



GANSU GUAZHOU DALIANGXI WIND POWER PROJECT



Document Prepared By LGAI Technological Center, S.A. (Applus+ Certification)

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Prepared By	LGA Technological Center, S.A. (Applus+ Certification)
Contact	Campus UAB – Ronda de la Font del Carme, s/n 08193 Bellaterra – Barcelona (Spain)

	Tel.:+34 93 567 20 08 Fax.:+34 93 567 20 01 <i>www.appluscertification.com</i> <i>agustin.calle@applus.com</i> <i>carla.debat@applus.com</i>
Approved By	LGA Technological Center S.A. (Applus+ Certification) CDM Technical Manager: Agustín Calle de Miguel
Work Carried Out By	Lead Auditor / Technical Expert: Simon SHEN Technical Reviewer: Denny XUE

Summary:

LGA Technological Center, S.A. (hereafter referred to as “Applus+ Certification”) has been commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Guazhou Daliangxi Wind Power Project” (VCS Ref. No. 544, hereafter referred to as “the project activity”) reported in the monitoring report /1/ during monitoring period 01/01/2019 - 31/12/2021 .

This monitoring period is the 1st monitoring period of 2nd crediting period under VCS scheme. The renewal of the crediting period of the project activity has been validated by CTI based on the VCS PD /3/ version 02 dated 24/09/2020 and reported in the validation report No. CTI/NB-2020-0924 /4/, version 01.0, completed on 25/09/2020. The RCP validation is available at <https://registry.terra.org/app/projectDetail/VCS/544>. The VCS PD /3/ would be the basis for this verification. The project activity was registered as a CDM project activity on 04/05/2010 with UNFCCC reference No. 2916 and renewed on 21/03/2019 which is available at <https://cdm.unfccc.int/Projects/DB/BVQI1250066972.19/view?cp=1>.

The project activity is a wind power project located at Guazhou County, Jiuquan City, Gansu Province, P. R. China which is to use wind resource for electricity generation. The installed capacity of the project activity is 49.5 MW, consisting of 33 sets of wind turbines with unit capacity of 1.5 MW. The average annual power delivered to the grid by the project is expected to be 115,144 MWh. The project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in Northwest Power Grid (NWP). It's estimated that the proposed project could achieve GHG emission reductions of 88,361 tCO₂e annually during the 2nd crediting period.

The purpose and scope of this verification is to ensure that reported emission reductions are complete and accurate in accordance with applicable VCS standards and relevant UNFCCC requirements in order to be certified. A desk review and a site visit have been conducted to verify the data submitted in the monitoring report /1/. Applus+ Certification confirms the following has been reviewed:

- Monitoring plan included in the registered renewed VCS PD /3/ version 02 dated 24/09/2020;
- Validation report of renewal of crediting period /4/, report No. CTI/NB-2020-0924 version 01.0, completed on 25/09/2020 by CTI;

- Approved methodology, ACM0002 /7/, version 20.0;
- VCS standards version 4.2 and guidance version 4.1, as well as relevant UNFCCC requirements;
- All information and references relevant to the project activity's resulting in emission reductions.

During this verification, 2 clarification requests were identified and closed out related to the monitoring, implementation or operations of the project activity in relation to relevant VCS standards, guidance and UNFCCC requirements and relevant host party criteria and the applied baseline and monitoring methodology etc.

Applus+ Certification confirms that the project is implemented in accordance with the registered VCS PD /3/. The monitoring plan complies with the applied methodology ACM0002 /7/ version 20.0 and the monitoring has been carried out in accordance with the registered PD. The monitoring system is in place and the emission reductions are calculated without material misstatements. The level of assurance of the verification is reasonable. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 206,270 tCO₂e emission reductions during period 01/01/2019 - 31/12/2021.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (Applus+ Certification) has been commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Guazhou Daliangxi Wind Power Project” (VCS Ref. No. 544) reported in the Monitoring Report /1/ during monitoring period 01/01/2019 - 31/12/2021 .

LGAI Technological Center, S.A. (Applus+ Certification) as the verification body of the project activity has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2013.

The objective of verification is to have an independent review and ex post determination by a Validation and Verification Body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registration of VCS project. Certification is the written assurance by the VVB that, during a specific time period, a proposed VCS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification is to verify and certify emission reductions, reported for the “Gansu Guazhou Daliangxi Wind Power Project” in China for the period 01/01/2019 - 31/12/2021 .

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PD and PDD, the Project’s baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.2 requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the Project monitoring towards reductions in the GHG emissions.

1.3 Level of Assurance

The verification report is based on the VCS-PD, the VCS Monitoring Report (MR), supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment.

The verification conclusion is assured a reasonable level of assurance.

1.4 Summary Description of the Project

Project title	Gansu Guazhou Daliangxi Wind Power Project
VCS reference number	544
Project Participants	Gansu CGN Wind Power Co., Ltd. (Project Owner, host country, P. R. China)
Location of the project	Guazhou County, Jiuquan City, Gansu Province, P. R. China Central geographic coordinates: E 95°36'37" Longitude, N 40°42'55" Latitude
Project start date	Construction start date: 31/05/2008 Operation start date: 04/12/2008
Version of VCS PD	version 02.0 dated 24/09/2020
Monitoring period	01/01/2019 - 31/12/2021
First monitoring report	Version 01, dated 18/03/2022
Final monitoring report	Version 1. 1, dated 06/06/2022
Applied Methodology/Version	ACM0002, version 20.0
Scope/Technical Area	1/1.2

The project activity is a wind power project located at Guazhou County, Jiuquan City, Gansu Province, P. R. China which is to use wind resource for electricity generation. The installed capacity of the project activity is 49.5 MW, consisting of 33 sets of wind turbines with unit capacity of 1.5 MW. The average annual power delivered to the grid by the project is expected to be 115,144 MWh. The project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in Northwest Power Grid (NWPG). It's estimated that the proposed project could achieve GHG emission reductions of 88,361 tCO₂e annually during the 2nd crediting period.

This monitoring period is the 1st monitoring period of 2nd crediting period under VCS scheme. The renewal of the crediting period of the project activity has been validated by CTI based on the VCS PD /3/ version 02 dated 24/09/2020 and reported in the validation report No. CTI/NB-2020-0924 /4/, version 01.0, completed on 25/09/2020. The project activity was registered as

a CDM project activity on 04/05/2010 and renewed on 21/03/2019 which is available at <https://cdm.unfccc.int/Projects/DB/BVQI1250066972.19/view?cp=1>.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS Standard version 4.2, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant UNFCCC requirements and applying standard auditing techniques.

Applus+ Certification completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report /1/ for the period in question. This involved a site visit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

The information of the assessment team is included in below:

Assessment team

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in Applus+ Certification. The composition of assessment team has to be approved by the Applus+ Certification ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules as below:

- Leader Auditor (LA)
- Auditor (A)/ Auditor Trainee (AiT)

- Technical Reviewer (TR)
- Technical Experts (TE)

Name	Qualification	Coverage of scope	Coverage of Technical Area	Host country experience
<i>Simon Shen</i>	<i>LA/TE</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>
<i>Denny Xue</i>	<i>TR</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>

Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years.

Denny Xue (Master's Degree in Environmental Engineering, Bachelor's Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+. Before he joined Applus+ LGAI, he has been working for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

2.2 Document Review

The VCS monitoring report /1/ version 01 dated 18/03/2022, version 1. 1 dated 06/06/2022 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, the VCS PD /3/ version 02 dated 24/09/2020 in particular the baseline estimations and the monitoring plan, the VCS Validation Report of renewal of crediting period /4/ dated 25/09/2020, as well as relevant documents, were reviewed. A detailed document reviewed are listed in Appendix 1 of the report.

2.3 Interviews

The key personnel interviewed are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Yang Bin Mr. Ma Jianxiong	Chief Director Engineer	Gansu CGN Wind Power Co., Ltd.	Operation of the project activity; Implementation of the monitor plan of the project activity; Data collection and data achievement;
Ms. Tan Shishi	Project Manager	CGN Carbon Asset Management (Beijing) Co., Ltd	Calibration of meters and equipment maintenance. Data collection and ER calculation.

2.4 Site Inspections

The assessment team performed the on-site verification (Guazhou County, Jiuquan City, Gansu Province, P. R. China) on 17/05/2022. The interviewed personnel and objective are listed in above table.

2.5 Resolution of Findings

As an outcome of the verification process, the team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the project activity has not been sufficiently documented by the project participants;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

There is no CARs and CLs raised for this monitoring period for the project.

2.5.1 Forward Action Requests

None FAR was raised during the verification process. Also there are no remaining from former validation.

2.6 Eligibility for Validation Activities

Not applicable as LGAI Technological Center, S.A. holds the accreditation for the validation and verification for projects under scope 1.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project activity is registered as CDM project activity under the UNFCCC on 04/05/2010 with the Registration Ref. No. 2916. The CDM crediting period of the project starts on 04/05/2010 with a renewable crediting period of 3*7 years. By checking the registered VCS PD and site visit interview with project owner, it is confirmed that the project started operation on 04/12/2008 which is the project start date according to the requirement of VCS. A deviation has been identified for the crediting period of the Project. The project is registered before 19/03/2020. As per VCS requirement, 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. Therefore, the first renewable crediting period of the Project is updated from 01/01/2009– 03/05/2010 to 01/01/2009-31/12/2018, which lasts for 10 years. The project crediting period has been renewed to 01/01/2019 – 31/12/2028 which has been verified by the VCS Validation Report of renewal of crediting period /4/ dated 25/09/2020.

The emission reductions from 01/01/2009–03/05/2010 prior to the CDM crediting period have been claimed as Voluntary Carbon Units (VCU) under the Voluntary Carbon Standard (VCS 2007.1).

The 1st CDM crediting period is from 04/05/2010-03/05/2017 and the 2nd CDM crediting period is renewed from 04/05/2017-03/05/2024. By checking the UNFCCC website (<https://cdm.unfccc.int/Projects/DB/BVQI1250066972.19/view?cp=1>), it is confirmed total 249,656 tCO₂e CERs were issued for the monitoring periods 04/05/2010-29/03/2011, 30/03/2011- 29/03/2012, 30/03/2012-28/09/2012.

By checking VCS website, total 429,582 tCO₂e VERs have been issued for the monitoring period 29/09/2012-28/09/2018. In addition, GHG emission reductions of 17,044 tCO₂e of VCUs for the monitoring period from 29/09/2018 to 31/12/2018 are under issuance process.

Period	emission reductions(tCO ₂ e)	Scheme
01/01/2009–03/05/2010	141,633	VCS
04/05/2010 to 29/03/2011	101,809	CDM
30/03/2011 to 29/03/2012	92,556	CDM
30/03/2012 to 28/09/2012	55,291	CDM

29/09/2012 to 28/09/2018	429,582	VCS
29/09/2018 to 31/12/2018	17,044	Under issuance by VCS
Total	937,915	

The Project Activity does not participate in the other emissions trading program by checking public information on Internet, interviewing with project owner and statement issued by project owner.

During the period from 01/01/2019 - 31/12/2021, the project would claim only for VCU's or CERs. But VCU's and CERs will not be claimed in the same period.

Therefore, Applus+ Certification consider the project is eligible to participate under the VCS Program as there is no double counting for the emission reduction during any period.

3.2 Methodology Deviations

Not applicable as no deviation for methodology.

3.3 Project Description Deviations

A deviation of the crediting period of the project activity has been verified during the verification of the previous monitoring period. The project started operation on 04/12/2008 which is the project start date according to the requirement of VCS. The project is registered before 19/03/2020. As per VCS requirement, 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. Therefore, the first renewable crediting period of the Project is updated from 01/01/2009- 03/05/2010 to 01/01/2009-31/12/2018, which lasts for 10 years. The project crediting period has been renewed to 01/01/2019 - 31/12/2028 which has been verified by the VCS Validation Report of renewal of crediting period /4/ dated 25/09/2020. This monitoring period 01/01/2019 - 31/12/2021 falls under the 2nd crediting period.

Except the crediting period deviation, there were no other project description deviations identified by Applus+ Certification to this monitoring period. The verification team assessed through visual inspection and document review that all physical features of the proposed project activity including data monitoring, reporting and collecting systems have been implemented in accordance with the registered VCS PD. Applus+ Certification confirms that the project is fully implemented in accordance with the project description and monitoring plan contained in registered VCS PD (version 02 dated 24/09/2020), and no other deviations for the project description during this monitoring period. Details refer to section 4.1.

3.4 Grouped Project

Not applicable as not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

By means of on-site visit, the assessment team confirms that all physical features of the proposed CDM project activity proposed in the registered VCS PD /3/ are in place and the PP has operated the project as per registered VCS PD /3/. The installed capacity of the project is 49.5 MW, consisting of 33 sets of wind turbines with unit capacity of 1.5 MW. The electricity generated is transmitted to the local Power Grid via a newly built transformer station, which was then exported to the NWPG. The project activity was expected to supply 115,144 MWh of electricity to the grid. The construction of the project started on 31/05/2008, the wind turbine of the project has been put into operation on 04/12/2008 and the project has put into full operation since 14/01/2009. The actual implementation of the project during this verification period was verified in terms of name plates of turbines and generators /9/. The details of the turbines and generators with respect to their installation and capacity have been verified to be consistent with description indicated in the registered VCS PD. There are no changes on the key equipment and technology since the validation of the project. No special event which would affect the monitoring of the project has been observed during the monitoring period.

The electricity generated by the project activity is supplied to the NWCPG. All the monitoring system in operation period is consistent with the description in the registered VCS PD. The control system at the power plant is automated and assures continuous operation, including monitoring on malfunction of equipment. By checking the monitoring records /10/, Applus+ Certification can confirm that no serious malfunction happened and the plant was under a normal operation as expected in this monitoring period.

Applus+ Certification confirms that the project was implemented in accordance with the project description contained in registered VCS PD. Furthermore, through visual inspection and document review, it is confirmed that all physical features of the project activity including data collection systems and storage systems have been implemented in accordance with the registered VCS PD.

The project would contribute to sustainable development in as below:

- (1) By replacing electricity from fossil fuel power plants with renewable electricity, this project could reduce greenhouse gas emissions compared to the business-as-usual scenario;
- (2) Help to stimulate the growth of the wind power industry in China and promotion of advanced wind turbine manufacturing industry;
- (3) Create local employment opportunities during the construction and operation of the Project;
- (4) Stimulate the development of local tourism industry.

The technical parameters have been verified with the nameplates /9 / as below:

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

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

Therefore, the assessment team confirmed the ER in this monitoring period is not overestimated.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period.

All required equipments and procedures are available and implemented in an appropriate manner.

All necessary monitoring instruments are installed. All required instruments including standby and operating procedures for the same have been implemented in an appropriate manner.

The project is completely operational and the same has been confirmed on-site. Neither mistakes nor malfunction on main meters have been observed during this monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

By checking the EIA summary and conclusion provided in the registered PD, it is confirmed that wind power is green power and the impact caused by wind power on the surrounding ecosystem and residents, water, and atmosphere etc. is very little, there would be no net harm caused due to the project activity. Also, the EIA of the project are approved by the government.

Also, no potential environment or social economic matter was found during the site visit. The project is renewable energy project and thus no net harm observed in air or water quality on-site.

4.2.2 Local Stakeholder Consultation

As per the registered CDM PDD, the local stakeholder's consultation was done in May 2008 through distributing questionnaires, which was designed to be easily filled in. 29 copies of questionnaire were distributed, and 28 out of 29 questionnaires received replies. The opinions expressed by the stakeholders were recorded and are available on request. The survey showed that the proposed project receives strong support from the local community. They all believe the proposed project will promote local economic development and agree with the project development and construction.

All such conclusion has been verified through site visit and check registered VCS PD.

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

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

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

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

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

All such conclusion has been verified through site visit and check with interviewees.

4.3 AFOLU-Specific Safeguards

Not applicable as non-AFOLU project.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The monitoring has been carried out in accordance with the monitoring plan contained in the

VCS PD /3/. All parameters were monitored and determined as per the monitoring plan which is listed in below table:

Data / Parameter:	EG _y		
Data unit:	MWh		
Description:	Net electricity supplied to the grid by the project.		
Purpose of the data:	Calculation of baseline emissions		
Parameter value:		Year	Value
		Year 2019	94352.544
		Year 2020	94191.438
		Year 2021	80247.816
		Total	268791.798
Source of data used:	Measured by the main meter installed at the output of the project site. EG_y is calculated by the electricity exported to the grid (EG_{export}) minus the electricity imported from the grid (EG_{import}). $EG_y = EG_{export} - EG_{import}$		
Information flow:	The electricity exported to the grid and imported from the grid by the project is continuously measured by the two bidirectional meters (one as main meter and one as backup meter) located at the output of the project site. The accuracy of the meters is 0.2S. The monthly cut-off time for electricity exported to the grid and imported from the grid by the project is at 00:00 on the penultimate day in every month. The manual records of the main meter are based on continuously measurement and monthly recorded by the Project Developer. Monthly electricity exported to the grid and imported from the grid by the project is approved and signed off by the Manager before it is accepted and stored. The meter readings are also monitored and recorded on hourly basis and aggregated on monthly basis by the grid company. Electricity sales receipts of electricity exported to the grid and imported from the grid by the project are issued after the confirmation from the Grid Company and Project Developer. The net electricity supplied to grid by the project is calculated by the electricity exported to the grid minus the electricity imported from the grid. The project developer will archive the data electronically until two years after the end of the crediting period, whichever occurs later.		

Monitoring method, frequency and equipments:	Continuously measured, and monthly recorded.																																																																
Calibration:	The calibrations of two meters are carried out annually by Power Measurement Center of Gansu Province Power Company. The Power Measurement Center is the qualified authority for the meters calibration accredited by Gansu Province Quality and Technology Supervision Bureau. <table><tr><td colspan="2">Main meter installed at the output of the project site</td></tr><tr><td>Type</td><td>SL7000</td></tr><tr><td>Accuracy class</td><td>0.2S</td></tr><tr><td>Serial Number</td><td>36032119</td></tr><tr><td>Calibration frequency</td><td>Annually</td></tr></table> <table><tr><td colspan="2">Backup meter installed at the output of the project site</td></tr><tr><td>Type</td><td>SL7000</td></tr><tr><td>Accuracy class</td><td>0.2S</td></tr><tr><td>Serial Number</td><td>36056210</td></tr><tr><td>Calibration frequency</td><td>Annually</td></tr></table> The meters above were replaced on 16/04/2020, and the detailed information of newly replaced meters is shown as follow: <table><tr><td colspan="2">Main meter installed at the output of the project site</td></tr><tr><td>Type</td><td>MK6E</td></tr><tr><td>Accuracy class</td><td>0.2S</td></tr><tr><td>Serial Number</td><td>0123716200</td></tr><tr><td>Calibration frequency</td><td>Annually</td></tr></table> <table><tr><td colspan="2">Backup meter installed at the output of the project site</td></tr><tr><td>Type</td><td>MK6E</td></tr><tr><td>Accuracy class</td><td>0.2S</td></tr><tr><td>Serial Number</td><td>0123716172</td></tr><tr><td>Calibration frequency</td><td>Annually</td></tr></table> Calibration information of meters is listed as below: <table><tr><th>Meters</th><th>Accuacy Class</th><th>Serial Number</th><th>Calibration Frequency</th><th>Date of Calibration</th><th>Validity</th></tr><tr><td rowspan="5">Main meter</td><td rowspan="5">0.2S</td><td rowspan="3">36032119</td><td rowspan="5">Annually</td><td>08/01/2018</td><td>07/01/2019</td></tr><tr><td>06/01/2019</td><td>05/01/2020</td></tr><tr><td>20/06/2019</td><td>19/06/2020</td></tr><tr><td colspan="2">0123716200</td><td>11/12/2019</td><td>10/12/2020</td></tr><tr><td colspan="2"></td><td>10/11/2020</td><td>09/11/2021</td></tr></table>	Main meter installed at the output of the project site		Type	SL7000	Accuracy class	0.2S	Serial Number	36032119	Calibration frequency	Annually	Backup meter installed at the output of the project site		Type	SL7000	Accuracy class	0.2S	Serial Number	36056210	Calibration frequency	Annually	Main meter installed at the output of the project site		Type	MK6E	Accuracy class	0.2S	Serial Number	0123716200	Calibration frequency	Annually	Backup meter installed at the output of the project site		Type	MK6E	Accuracy class	0.2S	Serial Number	0123716172	Calibration frequency	Annually	Meters	Accuacy Class	Serial Number	Calibration Frequency	Date of Calibration	Validity	Main meter	0.2S	36032119	Annually	08/01/2018	07/01/2019	06/01/2019	05/01/2020	20/06/2019	19/06/2020	0123716200		11/12/2019	10/12/2020			10/11/2020	09/11/2021
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				10/11/2020	09/11/2021																																																												

				20/10/2021	19/10/2022
	Backup meter		36056210	08/01/2018	07/01/2019
			0123716172	06/01/2019	05/01/2020
				20/06/2019	19/06/2020
				12/12/2019	11/12/2020
				10/11/2020	09/11/2021
				20/10/2021	19/10/2022
	Calibration records and accreditation certificates/12/ have been verified by the verification team. The accuracy of main meter and backup meter is verified to comply with the requirement in the registered VCS PD and in compliance with the Technical administrative code of electric energy metering (DL/T448-2016)/19/. The calibration frequency of meters is annual, which is consistent with the registered VCS PD. Based on the site visit and by checking the calibration reports, the assessment team found the calibration frequency of these meters is annual, which is in line with the registered CDM, Applus+ Certification confirms that: - Both meters have been installed in accordance with the monitoring plan; - The meters' accuracy is in line with the requirement of the monitoring plan; - The calibration frequency of the meters is annual, which is in line with the monitoring plan. And the calibrations are verified to be valid for the whole reporting period.				
QA/QC procedure:	Data measured by the meters is cross checked using electricity sales receipts. The accuracy of the measurement is ensured through calibration by a qualified party. Data record will be archived for a period of 2 years after the crediting period to which the records pertain.				

Parameters available at validation stage:

Below data has been verified against the data sources and the PDD.

Parameter title	Description	Data	Source
EF _{grid,CM,y} *	Baseline emission factor of NWPG in the monitoring period.	0.7674	Notification on 2017 baseline emission factors for regional power grids in China, issued by China /14/.

* EF_{grid,CM,y} is not directly available in the registered PDD but calculated based on the ex-ante data fixed in the registered PDD.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The monitoring has been carried out in accordance with registered VCS PD /3/ version 02 dated 24/09/2020.

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the MR Report and ER Calculation Spreadsheet /2/ and are consistent with the applied methodology ACM0002 version 20.0 and the monitoring plan. The parameters are complete in this monitoring period.

Applus+ Certification confirms that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and the assumptions, emission factors and default values that are applied in the calculation have been justified.

According to the applied methodology, the emission reductions are determined as the difference between the baseline emissions (BE_y), project emissions (PE_y) and leakage (LE_y):

$$ER_y = BE_y - PE_y - LE_y$$

Baseline emissions:

Baseline emissions are determined as multiplying quantity of net electricity generation supplied by the project to the grid in year y (EG_y) by the validated ex-ante fixed grid emission factor ($EF_{grid,CM,y}$).

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

$EF_{grid,CM,y}$ is the grid emission factor of the which has been verified ex-ante in the validation stage in the registered VCS PD as 0.7674 tCO_{2e}/MWh.

Net electricity supplied to the grid by the project (EG_y)

EG_y is determined as follows: $EG_y = EG_{export} - EG_{import}$

Data in the monthly reading records were used to report. Through a cross check with the Electricity Sales Receipts, the most conservative values have been applied to calculate the electricity exported to and imported from the grid by the project.

Project emissions:

As statement in ACM0002 (version 20.0), for the wind power activities, the project emissions from the project are not considered. Hence, PE_y during the monitoring period from 01/01/2019 - 31/12/2021 is considered as zero.

Leakages:

Leakage does not need to be accounted for this project as per the applied methodology.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the ER Calculation Spreadsheet and the MR Report. The verification process for the same has been clearly described above in section 4.4 of the report.

The management procedure has been verified by the assessment team. Gansu CGN Wind Power Co., Ltd. is responsible for operation and routine maintenance of power plant under the project activity. The quality assurance and quality control procedures have been addressed in the CDM project management procedure /8/, including the organization structure with the responsibilities, personnel competencies, monitoring procedures and monitoring management. By interview with the staff and check records /9/ during on-site visit, it can be confirmed that the monitoring management system is implemented following the project management procedure.

4.6 Non-Permanence Risk Analysis

Not applicable as a renewable project.

5 VERIFICATION CONCLUSION

Applus+ Certification has been commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Guazhou Daliangxi Wind Power Project” (VCS Ref. No. 544).

The management of Gansu CGN Wind Power Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the registered VCS PD /3/ dated 24/09/2020.

Our verification approach was based on the requirements as defined under the applicable VCS standards and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered VCS PD;
- the monitoring plan in the registered VCS PD is as per the applied methodology;
- the monitoring complies with the registered VCS PD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “Gansu Guazhou Daliangxi Wind Power Project” during the monitoring period 01/01/2019 - 31/12/2021 as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated. Based on the information we have seen and evaluated, we confirm the following statement:

Verification period: From 01/01/2019 - 31/12/2021. Verified GHG emission reductions or removals in the above reporting period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2019 01/01/2019 - 31/12/2019	72,406	0	0	72,406
Year 2020 01/01/2020 - 31/12/2020	72,282	0	0	72,282
Year 2021 01/01/2021 - 31/12/2021	61,582	0	0	61,582
Total	206,270	0	0	206,270

APPENDIX 1: REFERENCE LIST

1. Monitoring report, version 01, dated 18/03/2022; version 1.1, dated 06/06/2022
2. ER calculation spreadsheet
3. Registered CDM PDD, version 5.0, dated 27/04/2010;
Registered VCS PD, dated 24/09/2020
4. Validation report of renewal of crediting period /4/, report No. CTI/NB-2020-0924 version 01.0, completed on 25/09/2020 by CTI
5. VCS standard version 4.2, dated on 20/01/2022
6. Statement issued by project owner
7. Approved methodology ACM0002, version 20.0
8. CDM Monitoring procedure
9. Nameplate of the equipment
10. Meter Reading Record (MRRs) for Meters
11. Electricity Transaction Notes covering the monitoring period
12. Calibration certificates of meters covering the whole monitoring period issued by Electric Energy Measurement Centre of Gansu Electric Power Corporation
13. Accreditation certificates for Electric Energy Measurement Centre of Gansu Electric Power Corporation issued by Quality and Technical Supervision Bureau of Gansu Province
14. Notification on 2017 baseline emission factors for regional power grids in China issued by China DNA

APPENDIX 2: FINDINGS

Table 1. Remaining FAR from validation and/or previous verifications

FAR ID	n/a	Section no.	n/a	Date:
Description of FAR				
n/a				
Project participant response				Date:
n/a				
Documentation provided by project participant				
n/a				
VWB assessment				Date:
n/a				

Table 2. CL from this verification

CL ID	1	Section no.	2.2	Date: 23/05/2022
Description of CL				
In section 2.2 of MR, it is described that the contact person visited the villages in Sep 2012, Aug 2013, May 2014, May 2015, Jun 2016, Jun 2017 and Jun 2018 to communicate with stakeholders during the monitoring period. The described time is not within the monitoring period. Please update the information.				
Project participant response				Date: 06/06/2022
The information during this monitoring period has been inserted into the report.				
Documentation provided by project participant				
Revised Monitoring Report				
VWB assessment				Date: 08/06/2022
The assessment team confirmed that the stakeholder consulting process during the monitoring period has been included in the revised Monitoring period. Thus the CL is closed out.				

CL ID	2	Section no.	4.1	Date: 23/05/2022
Description of CL				
Please include the calibration information (calibration date and validity) of the meters in the MR.				
Project participant response				Date: 06/06/2022
Detailed calibration information has been inserted into the report.				
Documentation provided by project participant				
Revised Monitoring Report				
VVB assessment				Date: 08/06/2022
The assessment team confirmed that the information of the calibration date and validity has been included in the monitoring report. The same information has been verified against the calibration records. Therefore the CL is closed out.				

Table 3. CAR from this verification

CAR ID	n/a	Section no.	n/a	Date: 15/04/2022
Description of CAR				
n/a				
Project participant response				Date:
n/a				
Documentation provided by project participant				
n/a				
VVB assessment				Date:
n/a				