CECIC HKE ZHANGBEI LVNAOBAO WIND FARM PROJECT

Project title	**CECIC HKE Zhangbei Lvnaobao Wind Power Project**
Project ID	727
Monitoring period	01-January-2022 to 30-April-2023
Original date of issue	26-Febuary-2024
Most recent date of issue	20-May-2024
Version	Version 03
VCS Standard Version	VCS standard version 4.7
Prepared by	Smart Carbon Environment & Energy Limited

CONTENTS

PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

CECIC HKE Zhangbei Lvnaobao Wind Power Project (hereafter referred as "the project) is a Greenfield grid-connected wind power project. The project is invested, constructed and operated by CECIC HKE Wind Power Co., Ltd. The total installed capacity of the project is 100.5MW equipped with 67 sets of wind turbines with a unit installed capacity of 1,500kW.

The objective of the project is to generate electricity by using wind resource and deliver the generated electricity to North China Power Grid (NCPG) via a 220 kV transmission line. As a renewable energy source, the project generates emission reductions by avoiding CO_2 emissions from the same amount of electricity generation from NCPG, which is mainly dominated by fossil fuel-fired power plants.

Relevant dates for the project are as follows:

The construction of the project started on 20 August 2008, the first wind turbine of the project has been put into operation on 26 July 2010 and the commissioning time of all 67 wind turbines was 24 September 2010. The project has been registered as a CDM project on 28 October 2010 (No.3399) and was renewed on 17 August 2018. The project has been registered as a VCS project (No. 727).

This monitoring period is from 01 January 2022-30 April 2023, the emission reductions in this monitoring period is 210,457 tCO_2e.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	28-October-2010	CDM	TÜV SÜD Industrie Service GmbH	/
Renewal of crediting period Validation	17-August-2018	CDM	LGAI Technological Center, S.A.	/
Renewal of crediting period Validation	06-April-2020	VCS	LGAI Technological Center, S.A.	/
Verification	01-August-2010 – 27-October-2010	VCS	Bureau Veritas Certification Holding SAS	0.24
Verification	28-October-2010 – 28-February-2011	CDM	Bureau Veritas Certification Holding SASs	0.34

Verification	01-March-2011 – 29-February-2012	CDM	Bureau Veritas Certification Holding SASs	1.00
Verification	01-March-2012 – 31-December-2012	CDM	Bureau Veritas Certification Holding SASs	0.84
Verification	01-January-2013 – 31-December-2013	CDM	Bureau Veritas Certification Holding SASs	1.00
Verification	01-January-2014 – 31-December-2014	CDM	Bureau Veritas Certification Holding SASs	1.00
Verification	01-January-2015 – 31-August-2015	CDM	Bureau Veritas Certification Holding SASs	0.67
Verification	01-September-2015 - 27 October-2017	VCS	LGAI Technological Center S.A.	2.16
Verification	28 October-2017 – 30-November-2019	VCS	LGAI Technological Center S.A.	2.09
Verification	01-December-2019 - 31-December-2021	VCS	LGAI Technological Center S.A.	2.09
Verification	01-January-2022 – 30-April-2023	VCS	CTI Certification Co., Ltd	1.33
Total	01-August-2010 - 30-April-2023	CDM&VCS	/	12.76

1.3 Sectoral Scope and Project Type

Sectoral scope[1]	**Sectoral scope 1: energy industries (renewable - / non-renewable sources).**
Project activity type	Renewable energy Projects. Grid connected wind power project

Sectoral scope	**Not applicable as this is not an AFOLU project**
AFOLU project category[2]	Not applicable as this is not an AFOLU project
Project activity type	Not applicable as this is not an AFOLU project

[1] *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*

[2] *See Appendix 1 of the* VCS Standard

1.4 Project Proponent

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

1.5 Other Entities Involved in the Project

Organization name	**Smart Carbon Environment & Energy Limited**
Role in the Project	Consultancy
Contact person	Li Jing
Title	Manager
Address	No.145 Chaoyang North Road, Chaoyang District, Beijing, P. R. China.
Telephone	86-13810160876
Email	carbon@bjsmartcarbon.com

1.6 Project Start Date

Project start date	26-July-2010
Justification	It is the date when the first turbine was commissioned

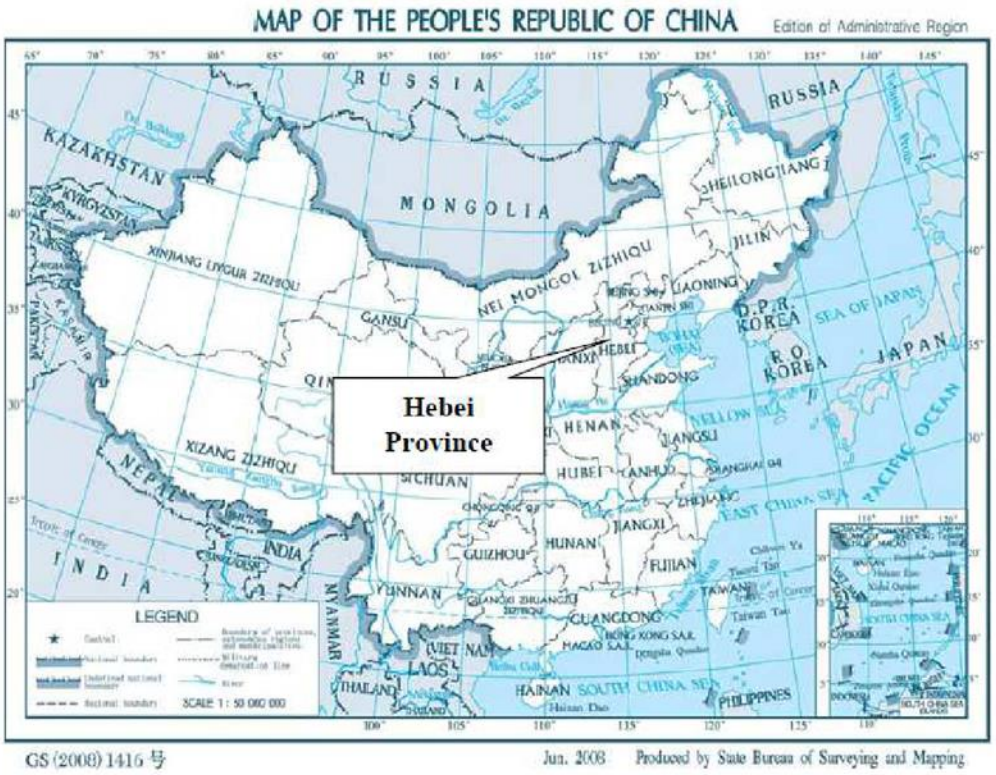
1.7 Project Crediting Period

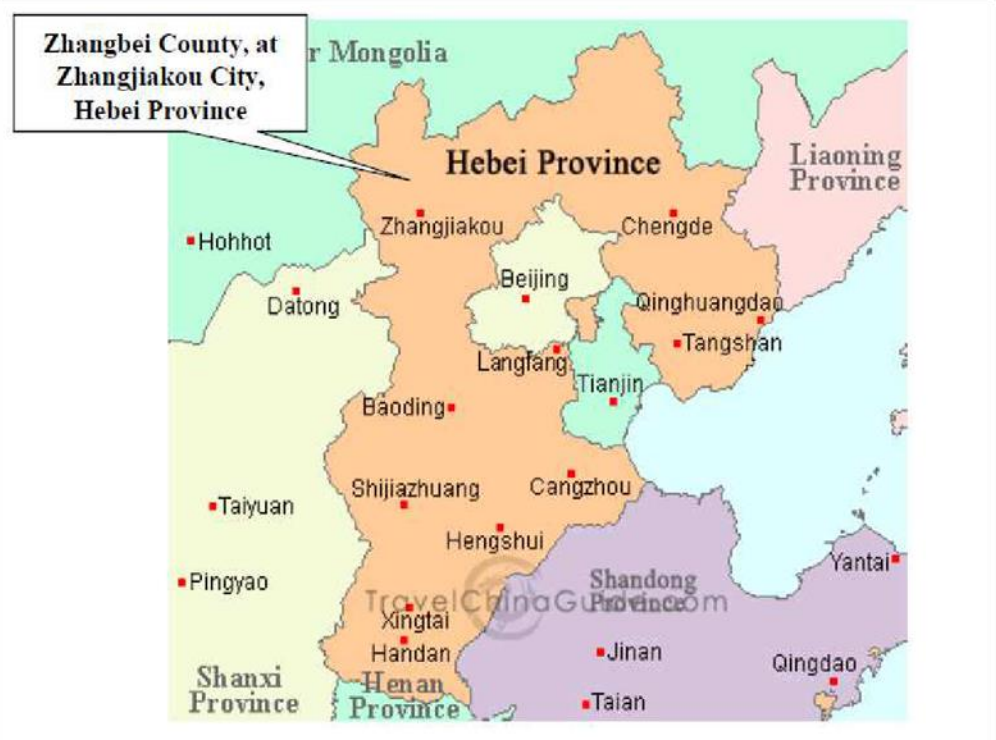
Crediting period	☐ Seven years, twice renewable ☐ Ten years, fixed ☒ Other

	The first crediting period under VCS is from 01-August-2010 to 31-July-2020 (10 years, renewable). Therefore, the total crediting period under VCS would have been from 01-August-2010 to 31-July-2040 (30 years). However, the project was registered under CDM on 28-October-2010. And the total crediting period under CDM is from 28-October-2010 to 27-October-2031 (21years). According to VCS standard, the total crediting period under VCS is from 01-August-2010 to 27-October-2030)
Start and end date of first or fixed crediting period	01-August-2010 to 31-July-2020

1.8 Project Location

The project is located at Zhangbei County, Zhangjiakou City, Hebei Province, P.R.China. The Project has geographical coordinates with North Latitude of 41˚03'50", East Longitude 114˚32'30". The location of the project is provided in Fig1.


MAP OF THE PEOPLE'S REPUBLIC OF CHINA
Edition of Administrative Region
Hebei Province
LEGEND
GS (2008) 1416 号
Jun. 2008
Produced by State Bureau of Surveying and Mapping


Zhangbei County, at Zhangjiakou City, Hebei Province
Hebei Province
Liaoning Province
Zhangjiakou
Chengde
Hohhot
Beijing
Datong
Qinghuangdao
Tangshan
Langfang
Tianjin
Baoding
Shijiazhuang
Cangzhou
Taiyuan
Hengshui
Yantai
Pingyao
Shandong Province
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Handan
Jinan
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Shanxi Province
Henan Province
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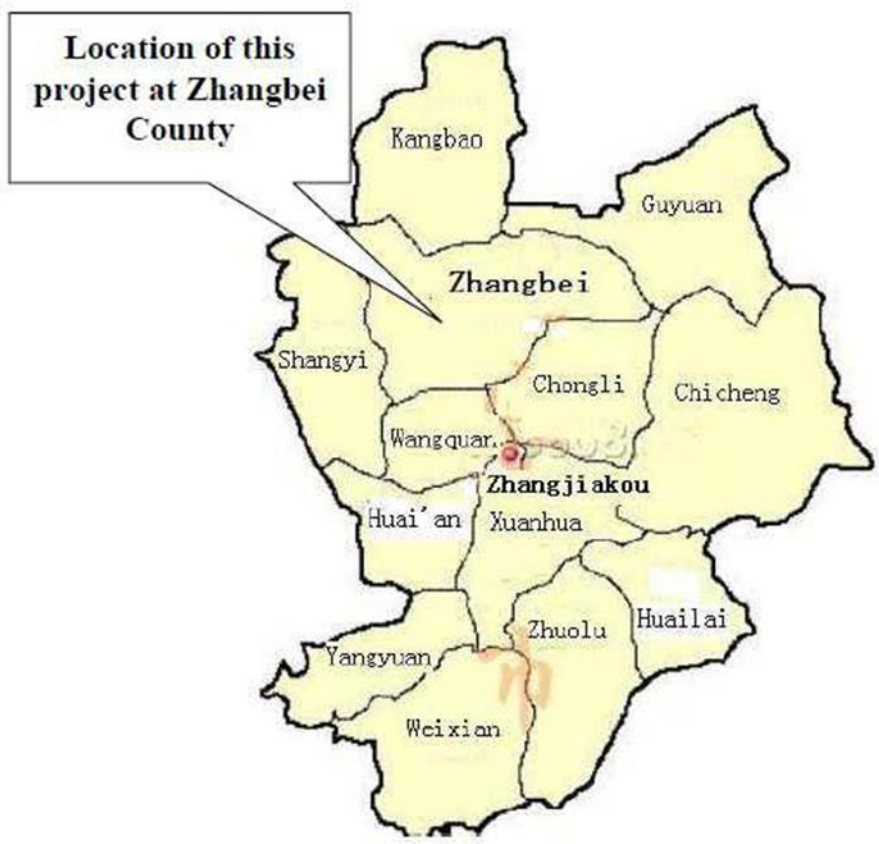

Figure 1. Project location

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	07	Tool to calculate the emission factor for an electricity system	Version 07.0
Tool	01	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. Although, the GHG emission generated from 01-March-2012 to 31-December-2012 had listed in both VCS and CDM registry, however, the 57,357 tCO_2 issued under VCS mechanism, has been cancelled in CDM Registry. Hence, the project has no issue in terms of double counting.

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-October-2010 (UNFCCC Ref.3399). and the emission reductions during 28 Oct 2010 to 31 Aug 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

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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 North China Power Grid (NCPG). 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 Zhangbei County, Zhangjiakou City, Hebei Province in the People's Republic of China. In this monitoring period,

The project supplied 250,405.565 MWh renewable electricity to NCPG, which contributes to SDG 7.

8 local people have been employed as long-term job opportunities for local, which has a positive effect on the local economy and contributes to SDG 8.

The project achieved 210,457 tCO_2e emission reductions during this monitoring period which contributes to SDG 13.

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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, 250,405.565 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 2,735,086.246 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 during this monitoring period	8 people have been employed by the project as long-term employee by end of the reporting period.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	During this monitoring period, the project has achieved GHG emission reductions of 210,457tCO_2e.	From the operation start date of this project activity to the end of this monitoring period, the project has achieved GHG emission reductions of 2,752,643 tCO_2e.

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

Stakeholder Identification

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.

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.
Legal or customary tenure/access rights	The project is located in mountain 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. 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.		
Stakeholder diversity and changes over time	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. 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. Over time, the members of each group will adjust, but their groups doesnot change much in terms of society, economy, culture, etc.		
Expected changes in well-being	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 NCPG 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:		

	Local people's well-being: The construction and operation of the project provide employment opportunities for the local people, 8 persons have been employed by the project as long-term employee period. Social welfare: The implementation of the project promoted the local economic development, and provided employment opportunities. Climate change Impact: The Project generates electricity from renewable source to displace equal electricity generated from NCPG, which is dominated by fossil fuel fired power plants. Collectively, these changes will have a positive impact on villagers' livelihoods and living environment around the project site.
Location of stakeholders	This project is a wind power project, which is located in mountain areas, not towns or urban residential areas. It is expected to be affected by the project in the villages near the project. That is Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China. The project is geographically located in mountain areas, which is about 500m from the local people live area. The stakeholders, Local Communities, in Zhangbei County can use the electricity generated by this renewable power plant and have chances to be employed by the project. The areas outside the project area that are predicted to be impacted by the project is the other counties near Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China, the peoples live in the area can also use the electricity generated by this renewable power plant. The project have no negative impacts on these peoples.
Location of resources	The location of territories and resources which stakeholders own or to which they have customary access are located in Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	For continuous communication with local stakeholders, the project owner public its office telephone to local people and put a grievance notebook in the office of the company. Anyone who have comments on the project could write on the book or leave messages by phone.
Date(s) of stakeholder consultation	01 Jan 2022 to 30 Apr 2023 (this monitoring period)
Communication of monitored results	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..
Consultation records	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. 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.
Stakeholder input	During this monitoring period the project has not received any complaints by telephone or in the grievance notebook from stakeholders.notebook

2.1.3 Free, Prior, and Informed Consent

Consent	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 Zhangbei County by the project owner on 10 March 2008. The consultations included two parts. One is questionnaire survey, and the another is the meeting among local people with the developer. **Conclusions of the questionnaire:** Most respondents (31/35) agree and support the development of the project. Some respondents provide their concern in the section of Question 5(Which issue you are most concerned with during the construction and operation period of the project) and descriptive questions on the possible negative impacts caused by the project, including land occupation, grass and road destroy, noise of truck at night etc, which possibly occur at the period of construction and all of these were mentioned and designed to be solved in EIA report. **Conclusions of the meeting discussions:** With respect to local economic development, this wind farm project is expected to greatly promote the development of wind power in Hebei Province. Hopefully this project could also help drive the local economic growth and contribute much to local fiscal revenues. Wind electricity can provide "green energy" for the Hebei power grid and boost local sustainable development. With respect to environmental protection, the environmental impact analysis (EIA) for this project shows that noise level associated with the operation of this wind-turbine can meet the permitted range of China's national standard. As is known this project is geographically located far from the downtown of Zhangbei County, apparently without the possibility of telecommunication signal jamming. In addition, no migratory bird is flying over this region.

	With respect to local people's life and employment, the project is basically without negative impact on the people's daily life, but can be possible to employ some local farmers or herdsmen nearby. During the construction and operation of this project, the related purchases and consumption could promote local business and trade, thus increasing local farmer's income. The stakeholders are very supportive of this project and looking forward to the operation of the project as early as possible. And the project owner will strengthen the communication with the stakeholders, and confirm the measurements given in the EIA report will be implemented totally to solve the issues the local people concern mostly, including land occupation, grass and road destroy, noise of truck at night etc at the construction period. During these consultations, PP provided detailed information about the project, including the nature, scale, speed, reversibility and scope of the proposed project or activity; The reason or purpose of the project and/or activity; Duration of project activities; Locations that will be affected; And a preliminary assessment of economic, social, cultural and environmental impacts, including potential risks and fair and equitable benefit-sharing, respecting the precautionary principle. In addition, PP actively listen to concerns and feedback from our stakeholders and address any questions or concerns raised. Through this process, we were able to reach a transparent agreement with the community on the implementation of project activities. In addition, PP have been monitoring the situation in the community to identify any ongoing or unresolved conflicts that may be affected by the project. They take active steps to ensure that projects do not exacerbate or influence the outcome of these conflicts. This includes ongoing dialogue with communities and a commitment to adapt our approach as needed to avoid any negative impact on local dynamics.
Outcome of FPIC	The project land is mountain 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. 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.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
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: 1. Receiving Complaints: Any complaints related to the project will be received and recorded. The project owner has placed a comment book in the front office of the company and posted the contact person and contact information for stakeholders to submit complaints, either in writing, orally or through a designated contact person. 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. 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	N/A

actions they will take. This will ensure transparency and continuity of communication. 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. 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. No complaints were received during the monitoring period	

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 mountain 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, livelihoods of the local population and climate change.
Working conditions	No risk identified	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 undertook as per the approved EIA and carry out regular occupational health and safety testing every year to ensure the safety and healthy working environment.
Safety of women and girls	No risk identified	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.
Safety of minority and marginalized groups, including children	No risk identified	Project activities provide 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.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	The pollutants of dust, noise, solid waste and waste water during the construction, noise solid waste and waste water during operation are identified.	**Dust**: Since the local residential area is at least 500m away from the wind farm site, the impact of construction dust to the local region is limited. Several measures will be implemented to reduce the impact of dust on local residents and the construction staff, including watering and earthwork covering. **Noise**: Construction machines, transportation vehicles and construction work will generate noise. However, the noise levels are within acceptable levels at the nearest habitation, which is 500m away from the project site. Furthermore, using machinery and equipments with low noise levels, and arranging the construction times during day time, reduces the impact to the environment significantly. The operating noise of these turbines ranges from 101 dB to 105dB. With at least 500 meters far from the turbines, where residential areas are located, the noise has been greatly weakened

		to about 37 dB, dropping down below the national standard (No. GB 3096-93) of 45dB in night and 55 dB in daytime. There are no effects on the local residential life from the operational noise. **Solid waste**: The solid wastes from the construction include waste soil and stone and construction wastes, as well as some waste from human life. All these wastes are collected and disposed properly to the landfill site of Zhangbei County. **Waste water**: The waste water was generated from construction work and the project office. The total volume is small and it was treated and re-used as watering or sprinkler. Solid waste and waste water was produced by operation staff during operation period. The emitted waste quantity is very small and does not caused interference with the environment after proper treatment or integrated utilization.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	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.
Management experience	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. 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.
Gender equity in labor and work	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.
Human trafficking, forced labor, and child labor	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. 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. 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.

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. the right for the employee was fully considered

2.3.3 Indigenous Peoples and Cultural Heritage

The project is geographically located in Gobi desert areas, there is no cultural heritage to be protected in or around the project site.

2.3.4 Property Rights

Disputes over rights to territories and resources	The project got the approval from government about the land use, does not involve any possible conflicts of rights.
Respect for property rights	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 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.

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

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	According to the EIA and it's approval there was not risk identified on biodiversity and ecosystems
Soil degradation and soil erosion	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
Water consumption and stress	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
Usage of fertilizers	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.

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 20-August-2008. The first wind turbine of the project started commissioning on 26-July-2010. The project was put into full operation on 24-September-2010.

The project is a greenfield grid-connected wind power project. The project adopts the domestically-made wind turbines, and does not involve international technology transfer. These turbines will be manufactured and assembled by Dongfang Steam Turbine Co. Limited. The total installed capacity of the project is 100.5MW equipped with 67 sets of wind turbines (Model type: FD77B) with a unit installed capacity of 1.5MW. Electricity generated by the project is delivered to NCPG via a 220 KV transmission line.

Item	Technical parameters
Type of Turbine	FD77B
Rated power (kW)	1500
Number of Blades	3
Rotor diameter (m)	77
Swept area (m2)	4657
Rated Rotational speed (rpm)	9.6-17.3
Cut-in wind speed (m/s)	3
Rated wind speed (m/s)	12.5
Cut-out wind speed (m/s)	20
Hub height of the wind turbines (m)	70
Capacity (kW)	1500
Rated Voltage (V)	690

During this monitoring period (01-January-2022 to 30-April-2023), the monitoring system of the project was implemented in line with the monitoring plan. The wind farm had a good running, no equipment is overhauled or replaced in this monitoring period. No events or emergency occurred during the monitoring period, which may impact the emission reductions and monitoring

3.2 Deviations

3.2.1 Methodology Deviations

There is no methodology deviation in this monitoring period.

3.2.2 Project Description Deviations

The project was registered under CDM scheme on 28-October-2010 with reference number of 3399. According to CDM standard, the crediting period is from 28-October-2010 to 27-October-2017, which could be renewed twice.

Then the project was registered under VCS scheme in 2011. In the registered PD, the project commission date is 01-August-2010 and crediting period is from 01-August-2010 to 27-October-2010. The first issuance under is from 01-August-2010 to 27-October-2010. While according to VCS standard Version 3.7, the project crediting period is allowable for 10 years and could be renewed twice. Therefore, the first crediting period of project has been determined as 01-August-2010 to 31-July-2020.

The deviation has no impact for the applicability of the methodology, additionality or the appropriateness of the baseline scenario and meet all appropriate rules and requirements of VCS standard.

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

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2e/MWh
Description	Baseline emission factor: the combined emission factor of the project grid system. $EF_{grid,CM,y}$ was not directly available at validation but calculated based on other parameters in the PD available at validation,

	therefore in the MR, only EFgrid,CM,y is included and the rest of the parameters are either used to calculate EFgrid,CM,y or not used in the MR.
Source of data	renewed PD
Value applied	0.8405
Justification of choice of data or description of measurement methods and procedures applied	Notification on 2019 baseline emission factors for regional power grids in China, issued by China DNA and the renewed PD. http://www.mee.gov.cn/ywgz/ydqhbh/wsqtkz/202012/t20201229_815386.shtml
Purpose of Data	Baseline emission calculation
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

Following approved methodology ACM0002, the data that is required to be monitored to establish the emission reductions, is the quantity of net electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$). $EG_{facility,y} = EG_{togrid,y} - EG_{fromgrid,y}$

Data / Parameter	$EG_{togrid,y}$
Data unit	MWh
Description	Quantity of annual electricity exported to the grid by the project.
Source of data	Monitored from electricity meters within the wind farm.
Description of measurement methods and procedures to be applied	Two sets of bi-direction ammeters are employed at the 220kV substation by the project, one of which is for backup. The electricity delivered to the grid will be monitored through the bi-direction metering equipment. Monthly power exported to NCPG will be approved and signed off by monitoring and auditing staff before it is accepted and stored.
Frequency of monitoring/recording	Measuring continuously / Reading monthly.
Value monitored	251,200.865
Monitoring equipment	Serial No. | Accuracy | Calibration date | Validity of the Calibration | Calibration frequency

	37006426 Main meter	0.2s	28 May 2021 25 March 2022 08 February 2023	27 May 2022 24 March 2023 07 February 2024	Annually
	37006420 Backup meter	0.2s	28 May 2021 25 March 2022 08 February 2023	27 May 2022 24 March 2023 07 February 2024	Annually

QA/QC procedures to be applied	Monthly power exported to the NCPG is cross-checked against sales receipts. The metering equipment are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.
Purpose of the data	Calculation of baseline emissions
Calculation method	/
Comments	/

Data / Parameter	$EG_{fromgrid,y}$
Data unit	MWh
Description	Quantity of annual electricity imported from the grid by the project.
Source of data	Monitored from electricity meters within the wind farm.
Description of measurement methods and procedures to be applied	Two sets of bi-direction ammeters are employed at the 220kV substation by the project, one of which is for backup. The electricity delivered to the grid will be monitored through the bi-direction metering equipment. Monthly power exported to NCPG will be approved and signed off by monitoring and auditing staff before it is accepted and stored.
Frequency of monitoring/recording	Measuring continuously / Reading monthly.
Value monitored	795.300

Monitoring equipment	Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency

	37006426 Main meter	0.2s	28 May 2021 25 March 2022 08 February 2023	27 May 2022 24 March 2023 07 February 2024	Annually
	37006420 Backup meter	0.2s	28 May 2021 25 March 2022 08 February 2023	27 May 2022 24 March 2023 07 February 2024	Annually

QA/QC procedures to be applied	Monthly power exported to the NCPG is cross-checked against sales receipts. The metering equipments are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.
Purpose of the data	Calculation of baseline emissions
Calculation method	/
Comments	/

Data / Parameter	$EG_{facility,y}$
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y.
Source of data	Monitored from electricity meters within the wind farm and calculated.
Description of measurement methods and procedures to be applied	Result of $EG_{togrid,y}$ minus $EG_{fromgrid,y}$.
Frequency of monitoring/recording	Measuring continuously / Reading monthly.
Value monitored	250,405.565

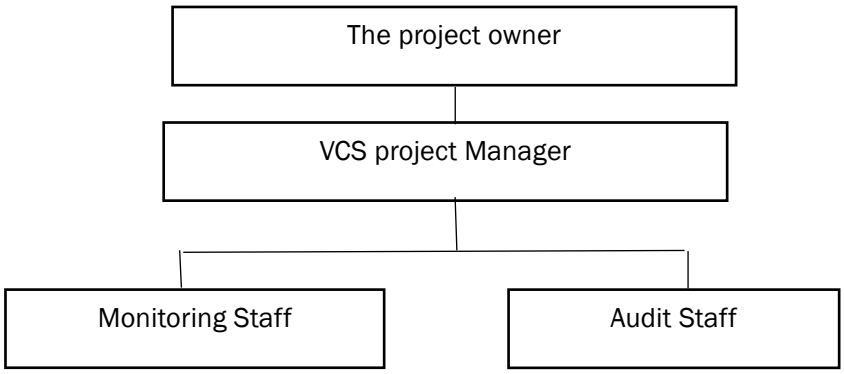
Monitoring equipment					
	Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency
	37006426	0.2s	28 May 2021	27 May 2022	Annually

	Main meter		25 March 2022 08 February 2023	24 March 2023 07 February 2024	
	37006420 Backup meter	0.2s	28 May 2021 25 March 2022 08 February 2023	27 May 2022 24 March 2023 07 February 2024	Annually
QA/QC procedures to be applied	Monthly power exported to the NCPG is cross-checked against sales receipts. The metering equipments are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.				
Purpose of the data	Calculation of baseline emissions				
Calculation method	$EG_y = EG_{togrid,y} — EG_{fromgrid,y}$				
Comments	/				

4.3 Monitoring Plan

4.3.1 Monitoring system organization

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with CECIC HKE WIND POWER CO., LTD. The company will assign dedicated people responsible for the monitoring and reporting of the generation and emission reductions of the project activity. The operating and management structure is illustrated as followed:



4.3.2 Installation of meters

Two sets of bi-direction ammeters in the 220KV substation within the wind farm are employed by the project, one of which is for backup. Every month the 220kV substation in the wind farm will report the electricity exchanged between the project and NCPG.

4.3.3 Calibration of meters & metering

The metering equipment will be calibrated and checked by qualified third party for accuracy according to local industry standards so that the metering equipment shall have sufficient accuracy of 0.5s. Both meters shall be jointly inspected and sealed on behalf of the parties concerned and shall not be interfered with by either party except in the presence of the other party or its accredited representatives.

All the meters installed shall be tested by the NCPG within 10 days after: the detection of a difference larger than the allowable error in the readings of both meters; the repair of all or part of meter caused by the failure of one or more parts to operate in accordance with the specifications.

If any errors are detected the party owning the meter shall repair, recalibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by: (a) first, by reading backup meter, unless a test by either party reveals it is inaccurate; (b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the project owner and the grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when VVB undertakes verification; and (c) if the two parties fail to agree then the matter will be referred for arbitration according to agreed procedures.

4.3.4 Data collection and management system

As described in the monitoring plan, the project wind farm records reading monthly from the meter equipment within the project site.

The net electricity generation of the project was monitored through the main bi-directional metering equipment installed at the high level of the onsite 220kV substation, recording exported to the grid by the project ($EG_{togrid,y}$)and imported from the grid by the project ($EG_{fromgrid,y}$). The meters reading are recorded monthly at the last day 24:00 each month. The net generation supplied is calculated as exports minus imports. The data was monitored continuously, and the results of reading was recorded and supplied to Zhangjiakou Electric Power Company monthly. The monitoring points shows below:

Designated personnel of the wind farm read and record the readings of the meters mentioned above monthly. The VCS manager of the project wind farm checked out the reported data against with the sales receipts before archived.

All data including calibration records was kept until 2 years after the end of the total crediting period of the project.

4.3.5 Quality control

Monthly net generation data will be approved and signed off by monitoring and auditing staff before it is accepted and stored.

This audit will check compliance with operational procedures in this monitoring plan.

This internal audit will also identify potential improvements to procedures to improve monitoring and reporting in future years. If such improvements are proposed, these will be reported to the VVB and only operated after approval from the VVB.

4.3.6 Emergency Procedures

If any errors are detected the party owning the meter shall repair, re-calibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by:

(a) first, by reading backup meter, unless a test by either party reveals it is inaccurate;
(b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly, the project owner and the grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when VVB undertakes verification; and
(c) if the two parties fail to agree then the matter will be referred for arbitration according to agreed procedures.

The project is operated and implemented smoothly during this monitoring period. Neither emergencies happened to the monitoring system, nor did events or situations occur during the monitoring period

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

According to ACM0002 and the registered PDD of the project, the baseline emission BE_y during the monitoring period results from:

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

$$EG_{facility.y} = EG_{togrid,y} - EG_{fromgrid,y}$$

Where:

BE_y is the baseline emissions of the project;

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

$EG_{facility.y}$ is the net electricity supplied to the grid by the project;

$EG_{togrid,y}$ is the quantity of electricity exported to the grid by the project;

$EG_{fromgrid,y}$ is the quantity of electricity imported from the grid by the project.

The yearly electricity volume and baseline emissions are listed in following table 2.

Table 2. Baseline emissions.

Monitoring Period	$EG_{togrid,y}$ (MWh)	$EG_{fromgrid,y}$ (MWh)	$EG_{facility,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO_2/MWh)	BE_y (tCO_2e)
01-Jan-2022 to 31-Dec-2022	183,514.116	607.200	182,906.916	0.8405	153,727
01-Jan-2023 to 30-Apr-2023	67,686.749	188.100	67,498.649	0.8405	56,730
Total	**251,200.865**	**795.300**	**250,405.565**	**0.8405**	**210,457**

The monthly data are shown in appendix 2

5.2 Project Emissions

According to the ACM0002, the emission of wind power project activity is zero, i.e., $PE_y=0$.

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

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Reduction VCUs (tCO_2e)	Removal VCUs (tCO_2e)	Total VCUs (tCO_2e)
01-Jan-2022-31-Dec-2022	153,727	*0*	*0*	153,727	153,727	153,727
01-Jan-2023-30-Apr-2023	56,730	*0*	*0*	56,730	56,730	56,730
Total	**210,457**	*0*	*0*	**210,457**	**210,457**	**210,457**

Vintage period	Ex-ante estimated reductions / removals (tCO_2e)	Achieved reductions/ removals (tCO_2e)	Percent difference (%)	Explanation for the difference (%)
01-Jan-2022-31-Dec-2022	203,136	153,727	-24.32%	

01-Jan-2023-30-Apr-2023	66,784[3]	56,730	-15.06%	The main reason of the decrease are the fluctuation of the wind resource and the limited absorption capacity of the power grid.
Total	**269,920**	**210,457**	**-22.03%**	

[3] The estimated annual emission reductions in the renewed VCS PD are 203,136 tCO2e, the period 01-Jan-2023- 30-Apr-2023 covers 120 days, the corresponding estimated emission reductions are calculated as 203,136/365*120=66,784 tCO_{2e}.

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

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

APPENDIX 2: < MONTHLY AND YEARLY ELECTRICITY DATA>

Period	$EG_{togrid,y}$			$EG_{fromgrid,y}$			$EG_{facility,y}$
	data from main meter readings	data from the ETN	data used to calculate the ER	data from main meter readings	data from the ETN	data used to calculate the ER	$EGt_{ogrid,y}$ minus $EG_{fromgrid,y}$
	A	B	C=MIN(A,B)	D	E	F=MAX(D,E)	G=C-F
2022.01.01-2022.01.31	10,032.825	9,943.000	9,943.000	125.950	126.500	126.500	9,816.500
2022.02.01-2022.02.28	16,619.625	16,600.144	16,600.144	16.775	16.500	16.775	16,583.369
2022.03.01-2022.03.31	18,562.500	18,532.030	18,532.030	34.100	33.000	34.100	18,497.930
2022.04.01-2022.04.30	14,656.675	14,631.518	14,631.518	38.775	38.500	38.775	14,592.743
2022.05.01-2022.05.31	17,650.875	17,626.953	17,626.953	39.050	38.500	39.050	17,587.903
2022.06.01-2022.06.30	13,538.525	13,509.794	13,509.794	61.325	63.250	63.250	13,446.544
2022.07.01-2022.07.31	12,046.375	12,011.345	12,011.345	79.200	79.750	79.750	11,931.595
2022.08.01-2022.08.31	12,327.975	12,295.156	12,295.156	56.650	55.000	56.650	12,238.506
2022.09.01-2022.09.30	10,849.575	10,820.247	10,820.247	36.025	35.750	36.025	10,784.222
2022.10.01-2022.10.31	14,655.575	14,573.039	14,573.039	33.825	35.750	35.750	14,537.289
2022.11.01-2022.11.30	18,822.650	18,769.737	18,769.737	69.025	68.750	69.025	18,700.712
2022.12.01-2022.12.31	24,234.100	24,201.153	24,201.153	11.550	11.000	11.550	24,189.603
2022 Subtotal			**183,514.116**			**607.200**	**182,906.916**
2023.01.01-2023.01.31	21,968.925	21,931.770	21,931.770	8.250	8.250	8.250	21,923.520
2023.02.01-2023.02.28	12,355.475	12,311.209	12,311.209	80.025	79.750	80.025	12,231.184
2023.03.01-2023.03.31	17,198.500	17,154.398	17,154.398	61.325	60.500	61.325	17,093.073
2023.04.01-2023.04.30	16,337.750	16,289.372	16,289.372	37.950	38.500	38.500	16,250.872
2023 Subtotal			**67,686.749**			**188.100**	**67,498.649**
Total			**251,200.865**			**795.300**	**250,405.565**

APPENDIX 3: < SDG EVIDENCE >

Evidence for SDG 7 and SDG 13: From project operation date onwards, the net electricity supplied to the grid and corresponding emission reduction in every monitoring period have been listed in below table. Please refer to following links for details.

https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1272607295.17/view

https://registry.verra.org/app/projectDetail/VCS/727

Net electricity supply to the grid and the corresponding ERRs during each monitoring period

Period	$EG_{facility,y}$ MWh	ERR tCO_2e
01 Aug 2010 - 27 Oct 2010	13,984.968	14,752
28 Oct 2010 - 28 Feb 2011	119,650.068	126,212
01 Mar 2011 - 29 Feb 2012	235,198.700	248,099
01 Mar 2012 - 31 Dec 2012	150,175.575	158,412
01 Jan 2013 - 31 Dec 2013	171,765.275	181,186
01 Jan 2014 - 31 Dec 2014	187,931.700	198,239
01 Jan 2015 - 31 Aug 2015	127,497.700	134,490
01 Sep 2015 – 27 Oct 2017	454,140.555	479,049
28 Oct 2017 - 30 Nov 2019	487,019.115	513,731
01 Dec 2019 - 31 Dec 2021	537,317.025	488,016
01 Jan 2022 - 30 Apr 2023	250,405.565	210,457
Total	2,735,086.246	2,752,643

SDG 8 Evidence: Staff roster

绿脑包风电场聘用的当地员工的信息表

姓名	性别	长期或者临时
薛烨皎	男	长期
杨宏	男	长期
赵凌风	男	长期
左学宝	男	长期
崔凯	男	长期
高坚	男	长期
刘建利	女	劳务
于万英	男	劳务

绿脑包风电场

2023 年 10 月 30 日