31,142.99	31,142.99	31,142.99
30/08/2014-28/09/2014	8,279.25	8,951.25	17,230.50	17,230.50	17,230.50
29/09/2014-29/10/2014	12,073.25	13,100.50	25,173.75	25,173.75	25,173.75
30/10/2014-28/11/2014	6,373.50	6,966.75	13,340.25	13,340.25	13,340.25
29/11/2014-29/12/2014	7,921.37	8,828.75	16,750.12	16,750.12	16,750.12
30/12/2014-31/12/2014	732.37	763.87	1,496.24	1,496.24	1,496.24
01/01/2014-31/12/2014	159,697.09	173,837.10	333,534.19	333,534.19	333,534.19
01/01/2015-29/01/2015	9,478.87	10,823.75	20,302.62	20,302.62	20,302.62
30/01/2015-26/02/2015	10,775.62	11,565.75	22,341.37	22,341.37	22,341.37
27/02/2015-29/03/2015	10,969.87	11,648.87	22,618.74	22,618.74	22,618.74
30/03/2015-28/04/2015	11,620.00	12,325.25	23,945.25	23,945.25	23,945.25
29/04/2015-29/05/2015	9,901.50	11,139.62	21,041.12	21,041.12	21,041.12
30/05/2015-28/06/2015	11,387.25	13,165.25	24,552.50	24,552.50	24,552.50
29/06/2015-29/07/2015	6,032.25	7,058.62	13,090.87	13,090.87	13,090.87
30/07/2015-29/08/2015	12,996.37	15,697.50	28,693.87	28,693.87	28,693.87

30/08/2015-28/09/2015	7,388.50	8,022.87	15,411.37	15,411.37	15,411.37
29/09/2015-29/10/2015	7,299.25	8,030.75	15,330.00	15,330.00	15,330.00
30/10/2015-28/11/2015	5,846.75	6,473.25	12,320.00	12,320.00	12,320.00
29/11/2015-29/12/2015	4,826.50	5,217.62	10,044.12	10,044.12	10,044.12
30/12/2015-31/12/2015	58.62	89.25	147.87	147.87	147.87
01/01/2015-31/12/2015	108,581.35	121,258.35	229,839.70	229,839.70	229,839.70
01/01/2016-29/01/2016	11,786.25	12,362.00	24,148.25	24,148.25	24,148.25
30/01/2016-27/02/2016	9,025.62	9,550.62	18,576.24	18,576.24	18,576.24
28/02/2016-29/03/2016	8,223.25	8,196.12	16,419.37	16,419.37	16,419.37
30/03/2016-28/04/2016	10,485.12	10,975.12	21,460.24	21,460.24	21,460.24
29/04/2016-29/05/2016	9,190.12	10,379.25	19,569.37	19,569.37	19,569.37
30/05/2016-28/06/2016	10,005.62	12,358.50	22,364.12	22,364.12	22,364.12
29/06/2016-29/07/2016	9,699.37	10,552.50	20,251.87	20,251.87	20,251.87
30/07/2016-29/08/2016	11,156.25	13,596.62	24,752.87	24,752.87	24,752.87
30/08/2016-28/09/2016	7,170.62	9,001.12	16,171.74	16,171.74	16,171.74
29/09/2016-29/10/2016	7,259.87	8,778.87	16,038.74	16,038.74	16,038.74
30/10/2016-28/11/2016	5,412.75	6,788.25	12,201.00	12,201.00	12,201.00
29/11/2016-29/12/2016	9,161.25	10,746.75	19,908.00	19,908.00	19,908.00
30/12/2016-31/12/2016	463.75	499.62	963.37	963.37	963.37
01/01/2016-31/12/2016	109,039.84	123,785.34	232,825.18	232,825.18	232,825.18
01/01/2017-29/01/2017	6,497.75	7,735.87	14,233.62	14,233.62	14,233.62
30/01/2017-26/02/2017	6,813.62	8,575.00	15,388.62	15,388.62	15,388.62
27/02/2017-29/03/2017	12,800.37	13,854.75	26,655.12	26,655.12	26,655.12
30/03/2017-28/04/2017	8,344.00	9,825.37	18,169.37	18,169.37	18,169.37
29/04/2017-29/05/2017	15,315.12	17,269.87	32,584.99	32,584.99	32,584.99
30/05/2017-28/06/2017	6,107.50	6,307.00	12,414.50	12,414.50	12,414.50
29/06/2017-29/07/2017	9,786.00	9,981.12	19,767.12	19,767.12	19,767.12
30/07/2017-29/08/2017	16,759.75	17,970.75	34,730.50	34,730.50	34,730.50
30/08/2017-28/09/2017	12,824.87	14,264.25	27,089.12	27,089.12	27,089.12
29/09/2017-29/10/2017	10,974.25	13,135.50	24,109.75	24,109.75	24,109.75
30/10/2017-28/11/2017	8,411.37	9,590.00	18,001.37	18,001.37	18,001.37
29/11/2017-29/12/2017	12,463.50	14,707.87	27,171.37	27,171.37	27,171.37
30/12/2017-31/12/2017	159.25	178.50	337.75	337.75	337.75
01/01/2017-31/12/2017	127,257.35	143,395.85	270,653.20	270,653.20	270,653.20
01/01/2018-29/01/2018	12,665.62	14,623.00	27,288.62	27,288.62	27,288.62
30/01/2018-26/02/2018	9,989.00	11,216.62	21,205.62	21,205.62	21,205.62
27/02/2018-29/03/2018	13,006.00	15,121.75	28,127.75	28,127.75	28,127.75
30/03/2018-28/04/2018	12,495.87	14,238.00	26,733.87	26,733.87	26,733.87
29/04/2018-29/05/2018	7,957.25	8,306.37	16,263.62	16,263.62	16,263.62
30/05/2018-28/06/2018	14,785.75	17,122.87	31,908.62	31,908.62	31,908.62
29/06/2018-29/07/2018	11,277.87	12,344.50	23,622.37	23,622.37	23,622.37
30/07/2018-29/08/2018	18,107.25	19,986.75	38,094.00	38,094.00	38,094.00
30/08/2018-28/09/2018	13,776.87	15,678.25	29,455.12	29,455.12	29,455.12
29/09/2018-29/10/2018	15,652.87	18,220.12	33,872.99	33,872.99	33,872.99
30/10/2018-28/11/2018	7,920.50	8,920.62	16,841.12	16,841.12	16,841.12
29/11/2018-29/12/2018	8,206.62	9,947.87	18,154.49	18,154.49	18,154.49
30/12/2018-31/12/2018	277.37	411.25	688.62	688.62	688.62
01/01/2018-31/12/2018	146,118.84	166,137.97	312,256.81	312,256.81	312,256.81

Total	836,666.95	937,512.47	1,774,179.42	1,774,179.42	1,774,179.42
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* For the period from 1st to 29th in January, 30th to 31th in December during 2013-2018, the Power Grid Company issued the confirmation for EG_{export,y} of the project based on the meter reading of the meter M1 and M2.

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

Period	Electricity imported from the grid (EG _{import,y}) (MWh)				
	Values from meter readings			Values from ETNs *	Conservative Value
	Meter (M1)	Meter (M2)	Total		
	A	B	C=A+B	D	E=Max(C,D)
01/01/2013-20/01/2013	32.38	34.13	66.51	66.51	66.51
21/01/2013-20/02/2013	31.50	30.63	62.13	62.13	62.13
21/02/2013-20/03/2013	24.50	26.25	50.75	50.75	50.75
21/03/2013-20/04/2013	37.63	28.88	66.51	66.51	66.51
21/04/2013-20/05/2013	18.38	18.38	36.76	36.76	36.76
21/05/2013-20/06/2013	19.25	19.25	38.50	38.50	38.50
21/06/2013-20/07/2013	35.00	35.00	70.00	70.00	70.00
21/07/2013-20/08/2013	28.88	29.75	58.63	58.63	58.63
21/08/2013-20/09/2013	15.75	14.88	30.63	30.63	30.63
21/09/2013-20/10/2013	26.25	26.25	52.50	52.50	52.50
21/10/2013-20/11/2013	38.50	38.50	77.00	77.00	77.00
21/11/2013-20/12/2013	42.00	41.13	83.13	83.13	83.13
21/12/2013-31/12/2013	12.25	10.50	22.75	22.75	22.75
01/01/2013-31/12/2013	362.27	353.53	715.80	715.80	715.80
01/01/2014-20/01/2014	36.75	34.13	70.88	70.88	70.88
21/01/2014-20/02/2014	37.63	37.63	75.26	75.26	75.26
21/02/2014-20/03/2014	33.25	34.13	67.38	67.38	67.38
21/03/2014-20/04/2014	21.00	21.00	42.00	42.00	42.00
21/04/2014-20/05/2014	25.38	24.50	49.88	49.88	49.88
21/05/2014-20/06/2014	22.75	22.75	45.50	45.50	45.50
21/06/2014-20/07/2014	21.00	20.13	41.13	41.13	41.13
21/07/2014-20/08/2014	13.13	12.25	25.38	25.38	25.38
21/08/2014-20/09/2014	29.75	28.00	57.75	57.75	57.75
21/09/2014-20/10/2014	35.88	36.75	72.63	72.63	72.63
21/10/2014-20/11/2014	41.13	42.00	83.13	83.13	83.13
21/11/2014-20/12/2014	35.00	34.13	69.13	69.13	69.13
21/12/2014-31/12/2014	7.00	6.13	13.13	13.13	13.13
01/01/2014-31/12/2014	359.65	353.53	713.18	713.18	713.18
01/01/2015-20/01/2015	31.50	32.38	63.88	63.88	63.88
21/01/2015-20/02/2015	33.25	35.00	68.25	68.25	68.25
21/02/2015-20/03/2015	17.50	17.50	35.00	35.00	35.00
21/03/2015-20/04/2015	22.75	21.00	43.75	43.75	43.75
21/04/2015-20/05/2015	21.00	19.25	40.25	40.25	40.25
21/05/2015-20/06/2015	18.38	19.25	37.63	37.63	37.63
21/06/2015-20/07/2015	20.13	20.13	40.26	40.26	40.26

21/07/2015-20/08/2015	16.63	15.75	32.38	32.38	32.38
21/08/2015-20/09/2015	23.63	24.50	48.13	48.13	48.13
21/09/2015-20/10/2015	24.50	22.75	47.25	47.25	47.25
21/10/2015-20/11/2015	36.75	36.75	73.50	73.50	73.50
21/11/2015-20/12/2015	45.50	39.38	84.88	84.88	84.88
21/12/2015-31/12/2015	16.63	15.75	32.38	32.38	32.38
01/01/2015-31/12/2015	328.15	319.39	647.54	647.54	647.54
01/01/2016-20/01/2016	24.5	22.75	47.25	47.25	47.25
21/01/2016-20/02/2016	38.50	35.88	74.38	74.38	74.38
21/02/2016-20/03/2016	20.13	19.25	39.38	39.38	39.38
21/03/2016-20/04/2016	26.25	25.38	51.63	51.63	51.63
21/04/2016-20/05/2016	35.88	34.13	70.01	70.01	70.01
21/05/2016-20/06/2016	29.75	27.13	56.88	56.88	56.88
21/06/2016-20/07/2016	24.50	22.75	47.25	47.25	47.25
21/07/2016-20/08/2016	27.13	21.00	48.13	48.13	48.13
21/08/2016-20/09/2016	32.38	30.63	63.01	63.01	63.01
21/09/2016-20/10/2016	42.00	40.25	82.25	82.25	82.25
21/10/2016-20/11/2016	35.00	31.50	66.50	66.50	66.50
21/11/2016-20/12/2016	45.50	42.88	88.38	88.38	88.38
21/12/2016-31/12/2016	27.13	27.13	54.26	54.26	54.26
01/01/2016-31/12/2016	408.65	380.66	789.31	789.31	789.31
01/01/2017-20/01/2017	37.63	34.13	71.76	71.76	71.76
21/01/2017-20/02/2017	36.75	34.13	70.88	70.88	70.88
21/02/2017-20/03/2017	31.50	31.50	63.00	63.00	63.00
21/03/2017-20/04/2017	23.63	21.88	45.51	45.51	45.51
21/04/2017-20/05/2017	27.13	24.50	51.63	51.63	51.63
21/05/2017-20/06/2017	15.75	14.00	29.75	29.75	29.75
21/06/2017-20/07/2017	32.38	28.88	61.26	61.26	61.26
21/07/2017-20/08/2017	35.00	30.63	65.63	65.63	65.63
21/08/2017-20/09/2017	47.25	43.75	91.00	91.00	91.00
21/09/2017-20/10/2017	23.63	21.00	44.63	44.63	44.63
21/10/2017-20/11/2017	47.25	39.38	86.63	86.63	86.63
21/11/2017-20/12/2017	31.50	28.88	60.38	60.38	60.38
21/12/2017-31/12/2017	11.38	10.50	21.88	21.88	21.88
01/01/2017-31/12/2017	400.78	363.16	763.94	763.94	763.94
01/01/2018-20/01/2018	25.38	22.75	48.13	48.13	48.13
21/01/2018-20/02/2018	43.75	35.88	79.63	79.63	79.63
21/02/2018-20/03/2018	33.25	32.38	65.63	65.63	65.63
21/03/2018-20/04/2018	24.50	21.88	46.38	46.38	46.38
21/04/2018-20/05/2018	19.25	21.00	40.25	40.25	40.25
21/05/2018-20/06/2018	18.38	20.13	38.51	38.51	38.51
21/06/2018-20/07/2018	28.00	28.00	56.00	56.00	56.00
21/07/2018-20/08/2018	19.25	21.00	40.25	40.25	40.25
21/08/2018-20/09/2018	22.75	18.38	41.13	41.13	41.13
21/09/2018-20/10/2018	16.63	14.88	31.51	31.51	31.51
21/10/2018-20/11/2018	38.50	36.75	75.25	75.25	75.25
21/11/2018-20/12/2018	42.00	38.50	80.50	80.50	80.50

21/12/2018-31/12/2018	21.88	22.75	44.63	44.63	44.63
01/01/2018-31/12/2018	353.52	334.28	687.80	687.80	687.80
Total	2,213.02	2,104.55	4,317.57	4,317.57	4,317.57

* For the period from 1st to 20th in January, 21th to 31th in December during 2013-2018, 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:

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

Table6. Baseline emissions

Period	$EG_{facility,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO ₂ e/MWh)	BE_y (tCO ₂ e)
01-January-2013-31-December-2013	394,354.54	0.9293	366,473
01-January-2014-31-December-2014	332,821.01	0.9293	309,290
01-January-2015-31-December-2015	229,192.16	0.9293	212,988
01-January-2016-31-December-2016	232,035.87	0.9293	215,630
01-January-2017-31-December-2017	269,889.26	0.9293	250,808
01-January-2018-31-December-2018	311,569.01	0.9293	289,541
01-January-2013 to 31-December-2018	1,769,861.85	/	1,644,730

5.2 Project Emissions

Project emission (PE_y) is 0 tCO₂e.

5.3 Leakage

Project leakage is 0 tCO₂e.

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)
01-January-2013-31-December-2013	366,473	0	0	366,473
01-January-2014-31-December-2014	309,290	0	0	309,290
01-January-2015-31-December-2015	212,988	0	0	212,988

01-January-2016-31-December-2016	215,630	0	0	215,630
01-January-2017-31-December-2017	250,808	0	0	250,808
01-January-2018-31-December-2018	289,541	0	0	289,541
01-January-2013 to 31-December-2018	1,644,730	0	0	1,644,730

Comparison of actual emission reduction and the estimation in registered PDD

Year	Estimated ER in registered VCS PD (tCO ₂)	Emission reduction achieved (tCO ₂)	Difference
01-January-2013 to 31-December-2018	2,681,550	1,644,730	-38.66%

The estimated annual emission reductions are 446,721 tCO₂e as registered PDD. The monitoring period covers 2,191 days, $446,721 \text{ tCO}_2\text{e} \times \frac{2,191 \text{ days}}{365 \text{ days}} = 2,681,550 \text{ tCO}_2\text{e}$, and the emission reduction achieved by the project in this monitoring period is 1,644,730 tCO₂e, less than the estimated emission reduction, which was mainly resulted by the erratically fluctuation of wind resources in the project area, regular equipment maintenance, and limited absorption capacity of local grid.

APPENDIX I: < EVIDENCE OF ACHIEVED SDGS>

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-January-2011-04-July-2011	118,645.630	https://registry.terra.org/app/projectDetail/VCS/873
05-July-2011-29-December-2011	123,357.969	https://cdm.unfccc.int/Projects/DB/DNV-CUK1305872143.32/view
30-December-2011-31-December-2012	321,342.053	
01-January--2013-31-December-2018	1,769,861.850	Section 5 of this report
Cumulative amount since operation start	2,333,207.502	/

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

period	Amount of emission reductions (tCO ₂ e)	Data source
22-January-2011-04-July-2011 (VER)	110,255	https://registry.terra.org/app/projectDetail/VCS/873
05-July-2011-29-December-2011 (CER)	114,636	https://cdm.unfccc.int/Projects/DB/DNV-CUK1305872143.32/view
30-December-2011-31-December-2012 (CER)	298,623	
01-January--2013-31-December-2018 (VER)	1,644,730	Section 5 of this report
Cumulative amount since operation start	2,168,244	/

Since the current project contributions with all impacts do not include in previously approved VCS monitoring reports or Sustainable Development Contribution Reports, all impacts during the previous monitoring period from 22-January-2011 to 31-December-2012 has not been calculated in the cumulative impact. Thus, the cumulative impacts in project lifetime are same as the one in this monitoring period.

SDG Target 8.5, SDG Indicator Numbers of job opportunities provided by implementation of the project

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