



# Verified Carbon Standard

## CECIC GANSU YUMEN CHANGMA NO.3 WIND FARM PROJECT

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Version	Version 03
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Prepared by	Smart Carbon Environment & Energy Limited

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# PROJECT DETAILS

## 1.1 Summary Description of the Implementation Status of the Project

CECIC Gansu Yumen Changma No.3 Wind Farm Project (hereinafter referred as "the Project") is in Yumen Town, Yumen City, Gansu Province, the People's Republic of China. The purpose of the Project is to generate electricity using wind power resources in the project region and to deliver to the Northwest China Power Grid (NWPG) which is predominated by connected fossil fuel fired power plants, especially coal fired plants. So, the Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in NWPG.

The purpose of the project is to generate renewable wind power and deliver it to NWPG. 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.

The Project involves the installation of 134 wind turbines with 1.5MW capacity per unit, with a total installed capacity of 201 MW. Totally 463,714 MWh of clean electricity generated by the Project are expected to be delivered to the NWPG annually.

The baseline scenario of the project is the electricity supply of equal amount as the project from the NWPG. The baseline scenario of the project is the same against the scenario prior to the start of the implementation of the project activity.

The Project started construction on 19-September-2009. The first wind turbine of the Project commissioning started on 28-January-2011. The Project started fully commissioning on 23-October-2012.

The Project is developed by CECIC Wind-power (Gansu) Co., Ltd. (hereinafter referred as "the Project owner" or "PP"), a solely owned subsidiary company of China Energy Conservation Investment Corporation Wind Power Investment Co., Ltd. the emission reduction achieved by the project in this monitoring period is 457,367 tCO<sub>2e</sub>. The emission reductions in the monitoring period will be verified and issued under VCS rules.

## 1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	21-April-2011	VCS	TÜV Rheinland (China) Ltd.	/
Validation	28-April-2011	CDM	TÜV Rheinland (China) Ltd.	/
Validation of the renewal of crediting	18-February-2022	VCS	CTI Certification Co., Ltd.	/

period				
Verification	28-January-2011 - 27-April-2011.	VCS	LGAI Technological Center, S.A.	0.25
Verification	28-April-2011 - 29-October-2011	CDM	SGS United Kingdom Ltd	0.51
Verification	30-October-2011 -28-April-2012	CDM	SGS United Kingdom Ltd	0.50
Verification	29-April-2012 - 28-September-2012	CDM	SGS United Kingdom Ltd	0.42
Verification	29-September-2012 - 31-December-2012	CDM	SGS United Kingdom Ltd	0.26
Verification	01-January-2013 - 31-December-2014	CDM	CTI Certification Co., Ltd.	2.00
Verification	01-January-2015 - 31-December-2015	CDM	CTI Certification Co., Ltd.	1.00
Verification	01-January-2016 - 30-June- 2018	VCS	LGAI Technological Center S.A.	2.50
Verification	01-July-2018 - 31-December-2019	VCS	LGAI Technological Center S.A.	1.50
Verification	01-January-2020 - 27-January-2021	VCS	CTI Certification Co., Ltd.	1.08
Verification	28-January-2021 - 31-December-2021	VCS	CTI Certification Co., Ltd.	0.93
Verification	01-January-2022 - 30-April-2023	VCS	CTI Certification Co., Ltd.	1.33
Total	28-April-2011 - 30-April-2023	CDM&V CS	/	12.26

### 1.3 Sectoral Scope and Project Type

<b>Sectoral scope<sup>1</sup></b>	<b>Sectoral scope 1: energy industries (renewable - / non- renewable sources).</b>
<b>Project activity type</b>	Renewable energy Projects. Grid connected wind power project

<b>Sectoral scope</b>	<b>Not applicable as this is not an AFOLU project</b>
<b>AFOLU project category<sup>2</sup></b>	Not applicable as this is not an AFOLU project
<b>Project activity type</b>	Not applicable as this is not an AFOLU project

### 1.4 Project Proponent

<b>Organization name</b>	CECIC Wind-Power(Gansu) Co., Ltd.
<b>Contact person</b>	Lv Xin
<b>Title</b>	Office manager
<b>Address</b>	12F, A Building Jieneng Mansion, No.42 Xizhimen North Street, Haidian District, Beijing, 100082
<b>Telephone</b>	+86/10/62248705
<b>Email</b>	lvxin@cecwpc.cn

### 1.5 Other Entities Involved in the Project

<b>Organization name</b>	<b>Smart Carbon Environment &amp; Energy Limited</b>
<b>Role in the Project</b>	Consultancy
<b>Contact person</b>	Li Jing
<b>Title</b>	Manager
<b>Address</b>	No.145 Chaoyang North Road, Chaoyang District, Beijing, P. R. China.

<sup>1</sup> Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

<sup>2</sup> See Appendix 1 of the VCS Standard

Telephone	86-13810160876
Email	carbon@bjsmartcarbon.com

### 1.6 Project Start Date

Project start date	28-January-2011
Justification	It is the date when the first turbine was commissioned

### 1.7 Project Crediting Period

Crediting period	<input type="checkbox"/> Seven years, twice renewable <input type="checkbox"/> Ten years, fixed <input checked="" type="checkbox"/> Other  <p>There is a deviation for the crediting period. 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 Version 3 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from 28-January-2011 - 27-April-2011 to 28-January-2011 - 27-January-2021. According to VCS standard and considering the 20-year lifetime of the project activity and 7*3 CDM renewable crediting period, the total VCS crediting period is 28-January-2011 to 27-January-2031. And the second crediting period is from 28-January-2021-27-January-2031 accordingly.</p>
Start and end date of first or fixed crediting period	28-January-2011 to 27-January-2021

### 1.8 Project Location

The Project site is located 18-31 km southwest of Yumen Town, Yumen City, Gansu Province in the People’s Republic of China. It is located at Latitude from N 40° 05’ 39” to N 40° 09’ 52” and Longitude from E 96° 46’ 22” to E 96° 51’ 57” . The altitude of the Project site ranges from between 1690 m to 1825 m above the sea level. The location of the project is provided in Fig1.

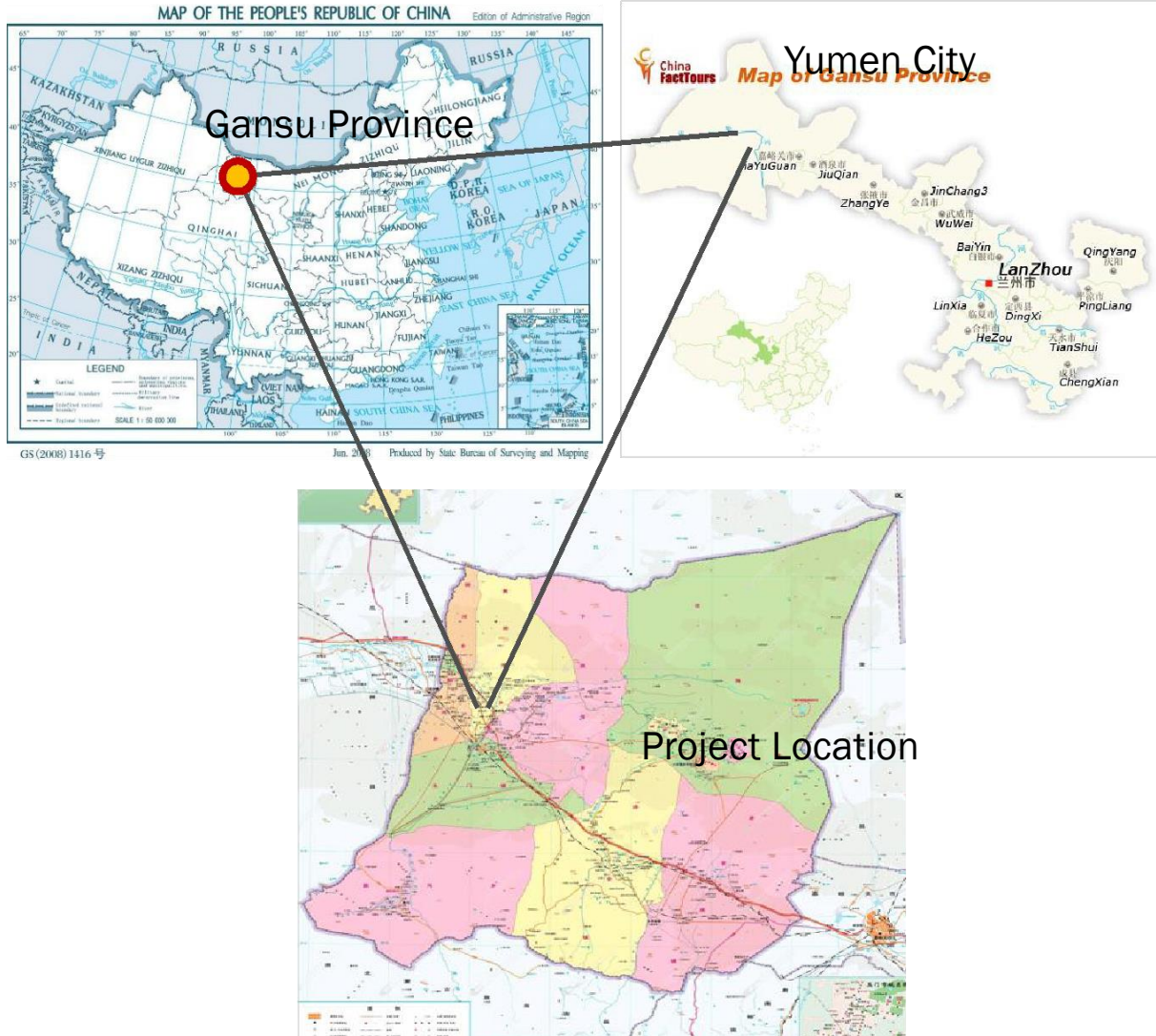


Figure 1. Project location

### 1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	ACM0002	Grid-connected electricity generation from renewable sources	Version 20.0
Tool	TOOL07	Tool to calculate the emission factor for an electricity system	Version 07.0

Tool	TOOL05	Baseline, project and/or leakage emissions from electricity consumption and monitoring of Electricity generation	Version 03.0
Tool	TOOL11	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

## 1.10 Double Counting and Participation under Other GHG Programs

### 1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

Yes  No

The project is not receiving or seeking credit for reductions and removals from a project activity under another GHG program. The GHG emission generated from 29/09/2012-31/12/2012 was listed in both VCS and CDM registry. However, the 93,842 tCO<sub>2</sub> is issued under VCS mechanism, has been cancelled in CDM Registry. Hence, the project has no issue in terms of double issuance.

### 1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

Yes  No

The Project has been registered as a CDM project in UNFCCC on 28-April-2011 (UNFCCC Ref.4734) and the emission reductions during 28-April-2011 to 31-December-2015 were issued as CER. During this monitoring period, the project owner does not registered this project in any other credit system and only applied for emission reduction under the VCS mechanism.

## 1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

### 1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the VCS Program Definitions for definitions of emissions trading program and binding emission limit.

Yes  No

If yes, provide all required evidence of no double claiming as outlined by the VCS Standard.

### 1.11.2 No Double Claiming with Other Forms of Environmental Credit

*Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the VCS Program Definitions for definition of GHG-related environmental credit system.*

Yes  No

### 1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

The proposed project is a wind power project to generate electricity using wind power resources in the project region and to deliver to the Northwest China Power Grid (NWPG). The project does not use any products in the supply chain other than wind sources. Therefore, the project activities does not affect the emissions footprint of any products.

Yes  No

## 1.12 Sustainable Development Contributions

The project utilizes wind resources for electricity generation, located in Yumen Town, Yumen City, Gansu Province in the People's Republic of China.

In this monitoring period

The project supplied 586,886.103 MWh renewable electricity to NWPG during this monitoring period, which contributes to SDG 7.

15 local people have been employed as long-term job opportunities by the end of this monitoring period, which has a positive effect on the local economy and contributes to SDG 8.

The project achieved 457,367 tCO<sub>2</sub>e emission reductions during this monitoring period which contributes to SDG 13.

These contribute to achieve China's stated sustainable development priorities, included strengthening resistance capacity to climate risks, increasing labor force participation rate, increasing the share of clean energy consumption.

**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, 586,886.103 MWh of electricity from renewable sources has been exported to the power grid.	From the operation start date of this project activity to the end of this monitoring period 4,311,754.625 MWh of electricity from renewable sources has been exported to the power grid.
2)	8.3	8.3.1 Proportion of Informal employment in non-agriculture employment, by sex	Implemented activities to increase	No further changes this monitoring period.	The project activity generates long-term working opportunities for 15 people during the construction period. From the operation start date of this project activity to the end of this monitoring period, 15 people were employed including 7 females and 8 males.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	During this monitoring period, the project has achieved GHG emission reductions of 457,367 tCO <sub>2</sub> e.	From the operation start date of this project activity to the end of this monitoring period, the project has achieved GHG emission reductions of 3,814,790 tCO <sub>2</sub> e.

### 1.13 Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the monitoring report.

## 2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

### 2.1 Stakeholder Engagement and Consultation

#### 2.1.1 Stakeholder Identification

<b>Stakeholder Identification</b>	<p>The stakeholders have been identified as individuals who will be directly or indirectly impacted due to the project activity. Direct stakeholders are those who deemed to either have a direct influence on the project or be directly influenced by the project, including but not limit to staff of the wind power project and local residents.</p>		
	Stakeholder Category	Direct/Indirect Affected Direct	Relevance to the Project Activity
	The staff of the wind power project	Direct	The project provided jobs for them.
	Local residents around the project site	Direct	The project can provide them with new jobs and renewable energy.
	Local government including development and reform commission, ecological	Direct	Approval for construction and operation of the project.

	environment bureau		Daily supervision of normal operation of the project.
<p><b>Legal or customary tenure/access rights</b></p>	<p>The project is located in Gobi Desert areas, which is owned by the state as stipulated by law. Before the construction of the project, local Development and Reform Commission and Ecological Environment Bureau approved the land use and project construction on behalf of the local government.</p> <p>There is no uncertainty or change in land tenure arrangements, resource access rights, community-based property rights and customary rights, access rights or land ownership.</p>		
<p><b>Stakeholder diversity and changes over time</b></p>	<p>Stakeholder diversity: The staff of the project, the local residents around the project site, and the local government are affected by the project activity directly.</p> <p>Part of employees are mainly from the project area, and they have different levels of education and skills, and income levels may vary. The farmers around the project live in different villages, and they may have different social networks and ways of interacting. Workers in government departments may come from different backgrounds and have different expertise and experience. Government authorities are responsible for regulating and approving the operation of the project, and different government authorities may have different policies and regulations.</p> <p>Over time, the members of each group will adjust, but their groups does not change much in terms of society, economy, culture, etc.</p>		
<p><b>Expected changes in well-being</b></p>	<p>The implementation of the project is expected to have a positive impact on the well-being and other characteristics of stakeholders. Relative to the baseline scenario of electricity delivered to NWPG by the project that would otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid, the project bring about the following changes:</p>		

	<p>Local people’s well-being: The construction and operation of the project provide employment opportunities for the local people, 15 persons have been employed by the project as long-term employee period.</p> <p>Social welfare: The implementation of the project promote the local economic development, and provide employment opportunities.</p> <p>Climate change Impact: The Project generates electricity from renewable source to displace equal electricity generated from NWPG, which is dominated by fossil fuel fired power plants. .</p> <p>Collectively, these changes will have a positive impact on villagers' livelihoods and living environment around the project site.</p>
<p><b>Location of stakeholders</b></p>	<p>This project is a wind power project, which is located in Gobi Desert areas, not towns or urban residential areas. It is expected to be affected by the project in the villages near the project. That is Yumen Town, Yumen City, Gansu Province, P. R. China.</p> <p>The project is geographically located in Gobi Desert areas, which is over 5km from the local people live area. The stakeholders, in Yumen Town, can use the electricity generated by this renewable power plant and have chances to be employed by the project.</p> <p>The areas outside the project area that are predicted to be impacted by the project is the other counties near Yumen Town, Yumen City, Gansu Province, P. R. China, the peoples live in the area can also use the electricity generated by this renewable power plant. The project has no negative impacts on these peoples.</p>
<p><b>Location of resources</b></p>	<p>The location of territories and resources which stakeholders own or to which they have customary access are located in Yumen Town, Yumen City, Gansu Province, P. R. China.</p>

## 2.1.2 Stakeholder Consultation and Ongoing Communication

<p>Ongoing consultation</p>	<p>Communications with local stakeholders are being carried out at periodic intervals, the project owner carried out questionnaire survey for the local stakeholders to collect the relevant comments and suggestions every two years. The project owner carried out questionnaire survey for the local stakeholder to collect the relevant comments and suggestions in-August-2021. 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,</p> <p>In addition to the questionnaire survey for the local stakeholder, people can also visit the project office at any time if they have any opinions or suggestions, or leave messages by phone.</p>
<p>Date(s) of stakeholder consultation</p>	<p>August 2021</p>
<p>Communication of monitored results</p>	<p>This project is a wind power project, according to the requirements of methodology, the parameters that need to be monitored are the electricity supplied to the grid and imported from grid. The monitoring data during a monitoring period compiled into a monitoring report and published on the VCS website, anyone who concerns about this project can know the monitoring results in time. At the same time, comments and suggestions from stakeholders regarding the project will also be recorded, and the handling results will be notified to stakeholders via phone or other contact information left by the stakeholders.</p>
<p>Consultation records</p>	<p>For the comments and suggestions from stakeholders on the grievance notebook, the project manager will handle these suggestions, They will communicate with the stakeholders through phone or other contact information left by the stakeholders, and notify them of the final handling results. All the comments and suggestions, the communication process, and the final results will be recorded as a report, which will be saved in the company's management documents.</p>

	<p>During this monitoring period, the project has not received any complaints, comments or suggestions from stakeholders, therefore, no records on the process or methods to document the outcomes of the stakeholder consultation.</p>
<p>Stakeholder input</p>	<p>The project owner carried out questionnaire survey for the local stakeholder to collect the relevant comments and suggestions in-August-2021. There are no negative comments received for the project, and the project owner will carry out the questionnaire survey at periodic intervals.</p>

### 2.1.3 Free, Prior, and Informed Consent

<p>Consent</p>	<p>In order to obtain the consent and reach a transparent agreement from the stakeholders involved in the implementation of the project activities, , Consultations were carried out in the Yumen Town by the project owner on 18-June-2008.</p> <p>The consultations included two parts. One is questionnaire survey, and the another is the meeting among local people with the developer.</p> <p><b><u>Conclusions of the questionnaire:</u></b></p> <p>On 18-June-2008, 45 participants attended the local stakeholder’s meeting including local residents, builders and members of the local authorities. The survey had a 100% response rate with all questionnaires returned. The key findings of the survey and the summary of the consultation are as following:</p> <p>86.67% of respondents agree with the development and construction of the project.</p> <p>86.67% of the respondents believe that the Project will have no negative impact on their living, studying, and working environments.</p> <p>71.11% of the respondents believe that the project implementation will have a positive impact on their lives.</p> <p>The stakeholder meeting and the survey showed that the Project receives strong support from the local community.</p>
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The result and comments received in the survey is shown below. They all believe the Project will promote local economic development and agree with the project development and construction.

**Conclusions of the meeting discussions:**

Every stakeholder expressed their comments in favour of the Project. No negative comments have been received.

The summary of stakeholder meeting's comments is as following:

- Promote the local economic development

The local government strongly supports the development and construction of the proposed Project. It increased local financial income and promote technological progress of local building materials, tower tube manufacturing, and other related industries. This project will provide clean energy ("green energy") to the Northwest grid and promote the sustainable development of the local economy.

- Local environment protection

According to the project EIA report, the noise level of the installed turbines is within below the national standard. The proposed Project site is located in the Gobi desert, the underdeveloped region. Moreover, there are no residents or industrial firms near the project site. Furthermore, there are no issues related to noise and communications signal interference, or to bird migration. The project will play an exemplary role on energy saving, pollution reduction and the environment protection.

- Improve the living condition of local residents

The project site is located in Gobi desert and there are no residents around the project site, so the local residents will not be impacted by the noise from the construction and operation of the project. The proposed project will create new employment opportunities through the project construction and operation. For the construction, the PP is planning to employ a number of skilled workers for the operation, while creating more jobs by sub-contractors for construction work. The project will also purchase the raw materials for construction and other supplies from the local market. Therefore, the local people will benefit from the Project

<b>Outcome of FPIC</b>	<p>The project land is Gobi Desert area land, does not occupy the villagers' house land, permanent basic farmland, is not in the range of prohibited cultivation area, has obtained the approval from local Development and Reform Commission and Ecological Environment Bureau. Therefore, the project does not involve land encroachment, non-consensual resettlement of residents and forced relocation.</p> <p>Prior to the commencement of the project, adequate communication was conducted with the local peoples, including the key project schedule, Project details, environmental protection, carbon development, risks, benefits, etc. have been disclosed and fully communicated in advance. All relevant arrangements are made with the free, prior and informed consent of stakeholders. All stakeholders expressed full support for the project.</p>
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#### 2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
<p>In order to resolve complaints related to the project, PP has developed a complaint resolution process with stakeholders to ensure fair, transparent and timely processing. Here are the grievance resolution steps we have developed in partnership with our stakeholders:</p> <ol style="list-style-type: none"> <li>1. Receiving Complaints: Any complaints related to the project will be received and recorded. The project owner will carry out questionnaire survey for the local stakeholders to collect the relevant comments and suggestions every two years.</li> <li>2. Hearing: Once a complaint is received, PP will schedule a hearing or meeting so that stakeholders can express their views and concerns. This will provide an open platform to ensure that all relevant information is fully considered.</li> <li>3. Response: Following the hearing or meeting, PP will provide a written response confirming that they have understood and documented the stakeholder's complaint and explaining the actions</li> </ol>	<p>N/A</p>

<p>they will take. This will ensure transparency and continuity of communication.</p> <p>4. Resolution of Complaints: PP will use our best efforts to resolve complaints within a reasonable period of time. This may include adopting appropriate conflict resolution methods, such as mediation, negotiation or other appropriate solutions. They will work with stakeholders to ensure they are satisfied with the solution.</p> <p>These complaint resolution steps will ensure that we are able to address any project-related complaints in a timely and fair manner, while respecting the rights and concerns of the stakeholders.</p> <p>No complaints were received during the monitoring period</p>	
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### 2.1.5 Public Comments

Summary of comments received	Actions taken
The Project has not received any complaints or comments during or outside the public comment period.	N/A

## 2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk identified	The project is located in stated owned Gobi Desert area, is not in the farmland, forbidden zone, restricted zone. According to the approval from local Development and Reform Commission and Ecological Environment Bureau, the project conforms to the local environmental protection and economy development policy. Therefore, the project has no impact on land loss, yield loss,

		<p>livelihoods of the local population and climate change.</p>
<p><b>Working conditions</b></p>	<p>No risk identified</p>	<p>The project has strictly implemented national and industry regulations and standards on labor safety and health, as well as Chinese labor law and local requirements, mitigation measures have been undertaken as per the approved EIA and carry out regular occupational health and safety testing every year to ensure the safety and healthy working environment.</p>
<p><b>Safety of women and girls</b></p>	<p>No risk identified</p>	<p>This program does not admit underage girls. In the design phase of the project, the safety of women was taken into account and corresponding preventive measures were taken. For example, establish safe sanitation facilities to ensure that women are not subjected to gender discrimination or gender-based violence in the management of their faces. During the implementation of the project, all personnel involved in the project are regularly trained in gender sensitivity, including awareness of gender discrimination and gender-based violence, and how to prevent and respond to these issues. The project has established effective monitoring and reporting mechanisms so that women can report any safety issues or acts of gender discrimination, ensuring that their voices are adequately addressed and protected.</p>

<p>Safety of minority and marginalized groups, including children</p>	<p>No risk identified</p>	<p>Project activities provided equal job opportunities, does not discriminate against marginalized groups, and provided some social support and assistance for local marginalized groups; The project does not recruit child workers. Therefore, the project does not pose a risk to marginalized groups, including children.</p>
<p>Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)</p>	<p>The pollutants of dust, noise, solid waste and waste water during the construction, noise, waste water during operation are identified..</p>	<p><b>Air pollution and Dust:</b> The air pollution during construction mainly comes from flying dust produced by excavating land, as well as some exhaust discharge from transportation vehicles and construction machinery. Since the project site is far away from the nearest local residential area (over 5km), there is no impact on local residents from dust and air pollution. The main impact is on the construction staff and appropriate measures such as watering and converting has been taken to reduce any negative impact and ensure staff safety. <b>Noise:</b> The noise mainly comes from the drilling machines and cement mixers during the construction period, and aerodynamic interaction between the wind and turbine blades during operation. Although the operating level of these turbines is around 100dB, at a range of 150 meters from the turbines the noise weakens to 33dB, which is below the national standard of 45dB. As the proposed project is far away from any residential</p>



area, effects of noise pollution on the surrounding environment are not significant.

**Solid waste:** Solid waste mainly comes from construction and living waste. During the construction period, construction waste was properly disposed to avoid water and soil erosion problems. the project generated living wastes of 150 kg per day during construction. The waste during the construction period and operation period was properly collected and delivered to the local county for disposal.

**Waste water:** The waste water generated during the construction includes washing water from machines and waste water from the project office. Since the project site is located in the Gobi desert area, the waste water was reused on the construction site or as fertilizer. During operation, the waste water and sewage was treated by using a septic tank and all-in-one biochemical process equipment to recycle and reuse water on the project site. The treated waste water was used for on-site greening and road spreading. The treated waste water quality meet the requirement of the Fields Irrigation Water Standard (GB 5084-1992), therefore, it has no negative impact on the surrounding environment.

## 2.3 Respect for Human Rights and Equity

### 2.3.1 Labor and Work

<p><b>Discrimination and sexual harassment</b></p>	<p>The project does not involve or engage in any form of discrimination based on gender, race, religion, sexual orientation or any other grounds. The program respects all rights granted to women by the Constitution of the People's Republic of China, the Labor Law of the People's Republic of China, and the Special Provisions on Labor Protection for Women Workers. There have been no complaints of sexual harassment since the project began. And the project has established a monitoring mechanism for complaints about sexual harassment to ensure that sexual harassment will not happen in the future.</p>
<p><b>Management experience</b></p>	<p>The PP's management team has the experience and expertise to effectively implement similar project activities. The team members have many years of working experience in the field of wind power plant with relevant skills and expertise in project planning, implementation and supervision to effectively manage and drive the implementation of the project.</p> <p>In addition, the PP have developed a recruitment strategy to fill gaps in skills and experience that may exist in the team. They will be looking for people with relevant experience and expertise to join the team to ensure that the project is supported and guided.</p>
<p><b>Gender equity in labor and work</b></p>	<p>The project has male and female employees of different genders, and there are female employees in management positions. There is no significant gender difference between female employees and male employees in terms of salary, promotion opportunities and welfare benefits, and employees of different genders have equal opportunities to obtain training and development resources. In regular employee satisfaction surveys, all employees feel that the project is treated equally in terms of gender and pay.</p>
<p><b>Human trafficking, forced labor, and child labor</b></p>	<p>The project adopts a compliant recruitment and employment policy to ensure that the recruitment and employment policies comply with relevant ILO standards and do not involve any form of human trafficking, forced Labour and child Labour. PP conducted comprehensive background checks and comply with local labor laws and regulations to ensure that employees are not exploited and abused.</p>

	<p>The project has put in place monitoring mechanisms to ensure that all employees and partners involved in the project are not involved in human trafficking, forced Labour and child Labour. PP conducts regular on-site inspections and audits to ensure that there are no violations of labor rights during the implementation of the project. The PPs work with partners who share the same commitment to labor rights to ensure that the entire supply chain is free from human trafficking, forced labor and child labor.</p> <p>The project provides training to employees and partners on human trafficking, forced Labour and child Labour to increase their awareness of these issues and how to avoid and report possible violations.</p>
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### 2.3.2 Human Rights

The project is geographically located in Gobi desert areas, which is over 5km from the local people live area, no IPs, LCs, or customary rights holders identified. The project provides training and employment opportunities for local people in the town nearby.

In accordance with applicable laws such as International Human Rights Law, and relevant Chinese laws such as the Constitution of the People's Republic of China, the Labor Law of the People's Republic of China, , the Law of the People's Republic of China on the Protection of Women's Rights and Interests, the Law of the People's Republic of China on the Protection of Minors etc.,

### 2.3.3 Indigenous Peoples and Cultural Heritage

The project is geographically located in Gobi desert areas, which is over 5km from the local people live area, there is no cultural heritage to be protected in or around the project site.

### 2.3.4 Property Rights

<b>Disputes over rights to territories and resources</b>	The project got the approval from government about the land use, does not involve any possible conflicts of rights.
<b>Respect for property rights</b>	The project was designed, installed and performed by the project owner, does not involve any possible conflicts of the property rights of stakeholders,

### 2.3.5 Benefit Sharing

The proposed project is a wind power project to generate electricity using wind power resources in the project region and to deliver to the Northwest China Power Grid (NWPG). The project is located in the state owned Gobi Desert region. Before the project construction, the project owner obtained the land use right, and the local Development and Reform Commission, Land and Resources Bureau, and Ecological Environment Bureau approved the land use and project construction on behalf of the local

government.,Moreover, the project was designed, installed and performed by the project owner, does not involve any possible conflicts of the property rights of stakeholders, Therefore, the project has no benefit sharing occurred during the whole crediting period.

<b>Summary of the benefit sharing plan</b>	N/A
<b>Benefit sharing during the monitoring period</b>	N/A

## 2.4 Ecosystem Health

	<b>Risk identified</b>	<b>Mitigation or preventative measure taken during the monitoring period</b>
<b>Impacts on biodiversity and ecosystems</b>	No risk identified	According to the EIA and it's approval there was not risk identified on biodiversity and ecosystems
<b>Soil degradation and soil erosion</b>	No risk identified	This project is a wind power project that occupies land during construction and has been approved. No land will be used during operation, there was not risk identified on Soil degradation and soil erosion
<b>Water consumption and stress</b>	No risk identified	This project is a wind power project and does not use water resources, there was not risk identified on Water consumption and stress
<b>Usage of fertilizers</b>	No risk identified	This project is a wind power project, do not use any fertilizers

### 2.4.1 Rare, Threatened, and Endangered species

The project is not located in or near the habitat of rare, threatened or endangered animals, according to the official websites of national and local environmental authorities and nature conservation agencies and the approved EIA.

### 2.4.2 Introduction of species

N/A. This table is not required for projects with no planting or species introduction.

### 2.4.3 Ecosystem conversion

Not applicable. The project is not an ARR, ALM, WRC or ACoGS project.

## 3 IMPLEMENTATION STATUS

### 3.1 Implementation Status of the Project Activity

The Project started construction on 19-September-2009. The first wind turbine of the Project started commissioning on 28-January-2011. The Project started fully commissioning on 23-October-2012. The electricity generated by the Project is delivered to NWPG, according to the signed power purchase agreement (PPA) with Gansu Electric Power Grid Co.

During this monitoring period, the Project is operated and implemented smoothly. There are no emergencies happened to the monitoring system in this monitoring period, or events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

Total 134 sets of wind power turbine and generators with 1.5MW unit capacity each, are installed in the Project, forming 201MW of total capacity. These wind turbines are manufactured by China's Dongfang Steam Turbine Co., Ltd and the model type of these wind turbines is FD82A-1500/11. The main technology parameter of this type of wind power turbine can be found at Table1, which is in line with the specification made in the PD.

Major technical parameters of the key equipment employed by the project are illustrated in the following table.

Item	FD82A/1500
<b>1. Data for Unit</b>	
Rated capacity (kW)	1500
Number of unit	134
Capacity control method	Adjusting the pitch of blade and wind wheel speed control
Turbine diameter (m)	82
Hub height (m)	70
Cut in wind speed (m/s)	3.0
Rated wind speed (m/s)	11
Cut out wind speed (m/s)	20.0
Wind speed limit (m/s)	52.5
Operating temperature (°C)	-20~+40
The wind direction	Upwind
Technical lifetime (y)	20
<b>2. Blade</b>	
Number of blades	3
Material of blade	GRP
End profiles of blades speed (m/s)	74.3
<b>3. Generator</b>	
Type of generator	Double-fed slip ring asynchronous generator
Rated capacity (kW)	1500
Output Voltage (V)	690
Rated speed (rpm)	1000~1800±10%
<b>4. Machinery space &amp; Tower</b>	
Machinery space (t) (exclude blade)	61
blade	3×6.2
Type of tower	Conical steel tube
High of tower (m)	70
Weight of tower (t)	127.66

The electricity generated by the Project is exported to the local Yumen town grid via a newly built 35kV/330kV transformer station, which is then exported to the NWPG. The technical process in the Project can be shown as following diagram

## 3.2 Deviations

### 3.2.1 Methodology Deviations

As per renewed VCS PD, there is a deviation on calculation of Build Margin when adopting the methodological tool - “ Tool to calculate the emission factor for an electricity system ” by the Chinese DNA in calculation of emission factors of regional power grids. The deviation has been approved by the EB Board in a response letter entitled “ Request for clarification on use of approved methodology AM0005 for several projects in China”<sup>4</sup>. The same deviation method has been adopted in this (2nd) crediting period (also this monitoring period) of the project by the Chinese DNA.

Moreover, the parameter EF<sub>grid,BM,y</sub> and EF<sub>grid,OM,y</sub> determined ex-ante for the 2nd crediting period are sourced from local government. The deviation has no impact on conservativeness of the quantification of GHG emission reductions or removals.

### 3.2.2 Project Description Deviations

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

The project description deviations during previous monitoring period are described as follows:

1. Deviation in relation with VCS crediting period

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 Version 3 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from 28-January-2011~27-April-2011 to 28-January-2011 ~ 27-January-2021.

2. Deviation in relation with monitoring plan

In revised CDM PDD (Version 11.0, 02-July- 2012), two solar projects (other projects) shared bi-directional gateway meter (M1 as main meter and M1' as backup meter) with the project activity. The quantity of net electricity generation supplied by the Project plant/unit to the grid (EG<sub>facility,y</sub>) is continuous monitored through ten bi-directional meters installed at the 35kV side of 35kV/330kV transformer. The quantity of net electricity generation supplied by the project plant/unit to the grid (EG<sub>facility,y</sub>) is calculated as follow:

$$EG_{\text{facility},y} = EG_{\text{PJ to grid}, y} - EG_{\text{grid to PJ}, y}$$

Where:

EG<sub>PJ to grid, y</sub> is the electricity exported to the grid by the Project is the sum of values measured by the ten meters for exported electricity.

EG<sub>grid to PJ, y</sub> is the electricity imported from the grid by the Project is the sum of values measured by the ten meters for imported electricity.

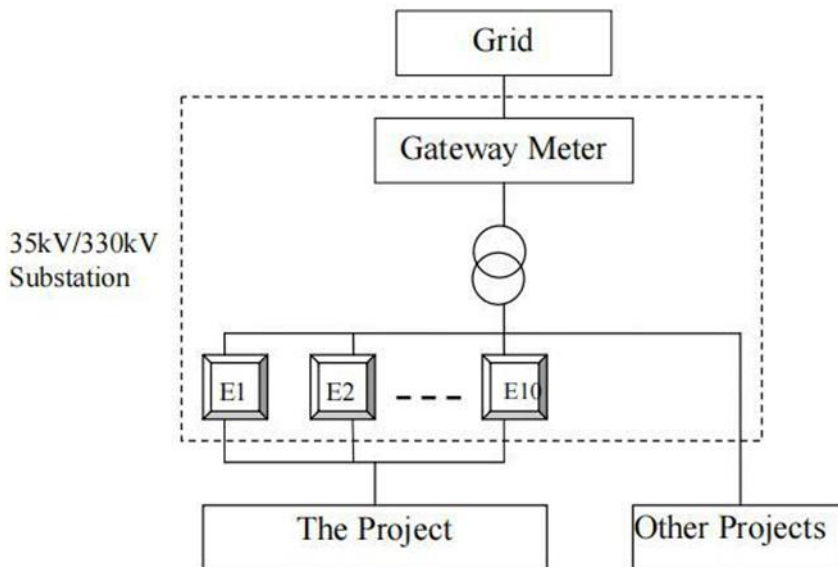


Figure 1 Monitoring Line Diagram in the revised CDM PDD (Version 11.0, 02-July-2012)

However, the readings of the 10 electricity meters were not recorded since 01-January-2020, An alternative measure is adopted for the monitoring of net electricity generation supplied by the project plant/unit to the grid ( $EG_{facility,y}$ ).

As stated in renewed VCS PD (version 02, 17-February-2022), the quantity of net electricity generation supplied by the project plant/unit to the grid ( $EG_{facility,y}$ ) were continuously monitored through bi-directional gateway meter (M1 as main meter and M1' as backup meter with accuracy 0.2s) share with two solar projects (other projects), as well as, electricity meters MS1 (accuracy 0.5s) and MS2 (accuracy 0.5s), which measures the electricity output and input of two Solar Projects

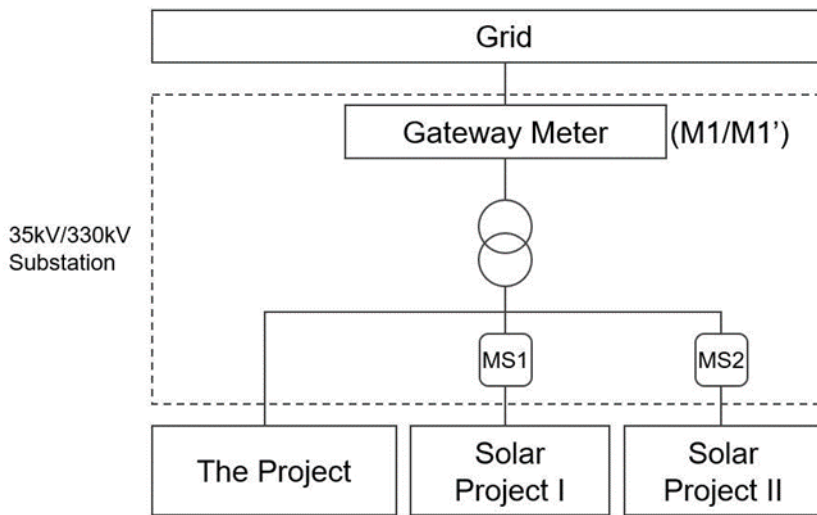


Figure 2 Monitoring Line Diagram since 01-January-2020

The quantity of net electricity generation supplied by the project plant/unit to the grid ( $EG_{facility,y}$ ) is calculated as follow:

$$EG_{facility,y} = EG_{PJ \text{ to grid}, y} - EG_{grid \text{ to PJ}, y}$$

$$EG_{PJ \text{ to grid}, y} = EG - EG_{solar1,y} - EG_{solar2,y}$$

Where:

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

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

EG is electricity exported to the grid measured by M1 (and/or M1').

$EG_{solar1,y}$  is the electricity supply by the Solar Project I measured by MS1.

$EG_{solar2,y}$  is the electricity supply by the Solar Project II measured by MS2.

Meanwhile, electricity imported from the grid by the project ( $EG_{grid \text{ to PJ}, y}$ ) use the value measured by the meter M1 (and/or M1') , including two solar projects, which is conservative.

The 10 electricity meters are no longer included in the monitoring system of the project during this monitoring period, calibration information of the 10 meters doesn't need to be reported in this monitoring report.

This deviation from the monitoring plan doesn't impact the applicability of the methodology, additionality, or the appropriateness of the baseline scenario. The deviation also doesn't lower the accuracy and conservativeness of the monitoring system and the project remains in compliance with VCS Program rules.

As stated in renewed VCS PD, this is a permanent project deviation, which is applied to this (5th) VCS monitoring period.

### 3.3 Grouped Projects

Not applicable as this is not a grouped project.

### 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

- Yes  No

## 4 DATA AND PARAMETERS

### 4.1 Data and Parameters Available at Validation

The baseline grid emission factor  $EF_{grid,CM,y}$  is obtained directly from the official source “2019 Baseline Emission Factors for Regional Power Grids in China” issued by China’s DNA. Thus, the relevant basis parameters for calculation are not described in detail here. With consideration of the fact of the Project, data and parameters that are available at validation are summarized in below tables.

<b>Data / Parameter</b>	$EF_{grid,CM,y}$
<b>Data unit</b>	tCO <sub>2e</sub> /MWh
<b>Description</b>	Operating margin emission factor for North West China Power Grid.
<b>Source of data</b>	“2019 Baseline Emission Factors for Regional Power Grids in China” published by China DNA
<b>Value applied</b>	0.8922
<b>Justification of choice of data or description of measurement methods and procedures applied</b>	Calculated as per the latest version of “Tool to calculate the emission factor for an electricity system” (version 07.0) by China DNA.
<b>Purpose of Data</b>	Calculation of $EF_{grid,CM,y}$

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

<b>Data / Parameter</b>	$\omega_{OM}$
<b>Data unit</b>	-
<b>Description</b>	Weighting of operating margin emissions factor
<b>Source of data</b>	Tool to calculate the emission factor for an electricity system” (version 07.0)
<b>Value applied</b>	0.75
<b>Justification of choice of data or description of measurement methods and procedures applied</b>	-
<b>Purpose of Data</b>	Calculation of $EF_{grid,CM,y}$
<b>Comments</b>	Calculated ex ante and fixed for the second crediting period.

<b>Data / Parameter</b>	$\omega_{BM}$
<b>Data unit</b>	-
<b>Description</b>	Weighting of build margin emissions factor
<b>Source of data</b>	Tool to calculate the emission factor for an electricity system” (version 07.0)
<b>Value applied</b>	0.25
<b>Justification of choice of data or description of</b>	-

measurement methods and procedures applied	
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 <sub>2</sub> e/MWh
Description	Baseline emission factor for North West China Power Grid.
Source of data	Calculated through $EF_{grid,OM,y}$ , $EF_{grid,BM,y}$ , $\omega_{OM}$ , $\omega_{BM}$
Value applied	0.779325
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) by China DNA.
Purpose of Data	Baseline emission calculation
Comments	Calculated ex ante and fixed for the second crediting period.

## 4.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plants/units to the grid
Source of data	Meter reading and electricity receipts
Description of measurement methods and procedures to be applied	Measured The calculation of this parameter is shown as below: $EG_{facility,y} = EG_{PJ\ to\ grid,y} - EG_{grid\ to\ PJ,y}$
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	586,886.103
Monitoring equipment	Bi-directional meters (M1 as main meter and M1' as backup meter) installed at the 330kV side of 35kV/330kV transformer.  MS1 and MS2 installed at the 35kV side of 35kV/330kV transformer. (Meter information and calibration see table 3 below)

	During this monitoring period, main meters M1 was running properly, hence meter readings from backup meter M1' has not been applied.
QA/QC procedures to be applied	Monthly power exported and imported to the NWPG are cross-checked against the electricity receipts. Based on the standard of DL/T448-2016, the calibrations are done by a qualified organization at least once per year for the monitoring meters.
Purpose of the data	Calculation of baseline emissions
Calculation method	/
Comments	/

Data / Parameter	<b>EG</b>
Data unit	MWh
Description	Total electricity supplied to the grid via the main power line by the Project and two solar projects.
Source of data	Readings of Bi-directional meters (M1 as main meter and M1' as backup meter) installed at the 330kV side of 35kV/330kV transformer. During this monitoring period, main meters M1 was running properly, hence meter readings from backup meter M1' has not been applied.
Description of measurement methods and procedures to be applied	Continuously measured and monthly recorded. Data are archived for 2 years following the end of the crediting period by means of electronic and paper backup.
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	677,792.544 MWh
Monitoring equipment	Bi-directional meters (M1 as main meter and M1' as backup meter).
QA/QC procedures to be applied	The accuracy of electricity meters is 0.2s. The calibration frequency is one time/year in accordance with the national calibration standard.
Purpose of the data	Calculation of baseline emissions
Calculation method	/
Comments	Uncertainty level of data is low

Data / Parameter	<b>EG<sub>PJ to grid,y</sub></b>
Data unit	MWh

<b>Description</b>	The Electricity exported to the grid by the Project
<b>Source of data</b>	Calculated through equation: $EG_{PJ \text{ to grid, } y} = EG - EG_{\text{solar}1,y} - EG_{\text{solar}2,y}$
<b>Description of measurement methods and procedures to be applied</b>	Continuously measured and monthly recorded. Data are archived for 2 years following the end of the crediting period by means of electronic and paper backup.
<b>Frequency of monitoring/recording</b>	Monitoring continuously and recorded monthly
<b>Value monitored</b>	587,751.495
<b>Monitoring equipment</b>	Bi-directional meters (M1 as main meter and M1' as backup meter) installed at the 330kV side of 35kV/330kV transformer.  MS1 and MS2 installed at the 35kV side of 35kV/330kV transformer. (Meter information and calibration see table 3 below)  During this monitoring period, main meters M1 was running properly, hence meter readings from backup meter M1' has not been applied.
<b>QA/QC procedures to be applied</b>	The accuracy of electricity meters M1 and M1' is 0.2s, while that of MS1 and MS2 is 0.5s. The calibration frequency is one time/year in accordance with the national calibration standard.  The data was cross checked by sales receipt.
<b>Purpose of the data</b>	Baseline emission calculation
<b>Calculation method</b>	/
<b>Comments</b>	Uncertainty level of data is low

<b>Data / Parameter</b>	$EG_{\text{grid to PJ},y}$
<b>Data unit</b>	MWh
<b>Description</b>	The Electricity imported from the grid by the Project.
<b>Source of data</b>	Use the value measured by the bi-directional meters (M1 as main meter and M1' as backup meter), including two solar projects, as the most conservative value. When main meter M1 is not working, the reading of backup meter M1' will be used.
<b>Description of measurement methods and procedures to be applied</b>	Continuously measured and monthly recorded. Data are archived for 2 years following the end of the crediting period by means of electronic and paper backup.

<b>Frequency of monitoring/recording</b>	Continuously measured and monthly recorded
<b>Value monitored</b>	865.392
<b>Monitoring equipment</b>	Bi-directional meters (M1 as main meter and M1' as backup meter)
<b>QA/QC procedures to be applied</b>	The accuracy of electricity meters is 0.2s. The calibration frequency is one time/year in accordance with the national calibration standard.  The data will be cross checked by purchase receipts.
<b>Purpose of the data</b>	Baseline emission calculation
<b>Calculation method</b>	/
<b>Comments</b>	Uncertainty level of data is low.  $EG_{grid\ to\ PJ,\ y}$ use the value measured by the meter M1 (and/or M1'), including two solar projects, which is conservative.

<b>Data / Parameter</b>	$EG_{solar1,y}$
<b>Data unit</b>	MWh
<b>Description</b>	Total electricity purchased from the grid by the Solar Project I and during year y
<b>Source of data</b>	Readings of electricity Meters MS1 installed at the 35kV transmission line of the Project site. (From 15-December-2022, Solar Project I and Solar Project II do not connect to the main meter M1)
<b>Description of measurement methods and procedures to be applied</b>	Continuously measured and monthly recorded. Data are archived for 2 years following the end of the crediting period by means of electronic and paper backup.
<b>Frequency of monitoring/recording</b>	Continuously measured and monthly recorded
<b>Value monitored</b>	45,152.268
<b>Monitoring equipment</b>	Electricity Meters MS1 installed at the 35kV transmission line of the Project site
<b>QA/QC procedures to be applied</b>	The accuracy of electricity meters is 0.2s. The calibration frequency is one time/year in accordance with the national calibration standard.
<b>Purpose of the data</b>	Baseline emission calculation
<b>Calculation method</b>	/
<b>Comments</b>	Uncertainty level of data is low.

Data / Parameter	$EG_{solar2,y}$
Data unit	MWh
Description	Total electricity purchased from the grid by the Solar Project II and during year y
Source of data	Readings of electricity Meters MS2 installed at the 35kV transmission line of the Project site. (From 15-December-2022, Solar Project I and Solar Project II do not connect to the main meter M1)
Description of measurement methods and procedures to be applied	Continuously measured and monthly recorded. Data are archived for 2 years following the end of the crediting period by means of electronic and paper backup.
Frequency of monitoring/recording	Continuously measured and monthly recorded
Value monitored	44,668.680
Monitoring equipment	Electricity Meters MS2 installed at the 35kV transmission line of the Project site
QA/QC procedures to be applied	The accuracy of electricity meters is 0.2s. The calibration frequency is one time/year in accordance with the national calibration standard.
Purpose of the data	Baseline emission calculation
Calculation method	/
Comments	Uncertainty level of data is low.

## 4.3 Monitoring Plan

### 1. Data collection and management

The electricity generated by the Project feeds to the Changma west 35kV/330kV substation through the 35kV transmission lines, then to NWPG after 35kV/330kV transformer. The project shares bi-directional electricity meters (M1 as main meter and M1' as backup meter) with two solar projects (the same owner with the project). Meanwhile, the electricity output and input of two Solar Projects can be measured by their own bi-directional meters (MS1, MS2). Hence the quantity of net electricity generation supplied by the project plant/unit to the grid ( $EG_{facility,y}$ ) is calculated as follow:

$$EG_{facility,y} = EG_{PJ \text{ to grid}, y} - EG_{grid \text{ to PJ}, y}$$

$$EG_{PJ \text{ to grid}, y} = EG - EG_{solar1,y} - EG_{solar2,y}$$

Where

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

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

EG is the electricity exported to the grid measured by M1 (and/or M1').

$EG_{\text{solar1,y}}$  is the electricity supply by the Solar Project I measured by MS1.

$EG_{\text{solar2,y}}$  is the electricity supply by the Solar Project II measured by MS2.

Meanwhile, electricity imported from the grid by the project use the value measured by the meter M1 (and/or M1'), including two solar projects, as the most conservative value.

Consider of the transmission and line loss, the electricity exported to the grid by the Project and the electricity imported from the grid by the Project are calculated by the grid company according to the approach defined in the PPA. After both sides confirming, the electricity receipts, for the electricity exported to the grid by the Project and the electricity imported from the grid by the Project are issued separately by the grid company in the end of each month. During this monitoring period, the cut off time is the 24:00 of the last day of each month. At this time, designated personnel of the grid company and project owner read and record the meter readings of main meter M1, MS1 and MS2 together. The manager of the Project wind farm counter-checked the reported data against with the electricity receipts before archived. The most conservative values have been used for the ERs calculation. The electricity imported from the grid by the Project has been deducted from the electricity exported to the grid by the Project to get the quantity of the net electricity supplied to the grid by the Project.

All data collected as part of monitoring is archived electronically and is kept until 2 years after the end of the total crediting period of the Project.

## **2. Meters Distribution**

More details for the distribution of metering equipment installation and monitoring points can be found at following figure 2.

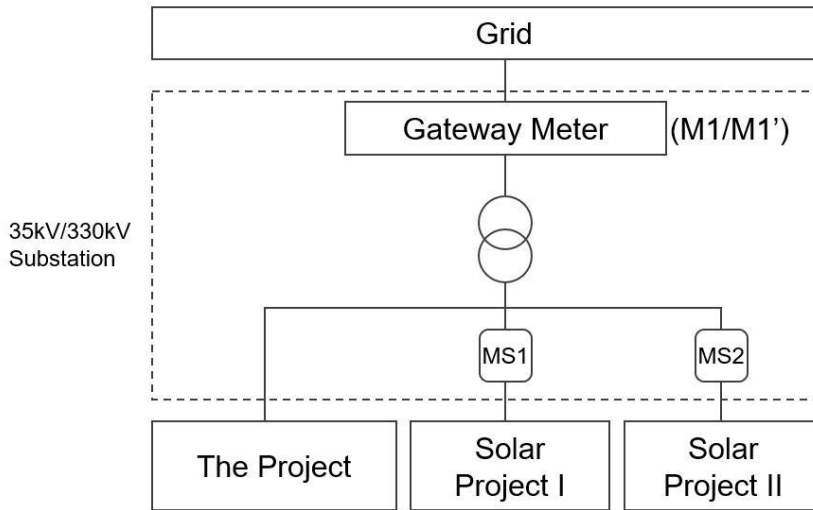
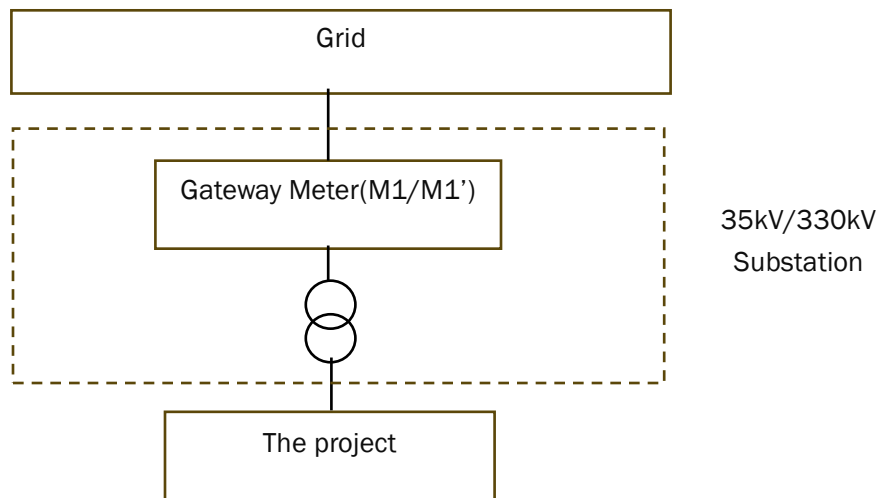


Figure2. The distribution of meters installation

From 15-December-2022, Solar Project I and Solar Project II do not connect to the gate way meter M1/M1'.



### 3. Meters Calibrations

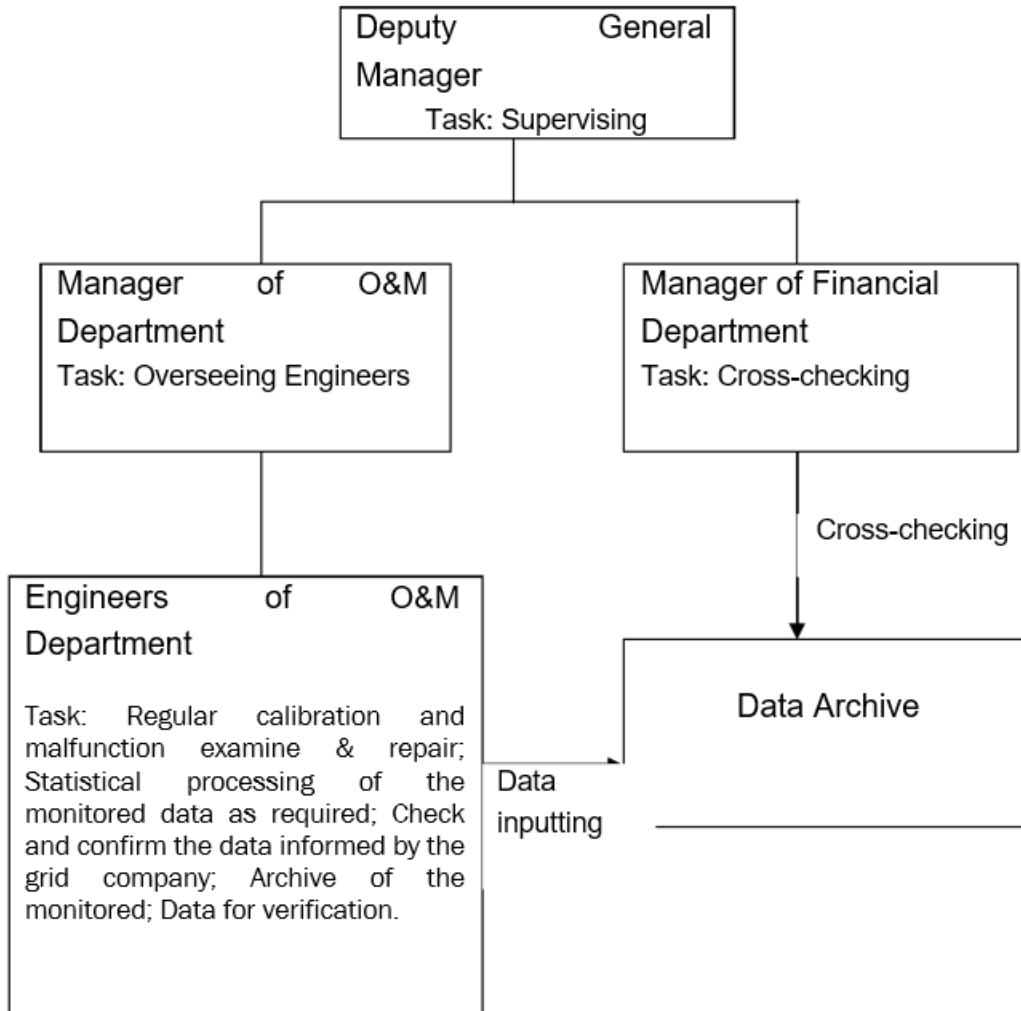
In renewed VCS PD, measurement meters have accuracy range of no less than 0.5S. M1 as main meter and M1' as backup meter with accuracy 0.2s. Two solar projects electricity meters MS1 (accuracy 0.5s) and MS2 (accuracy 0.5s) can meet the requirement of renewed VCS PD. The metering equipment are calibrated and checked in accordance with related regulations and rules. Calibration is carried out by authorized and qualified calibration entity. 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	Validity until	Calibrated by
M1 (Main meter)	Electric meter	217504320	0.2s	Annually	28-March-2021 28-November-2021 18-September-2022 26-December-2022	27-March-2022 27-November- 2022 17-September- 2023 25-December-2023	Electric Energy Measurement Centre of Gansu Electric Power Corporation
M1' (Backup meter)	Electric meter	217504322	0.2s	Annually	28-March-2021 28-November-2021 18-September-2022 26-December-2022	27-March-2022 27-November- 2022 17-September-2023 25-December-2023	Electric Energy Measurement Centre of Gansu Electric Power Corporation
MS1	Electric meter	211295667	0.2s	Annually	31-March-2021 25-Ocotber-2021	18-April-2022 15-November-2022	Electric Energy Measurement Centre of Gansu Electric Power Corporation
MS2	Electric meter	215294116	0.2s	Annually	31-March-2021 25-Ocotber-2021	18-April-2022 15-November-2022	Electric Energy Measurement Centre of Gansu Electric Power Corporation

#### 4. Organizational structure and responsibilities

The Project owner (CECIC Wind-power (Gansu) Co., Ltd.) established a Project Management Office (PMO). The organization structure of PMO is illustrated as follows



## 5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 5.1 Baseline Emissions

According to ACM0002, the baseline emission BE<sub>y</sub> 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,

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

$$EG_{facility,y} = EG_{PJ \text{ to grid, } y} - EG_{grid \text{ to PJ, } y}$$

$$EG_{PJ \text{ to grid, } y} = EG - EG_{solar1,y} - EG_{solar2,y}$$

Where:

$BE_y$  is the baseline emissions in year  $y$  (tCO<sub>2</sub>/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 VCS 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).

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

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

$EG$  is the electricity exported to the grid measured by M1 (and/or M1').

$EG_{solar1,y}$  is the electricity supply by the Solar Project I measured by MS1.

$EG_{solar2,y}$  is the electricity supply by the Solar Project II measured by MS2.

The summary of  $EG_{grid \text{ to PJ, } y}$  on the below table 4 and the net electricity each year supplied by the project activity to the grid,  $EG_{facility,y}$  is listed in following table 5.

Table 4 Determination of  $EG_{PJ \text{ to grid, } y}$  and  $EG_{grid \text{ to PJ, } y}$

Period	Electricity exported to the grid by the Project ( $EG_{PJ \text{ to grid, } y}$ ) (MWh)	Electricity imported from the grid by the Project ( $EG_{grid \text{ to PJ, } y}$ ) (MWh)	Data from meter readings			
			M1		MS1	MS2
			Electricity exported to the grid measured by M1 (EG)	Electricity imported from the grid measured by M1	Electricity supply by the Solar Project I measured by MS1 ( $EG_{solar1,y}$ )	Electricity supply by the Solar Project II measured by MS2 ( $EG_{solar2,y}$ )
			A= C - E - F	B=D	C	D
01-January-2022-31-January-2022	20,539.944	81.048	28,243.248	81.048	4,012.827	3,690.477
01-February-2022-28-February-2022	31,322.961	46.200	38,948.712	46.200	3,949.134	3,676.617
01-March-2022-31-March-2022	41,298.714	44.616	49,149.144	44.616	4,097.457	3,752.973
01-April-2022-30-April-2022	33,452.910	19.536	41,050.416	19.536	3,858.099	3,739.407
01-May-2022-31-May-2022	51,232.545	17.160	60,363.072	17.160	4,564.014	4,566.513
01-June- 2022-30-June- 2022	36,913.482	22.704	44,852.280	22.704	3,864.987	4,073.811
01-July- 2022-31-July- 2022	35,629.332	29.832	44,264.616	29.832	4,279.317	4,355.967
01-August-2022-31-August-2022	41,131.818	34.056	48,637.512	34.056	3,711.708	3,793.986
01-September-2022-30-September-2022	22,943.349	30.360	31,600.536	30.360	4,315.101	4,342.086
01-October-2022-31-October-2022	34,928.343	53.592	43,416.648	53.592	4,207.602	4,280.703
01-November-2022-30-November-2022	38,527.776	65.472	44,571.912	65.472	2,943.570	3,100.566
01-December-2022-31-December-2022	40,137.438	120.912	42,781.464	120.912	1,348.452	1,295.574
Subtotal 2022	<b>428,058.612</b>	<b>565.488</b>	<b>517,879.560</b>	<b>565.488</b>	<b>45,152.268</b>	<b>44,668.680</b>
01-January-2023-31-January-2023	51,443.040	77.352	51,443.040	77.352	0.000	0.000
01-February-2023-28-February-2023	19,616.784	109.032	19,616.784	109.032	0.000	0.000

01-March-2023-31-March-2023	37,906.176	33.000	37,906.176	33.000	0.000	0.000
01-April-2023-30-April-2023	50,946.984	30.360	50,946.984	30.360	0.000	0.000
Subtotal 2023	<b>159,912.984</b>	<b>249.744</b>	<b>159,912.984</b>	<b>249.744</b>	<b>0.000</b>	<b>0.000</b>
Total	<b>587,971.596</b>	<b>815.232</b>	<b>677,792.544</b>	<b>815.232</b>	<b>45,152.268</b>	<b>44,668.680</b>

Table 5 The calculation of EG<sub>facility,y</sub>

Period	EG <sub>PJ to grid, y</sub>			EG <sub>grid to PJ, y</sub>			EG <sub>facility,y</sub> EG <sub>PJ to grid, y</sub> minus EG <sub>grid to PJ, y</sub>
	data from meter readings	data from the ETN	data used to calculate the ER	data from meter readings	data from the ETN	data used to calculate the ER	
	A	B	C=MIN(A,B)	D	E*	F=MAX(D,E)	G=C-F
01-January-2022-31-January-2022	20539.944	20549.313	20539.944	81.048	79.200	81.048	20458.896
01-February-2022-28-February-2022	31322.961	31290.975	31290.975	46.200	52.800	52.800	31238.175
01-March-2022-31-March-2022	41298.714	41336.793	41298.714	44.616	52.800	52.800	41245.914
01-April-2022-30-April-2022	33452.910	33422.067	33422.067	19.536	26.400	26.400	33395.667
01-May-2022-31-May-2022	51232.545	51249.465	51232.545	17.160	26.400	26.400	51206.145
01-June-2022-30-June-2022	36913.482	36998.586	36913.482	22.704	26.400	26.400	36887.082
01-July-2022-31-July-2022	35629.332	35592.861	35592.861	29.832	26.400	29.832	35563.029
01-August-2022-31-August-2022	41131.818	41059.143	41059.143	34.056	26.400	34.056	41025.087
01-September-2022-30-September-2022	22943.349	23014.335	22943.349	30.360	26.400	30.360	22912.989
01-October-2022-31-October-2022	34928.343	34881.780	34881.780	53.592	52.800	53.592	34828.188
01-November-2022-30-November-2022	38527.776	38536.038	38527.776	65.472	79.200	79.200	38448.576
01-December-2022-31-December-2022	40137.438	40135.875	40135.875	120.912	105.600	120.912	40014.963
Subtotal 2022			<b>427838.511</b>			<b>613.800</b>	<b>427224.711</b>
01-January-2023-31-January-2023	51443.040	51443.040	51443.040	77.352	79.200	79.200	51363.840

01-February-2023-28-February-2023	19616.784	19616.784	19616.784	109.032	105.600	109.032	19507.752
01-March-2023-31-March-2023	37906.176	37906.176	37906.176	33.000	26.400	33.000	37873.176
01-April-2023-30-April-2023	50946.984	51105.120	50946.984	30.360	26.400	30.360	50916.624
Subtotal 2023			159912.984			251.592	159661.392
<b>Total</b>			<b>587751.495</b>			<b>865.392</b>	<b>586886.103</b>

The baseline emission during this monitoring period calculated as following:

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

Table5. Baseline emissions

Monitoring period	EG <sub>facility,y</sub> (MWh)	EF <sub>grid,CM,y</sub> (tCO <sub>2</sub> /MWh)	BE <sub>y</sub> (tCO <sub>2</sub> )
01-January-2022 - 31-December-2022	427,224.711	0.779325	332,941
01-January-2023 - 30-April-2023	159,661.392	0.779325	124,426
Total	586,886.103	0.779325	457,367

## 5.2 Project Emissions

According to the ACM0002, the emission of wind power project activity is zero, i.e., PE<sub>y</sub>=0.

## 5.3 Leakage Emissions

According to ACM0002, the leakage of wind power project is not needed to be considered.

## 5.4 GHG Emission Reductions and Carbon Dioxide Removals

Year	Baseline emissions or removals (tCO <sub>2</sub> e)	Project emissions or removals (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Net GHG emission reductions or removals (tCO <sub>2</sub> e)	Removal VCU (tCO <sub>2</sub> e)	Total VCUs (tCO <sub>2</sub> e)
01-Jan-2022 to 31-Dec-2022	332,941	0	0	332,941	332,941	332,941
01-Jan-2023 to 30-Apr-2023	124,426	0	0	124,426	124,426	124,426
Total	457,367	0	0	457,367	457,367	457,367

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference

<b>01-Jan-2022 to 31-Dec-2022</b>	361,383 <sup>3</sup>	332,941	-7.87%	The actual achieved emission reductions during this monitoring period are 4.75% less than estimated values mainly due to that the fluctuation of the wind resource.
<b>01-Jan-2023 to 30-Apr-2023</b>	118,811	124,426	4.73%	
<b>Total</b>	<b>480,194</b>	<b>457,367</b>	<b>-4.75%</b>	

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<sup>3</sup> The estimated annual emission reductions in the VCS PD are 361,383 tCO<sub>2</sub>e, the period 01-Jan-2023- 30-Apr-2023 covers 120 days, the corresponding estimated emission reductions are calculated as  $361,383/365*120=118,811$  tCO<sub>2</sub>e.

# APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

No commercially sensitive information has been excluded from the public version of the monitoring report.

## APPENDIX 2: < SDG 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
28-January-2011-27-April-2011	71,895.120	<a href="https://registry.verra.org/app/projectDetail/VCS/728">https://registry.verra.org/app/projectDetail/VCS/728</a>
28-April-2011-29-October- 2011	166,643.160	<a href="https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303442859.42/view">https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303442859.42/view</a>
30-October- 2011-28-April-2012	162,735.900	
29-April-2012-28-September-2012	145,324.840	
29-September-2012-31-December-2012	104,310.990	
01-January-2013-31-December-2014	675,368.080	
01-January-2015-31-December-2015	214,605.090	
29-September-2012-31-December-2012	104,310.990	<a href="https://registry.verra.org/app/projectDetail/VCS/728">https://registry.verra.org/app/projectDetail/VCS/728</a>
01-January-2016-30-June- 2018	699,128.193	
01-July-2018-31-December-2019	576,120.810	
01-January-2020-27-January-2021	461,874.502	
28-January-2021-31-December-2021	447,068.841	
01-January-2022-30-April-2023	586,886.103	Section 5 of this report
<b>Cumulative amount since operation start</b>	4,311,754.625	/

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

period	Amount of emission reductions (tCO <sub>2e</sub> )	Data source
28-January-2011-27-April-2011	65,999	<a href="https://registry.verra.org/app/projectDetail/VCS/728">https://registry.verra.org/app/projectDetail/VCS/728</a>
28-April-2011-29-October-2011(CER)	152,788	<a href="https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303442859.42/view">https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1303442859.42/view</a>
30-October-2011-28-April-2012(CER)	149,391	
29-April-2012-28-September-2012(CER)	133,408	
29-September-2012-31-December-2012(CER)	95,757	
01-January-2013-31-December-2014(CER)	619,987	
01-January-2015-31-December-2015(CER)	197,007	
29-September-2012-31-December-2012(VER) <sup>4</sup>	95,757	
01-January-2016-30-June-2018 (VER)	641,798	
01-July-2018-31-December-2019(VER)	528,878	
01-January-2020-27-January-2021(VER)	423,999	
28-January-2021-31-December-2021(VER)	348,411	
01-January-2022-30-April-2023(VER)	457,367	Section 5 of this report
<b>Cumulative amount since operation start</b>	<b>3,814,790</b>	/

<sup>4</sup> As explained in section 1.10, the VER issued in VCS is cancelled in CDM

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

### 中节能(甘肃)风力发电有限公司昌西第三风电场

序号	单位	部门	姓名	岗位	性别	备注
1	中节能(甘肃)风力发电有限公司	昌西第三风电场	王明扬	厂长	男	
2	中节能(甘肃)风力发电有限公司	昌西第三风电场	陈果	副厂长	男	
3	中节能(甘肃)风力发电有限公司	昌西第三风电场	李茜	副厂长	女	
4	中节能(甘肃)风力发电有限公司	昌西第三风电场	曹欢	党建、档案	女	
5	中节能(甘肃)风力发电有限公司	昌西第三风电场	曹雪清	安全员	男	
6	中节能(甘肃)风力发电有限公司	昌西第三风电场	陈程	行政	女	
7	中节能(甘肃)风力发电有限公司	昌西第三风电场	陈伟林	组长	男	
8	中节能(甘肃)风力发电有限公司	昌西第三风电场	马静	组员	女	
9	中节能(甘肃)风力发电有限公司	昌西第三风电场	王帆	组员	女	
10	中节能(甘肃)风力发电有限公司	昌西第三风电场	汪浩	组员	男	
11	中节能(甘肃)风力发电有限公司	昌西第三风电场	李国栋	组员	男	
12	中节能(甘肃)风力发电有限公司	昌西第三风电场	汪海洋	组员	男	
13	中节能(甘肃)风力发电有限公司	昌西第三风电场	王敬	组员	女	
14	中节能(甘肃)风力发电有限公司	昌西第三风电场	王小军	检修员	男	
15	中节能(甘肃)风力发电有限公司	昌西第三风电场	张琳	检修员	女	

