GUYUAN WUHUAPING 49.5 MW WIND POWER PROJECT

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

Project Title	*Guyuan Wuhuaping 49.5 MW Wind Power Project*
Version	*01.1*
Report ID	*A+SH_SYST_VCS_VER_7322*

Report Title	*Guyuan Wuhuaping 49.5 MW Wind Power Project*
Client	*Beijing Ruifang Information Technology Co., Ltd*
Pages	*29*
Date of Issue	*02/01/2024*
Prepared By	*LGAI 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* *www.appluscertification.com* *agustin.calle@applus.com* *carla.debat@applus.com*
Approved By	*LGAI Technological Center S.A. (Applus+ Certification) CDM Technical Manager: Agustín Calle de Miguel*
Work Carried Out By	*Lead Auditor / Technical Expert: Doris Dai* *Technical Reviewer: Simon Shen*

Summary:

LGAI Technological Center, S.A. (hereafter referred to as "Applus+ Certification") has been commissioned by Beijing Ruifang Information Technology Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity "Guyuan Wuhuaping 49.5 MW Wind Power Project" (VCS Ref. No. 736, hereafter referred to as "the project activity") reported in the monitoring report /1/ during monitoring period 01/12/2021 to 31/05/2023.

The project activity has been validated by BV based on the CDM PDD /3/ version 03 dated 17/12/2009 and reported in the validation report No. BVC/CHINA-VAL/0192/2009 /4/, version 01, completed on 04/02/2010. The project activity was registered as a CDM project activity on 03/07/2010 which is available at https://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view. A gap validation was performed by SGS during the VCS verification and the project has been successfully renewed by Applus+ Certification which is available at https://registry.verra.org/app/projectDetail/VCS/736. The registered VCS PD /3/ version 2.0 dated 09/05/2020 would be the basis for verification.

The project activity is a wind power project located at Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P. R. China, of which the main purpose 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 1,500 kW. The average annual power delivered to the grid by the project is expected to be 117,322.7152 MWh. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants of North China Grid (NCPG). It's estimated that the project could achieve GHG emission reductions of 98,603 tCO_2e annually in the 2nd renewable 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 VCS PD /3/ version 2.0 dated 09/05/2020;
- Validation report No. A+SH_SYST_VCS_RCP_1320 /4/ version 01.0, dated 10/05/2020;

- ACM0002: Consolidated methodology for grid-connected electricity generation from renewable sources, version 20.0 /7/
- VCS standards version 4.4 and guidance version 4.3, as well as relevant UNFCCC requirements;
- All information and references relevant to the project activity's resulting in emission reductions.

During this verification, no finding was identified 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 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 154,359 tCO_2e emission reductions during period 01/12/2021 to 31/05/2023.

CONTENTS

1 Introduction 5
1.1 Objective 5
1.2 Scope and Criteria 5
1.3 Level of Assurance 5
1.4 Summary Description of the Project 6

2 Verification Process 8
2.1 Method and Criteria 8
2.2 Document Review 9
2.3 Interviews 9
2.4 Site Visits 10
2.5 Resolution of Findings 10
2.5.1 Forward Action Requests 11
2.6 Eligibility for Validation Activities 11

3 Validation Findings 12
3.1 Participation under Other GHG Programs 12
3.2 Methodology Deviations 12
3.3 Project Description Deviations 12
3.4 Grouped Project 13

4 Verification Findings 14
4.1 Project Implementation Status 14
4.2 Safeguards 17
4.2.1 No Net Harm 17
4.2.2 Local Stakeholder Consultation 17
4.3 AFOLU-Specific Safeguards 18
4.4 Accuracy of GHG Emission Reduction and Removal Calculations 18
4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals 25
4.6 Non-Permanence Risk Analysis 25

5 Verification OPINION 26

APPENDIX 1: REFERENCE LIST 28

1 INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. (Applus+ Certification) has been commissioned by Beijing Ruifang Information Technology Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity "Guyuan Wuhuaping 49.5 MW Wind Power Project" (VCS Ref. No. 736) reported in the Monitoring Report /1/ during monitoring period 01/12/2021 to 31/05/2023.

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 14065:2020.

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 "Guyuan Wuhuaping 49.5 MW Wind Power Project" in China for the period 01/12/2021 to 31/05/2023.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PD, the Project's baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.4 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, 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	Guyuan Wuhuaping 49.5 MW Wind Power Project
VCS reference number	736
Project Participants	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. (Project Owner, host country, P. R. China) Demeter Venture Uk Limited (VER Buyer, United Kingdom)
Location of the project	Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P. R. China. Geographic coordinates: Longitude: 115°45′08″ E Latitude of 41°36′36″ N
Project start date	Construction start date: 10/05/2009 Operation start date: 30/10/2009
Version of PD	VCS PD Version 2.0, dated 09/05/2020
Monitoring period	01/12/2021 to 31/05/2023
First monitoring report	Version 1.0, dated 30/06/2023
Final monitoring report	Version 3.0, dated 29/12/2023
Applied Methodology/Version	ACM0002, version 20.0
Scope/Technical Area	1/1.2 Scope 01: energy industries (renewable-/non-renewable sources)

The project activity is a wind power project located at Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P. R. China, of which the main purpose 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 1,500 kW. The average annual power delivered to the grid by the project is expected to be 117,322.7152 MWh. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants of North China Grid (NCPG). It's estimated that the project could achieve GHG emission reductions of 98,603 tCO_2e annually in the 2nd renewable crediting period.

The project activity has been validated by BV based on the CDM PDD /3/ version 03 dated 17/12/2009 and reported in the validation report No. BVC/CHINA-VAL/0192/2009 /4/, version 01, completed on 04/02/2010. The project activity was registered as a CDM project activity on 03/07/2010 which is available at https://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view. A gap validation was performed by SGS during the VCS verification and the project has been successfully renewed by Applus+ Certification which is available at https://registry.verra.org/app/projectDetail/VCS/736.

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 4.4, 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
Doris Dai	LA/TE	Y (1.2)	Y	Y
Simon Shen	TR	Y (1.2)	Y	Y

Doris Dai (Master's Degree in Environmental Sciences, Bachelor's Degree in Environmental Technology) is an Auditor appointed by Applus+ LGAI for the GHG project assessment and auditing. She has more than 6 years of work experience in CDM/VCS project assessment. Before she joined Applus+ LGAI, she has been working for CTI Certification as senior GHG Auditor for 3.5 years.

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.

2.2 Document Review

The VCS monitoring report /1/ version 1.0 dated 30/06/2023, version 3.0 dated 29/12/2023 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, the VCS PD /3/ version 2.0 dated 09/05/2020 in particular the baseline estimations and the monitoring plan, the VCS Validation Report /4/ dated 10/05/2020, as well as relevant documents, were reviewed. A detailed document reviewed are listed in Appendix 1 of the report.

2.3 Interviews

A physical site visit interview was made by the assessment team on 09/08/2023, The key personnel interviewed through the site visit are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Lv Bingnan	Operation Director	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.	Operation of the project activity; Implementation of the monitoring plan of the project activity; Data collection and data achievement; Calibration of meters and equipment maintenance.
Mr. Song Dong	Operator	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.	
Mr. Wang Peng	Operator	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.	
Mr. Jin Yufei	Villager	Pingdingbu Town	
Mr. Li Xiali	Villager	Pingdingbu Town	
Ms. Zhang Ling	Project Manager	Beijing Ruifang Information Technology Co., Ltd	Data collection and ER calculation.

2.4 Site Visits

The assessment team performed the on-site verification (Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P. R. China) on 09/08/2023. The interviewed personnel including the role and organization and objective are listed in above table in the section 2.3, please refer to above for details.

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:

a) 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;

b) Modifications to the implementation, operation and monitoring of the project activity has not been sufficiently documented by the project participants;

c) 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 and 13.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Through reviewing the registered PDD /3/ and validation and verification report /4/, it was validated that the project has been registered as a CDM project with reference No. 3356 first which is available at https://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view. Then the project has been registered as VCS project which is available at https://registry.verra.org/app/projectDetail/VCS/736. The project 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 30/10/2019 to 29/10/2029 as the second VCS crediting period, the project would claim only for VCUs or CERs. But both VCS and CERs will not be claimed in the same period. Also, for period 03/07/2010 to 30/09/2015 (first VCS crediting period), the project has applied for the issuance of CERs.

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

There is a crediting period deviation in this monitoring period.

The project was registered under VCS scheme in 2011. In the Verification Report of initial VCS monitoring period, it was mentioned that the project started operation since 30/10/2009. As per UNFCCC website, it was confirmed that the project activity was registered as CDM project activity on 03/07/2010. Therefore, the VCS crediting period was determined as 30/10/2009 to 02/07/2010. As per VCS scheme under which the project was registered, the project crediting period is allowable for 10 years and could be renewed twice. Therefore, the total VCS crediting period was determined from 30/10/2009 to 02/07/2031, of which the first VCS crediting period is from 30/10/2009 to 29/10/2019 and the second VCS crediting period is from 30/10/2019 to 29/10/2029. The same has been described in the renewed VCS PD and approved by VERRA.

As a CDM project with a 7*3 renewable project crediting period, the VCS issuance is not eligible for beyond the end of those 21 years. Furthermore, given that the VCS crediting period started on 30/10/2009 and the lifetime of the project is about 20 years, thus, the VCS crediting period will end on the 29/10/2029.

The assessment team confirm this is in line with the requirement of VCS and it has no impacts on the applicability, additionality or baseline of the project.

There is another deviation for project description for Other Entities Involved in the Project,

For project proponent of this project, during this monitoring period, in order to in order to carry out the project issuance application more efficiently, two other entities were added to the project proponents. Demeter Venture Uk Limited is the buyer of VCUs; Beijing Cronus Technology Consultancy Centre is the project account holder; Beijing Ruifang Information Technology Co., Ltd. Is the project consultant, provide consulting services during issuance process. The assessment team has verified the information of new entities involved in the project, as well as their roles and confirmed to be appropriately described and incorporated in the relevant sections of the MR.

The assessment team confirm this is in line with the requirement of VCS and it has no impacts on the applicability, additionality or baseline of the project.

The assessment team confirm the deviation has been appropriately described and justified, and the project remains in conformance with the VCS rules and the deviation is still valid.

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 project activity proposed in the registered PDD /3/ are in place and the PP has operated the project as per registered PDD /3/. The installed capacity of the project activity is 49.5 MW, consisting of 33 sets of wind turbines with unit capacity of 1,500 kW. The electricity generated is transmitted to the Hebei Power Grid via 110kV Substation, which was then exported to the NCPG. The project activity was expected to supply 117,322.7152 MWh of electricity to the grid annually. The commissioning time was 30/10/2009 verified by site visit interview and checking verification report. 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 implementation of project is in line with the description of registered PDD.

By checking online information and interview with the project owner, it is confirmed that the emission reduction resulted from the project during this monitoring period would apply for VCUs. There are no other forms of environmental credits applied or issued for the project activity. Therefore, the project has not been participated or been rejected under any other GHG programs since validation or previous verification except CDM.

The project has not received or sought any other form of environmental credit or has become eligible to do so since validation or previous verification.

The GHG emission reductions or removals generated by the project have not become included in an emissions trading program or any other mechanism that includes GHG allowance trading except CDM.

The project would contribute to sustainable development in as below:

Reducing greenhouse gas emissions compared to a business-as-usual scenario;

Diversifying power sources and mitigating the demand and supply contradiction;

Helping to stimulate the growth of the wind power industry and encourage and promote the technology progress and commercial popularization of grid-connected renewable power generation projects in China;

Reducing the emission of other pollutants resulting from the power generation industry in China, compared to a business-as-usual scenario;

Creating 10 employment opportunities for local community during the operation period of the Project and creating several employment opportunities for local community during the construction period of the Project.

Moreover by checking public information, staff roaster of project /15/ and site visit, following information has been confirmed:

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By utilizing wind for power generation and replaced it from thermal power generation projects from 01/12/2021 to 31/05/2023 the emission reduction from the project is around 154,359 tCO_2e	The credits from the operation start date of the project to 31/05/2023, the verified emission reduction generated by this project is 1,640,801 tCO_2e.

2	8.5	Total number of job opportunities	Implemented activities to increase	During the current monitoring period, the total number of employees is 42 (including 20 females, 10 of whom are residents of the villages surrounding the project. And local employees account for about 23.81% of the total staff.	During the operation time, the project provides about 42 stable work opportunities to local people, including 20 females, 10 of whom are residents of the villages surrounding the project. And local employees account for about 23.81% of the total staff. The project will provide more employment opportunities for surrounding residents in the future.
3	7.2	MWh of renewable energy generated	Implemented activities to increase	The project utilizes wind energy for electricity generation, which could increase the ratio of renewable energy in total energy consumption of China. From 01/12/2021 to 31/05/2023 the electricity supplied from the project is 183,664.052 MWh.	From the operation start date of the project to 31/05/2023, the verified electricity generated by this project is 1,646,207.403 MWh.

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

Equipment	Quantity	Type	Technical parameters
Turbine	33 sets	GE1.5sle	Rated power: 1,500 kW Quantity of blades: 3 Height of the hub: 80 m Power factor of generator: ± 0.95 Lifetime: 20 years Annual operating hours: 2,368 h
Main transformer	1 set	SZ11-50000/10	Capacity: 50 MVA Rated voltage: 110/35 kV

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PD, the actual emission reductions (154,359 tCO_2e) are 4.46% higher than what is stated in the registered PD (i.e. 147,769 tCO_2e, equals to annual emission reductions, 98,603 tCO_2e multiplied by the actual operational days (547 days) then divided by 365 days). The assessment team consider this variation is in normal variation.

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.

The assessment team confirmed the correction of audit history indicated in the PD through checking information on CDM website, VERRA website and related documents.

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 PDD, 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

The local stakeholder's meeting was held in Guyuan County in December 2008. 60 participants attended the meeting including local residents, builders and members of the local authorities. The project owner introduced the proposed project, and then a survey was arranged through a one-page questionnaire, which was designed to be easily filled in. The opinions expressed by the stakeholders were recorded and are available on request.

The stakeholder meeting and 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.

Communications with Local stakeholders was being carried out at periodic intervals. There are no negative comments received for the project.

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

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:	$EG_{facility,y}$
Data unit:	MWh/yr
Description:	Quantity of net electricity generation supplied by the project plant to the grid in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	183,664.052
Source of data used:	The quantity of net electricity generation supplied by the project plant to the grid in year y ($EG_{facility,y}$) are calculated by the electricity delivered by the Project to the grid in year y ($EG_{PJtoGRID,y}$), the electricity imported by the Project from the grid via the main transmission line in year y ($EG_{GRIDtoPJ,y}$) and the electricity imported by the Project from the grid via the 10 kV backup line in year y ($EG_{10kVtoPJ,y}$) as below: $EG_{facility,y} = EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y} - EG_{10kVtoPJ,y}$ For $EG_{PJtoGRID,y}$, $EG_{GRIDtoPJ,y}$ and $EG_{10kVtoPJ,y}$ are all sourced from Meter Reading Records (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.
Information flow:	For $EG_{PJtoGRID,y}$ and $EG_{GRIDtoPJ,y}$: 1 bidirectional electricity meter installed on the main transmission line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 1 bidirectional electricity meter's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings then transcribes the data into Electricity Transaction Notes (ETNs).

<table>
<tr><td></td><td>For $EG_{10kVtoPJ,y}$:
1 electricity meter installed on the 10 kV backup line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 1 electricity meter's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings then transcribes the data into Electricity Transaction Notes (ETNs).
The data for MRRs and ETNs have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.</td></tr>
<tr><td>Monitoring method, frequency and equipments:</td><td>The parameter was measured continuously and recorded monthly by 1 bi-directional electricity meter installed on the main transmission line and 1 electricity meter installed on the 10 kV backup line during the monitoring period verified by site visit.
See below for the information of 2 electricity meters and verified by site visit and checking calibration certificates /12/:
<table>
<tr><th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr>
<tr><td>Bi-direction Meter</td><td>DSSD685</td><td>09070111440073</td><td>0.2s</td></tr>
<tr><td>Meter</td><td>DSSD132</td><td>20242018</td><td>1.0</td></tr>
</table>
The type, serial number and accuracy have been confirmed by site visit.</td></tr>
<tr><td>Calibration:</td><td>The calibration information is shown as below /12/:
<table>
<tr><th>Meter</th><th>Calibration date</th><th>Valid until</th></tr>
<tr><td rowspan="3">Bi-direction Meter</td><td>25/03/2021</td><td>24/03/2022</td></tr>
<tr><td>25/03/2022</td><td>24/03/2023</td></tr>
<tr><td>25/03/2023</td><td>24/03/2024</td></tr>
<tr><td rowspan="3">Meter</td><td>15/02/2021</td><td>14/02/2022</td></tr>
<tr><td>15/02/2022</td><td>14/02/2023</td></tr>
<tr><td>15/02/2023</td><td>14/02/2024</td></tr>
</table>
The calibration was conducted by accredited third parties which is Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company was accredited by Quality and Technical Supervision Bureau of Hebei /13/.</td></tr>
<tr><td>QA/QC procedure:</td><td>Data record will be archived for a period of 2 years after the crediting period to which the records pertain.</td></tr>
<tr><td>Means of verification:</td><td>Data of the parameter was verified by checking MRRs and ETNs. All data is in line with MRRs and ETNs;</td></tr>
</table>

	Information flow was verified by checking MRRs and ETNs, and all information are consistent; Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PDD; Calibration was verified by checking calibration certificate and Accreditation certificate, all calibration of monitoring equipment meets the requirement indicated in the PDD.

Data / Parameter:	$EG_{PJtoGRID,y}$
Data unit:	MWh
Description:	The electricity delivered by the Project to the grid in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	183,869.022
Source of data used:	For $EG_{PJtoGRID,y}$, data are all sourced from Meter Reading Records (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.
Information flow:	1 bidirectional electricity meter installed on the main transmission line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 1 bidirectional electricity meter's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings then transcribes the data into Electricity Transaction Notes (ETNs). After the confirmation of project owner for ETNs, the project owner will issue the invoice. The data for MRRs and ETNs have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.
Monitoring method, frequency and equipments:	The parameter was measured continuously and recorded monthly by 1 bi-direction electricity meter installed on the main transmission line during the monitoring period verified by site visit. See below for the information of 1 electricity meter and verified by site visit and checking calibration certificates /12/:

Meter	Type	Serial Number	Accuracy
Bi-direction Meter	DSSD685	09070111440073	0.2s

The type, serial number and accuracy have been confirmed by site visit.

<table>
<tr><td>Calibration:</td><td>The calibration information is shown as below /12/:
<table>
<tr><th>Meter</th><th>Calibration date</th><th>Valid until</th></tr>
<tr><td rowspan="3">Bi-direction Meter</td><td>25/03/2021</td><td>24/03/2022</td></tr>
<tr><td>25/03/2022</td><td>24/03/2023</td></tr>
<tr><td>25/03/2023</td><td>24/03/2024</td></tr>
</table>
The calibration was conducted by accredited third parties which is Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company was accredited by Quality and Technical Supervision Bureau of Hebei /13/.</td></tr>
<tr><td>QA/QC procedure:</td><td>Data record will be archived for a period of 2 years after the crediting period to which the records pertain.</td></tr>
<tr><td>Means of verification:</td><td>Data of the parameter was verified by checking Monthly Report and ETNs. All data is in line with Monthly Report and ETNs;
Information flow was verified by checking Monthly Report and ETNs, and all information are consistent;
Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PD;
Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the PD.</td></tr>
</table>

Data / Parameter:	$EG_{GRIDtoPJ,y}$
Data unit:	MWh
Description:	The electricity imported by the Project from the grid via the main transmission line in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	204.970
Source of data used:	For $EG_{GRIDtoPJ,y}$, data are all sourced from Meter Reading Records (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.
Information flow:	1 bidirectional electricity meter installed on the main transmission line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 1 bidirectional electricity meter's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings then transcribes the data into Electricity Transaction Notes (ETNs).

<table>
<tr><td></td><td>After the confirmation of project owner for ETNs, the power grid company will issue the invoice.
The data for MRRs and ETNs have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.</td></tr>
<tr><td>Monitoring method, frequency and equipments:</td><td>The parameter was measured continuously and recorded monthly by 1 bi-direction electricity meter installed on the main transmission line during the monitoring period verified by site visit.
See below for the information of 1 electricity meter and verified by site visit and checking calibration certificates /12/:
<table>
<tr><th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr>
<tr><td>Bi-direction Meter</td><td>DSSD685</td><td>09070111440073</td><td>0.2s</td></tr>
</table>
The type, serial number and accuracy have been confirmed by site visit.</td></tr>
<tr><td>Calibration:</td><td>The calibration information is shown as below /12/:
<table>
<tr><th>Meter</th><th>Calibration date</th><th>Valid until</th></tr>
<tr><td rowspan="3">Bi-direction Meter</td><td>25/03/2021</td><td>24/03/2022</td></tr>
<tr><td>25/03/2022</td><td>24/03/2023</td></tr>
<tr><td>25/03/2023</td><td>24/03/2024</td></tr>
</table>
The calibration was conducted by accredited third parties which is Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company was accredited by Quality and Technical Supervision Bureau of Hebei /13/.</td></tr>
<tr><td>QA/QC procedure:</td><td>Data record will be archived for a period of 2 years after the crediting period to which the records pertain.</td></tr>
<tr><td>Means of verification:</td><td>Data of the parameter was verified by checking Monthly Report and ETNs. All data is in line with Monthly Report and ETNs;
Information flow was verified by checking Monthly Report and ETNs, and all information are consistent;
Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PD;
Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the PD.</td></tr>
</table>

Data / Parameter:	$EG_{10kVtoPJ,y}$
Data unit:	MWh

<table>
<tr><td>Description:</td><td>The electricity imported by the project from the grid via the 10 kV backup line in year y</td></tr>
<tr><td>Purpose of the data:</td><td>Calculation of baseline emissions</td></tr>
<tr><td>Parameter value:</td><td>0</td></tr>
<tr><td>Source of data used:</td><td>For $EG_{10kVtoPJ,y}$, data are all sourced from Meter Reading Records (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.</td></tr>
<tr><td>Information flow:</td><td>1 electricity meter installed on the 10 kV backup line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 1 electricity meter's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings then transcribes the data into Electricity Transaction Notes (ETNs). After the confirmation of project owner for ETNs, the power grid company will issue the invoice.
The data for MRRs and ETNs have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.</td></tr>
<tr><td>Monitoring method, frequency and equipments:</td><td>The parameter was measured continuously and recorded monthly by 1 electricity meter installed on the 10 kV backup line during the monitoring period verified by site visit.
See below for the information of 1 electricity meter and verified by site visit and checking calibration certificates /12/:
<table>
<tr><th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr>
<tr><td>Meter</td><td>DSSD132</td><td>20242018</td><td>1.0</td></tr>
</table>
The type, serial number and accuracy have been confirmed by site visit.</td></tr>
<tr><td>Calibration:</td><td>The calibration information is shown as below /12/:
<table>
<tr><th>Meter</th><th>Calibration date</th><th>Valid until</th></tr>
<tr><td rowspan="3">Meter</td><td>15/02/2021</td><td>14/02/2022</td></tr>
<tr><td>15/02/2022</td><td>14/02/2023</td></tr>
<tr><td>15/02/2023</td><td>14/02/2024</td></tr>
</table>
The calibration was conducted by accredited third parties which is Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company was accredited by Quality and Technical Supervision Bureau of Hebei /13/.</td></tr>
</table>

QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.
Means of verification:	Data of the parameter was verified by checking Monthly Report and ETNs. All data is in line with Monthly Report and ETNs; Information flow was verified by checking Monthly Report and ETNs, and all information are consistent; Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PD; Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the PD.

Parameters available at validation stage:

Below data has been verified against the data sources and the PD, for the rest of parameters are not used in the calculation of ER in this monitoring period.

Parameter title	Description	Data	Source
$EF_{grid,OM,y}$	Simple operating margin CO_2 emission factor in year y	0.9680	2017 Baseline Emission Factors for Regional Power Grids in China, issued by China DNA on 20/12/2018 /14/.
$EF_{grid,BM,y}$	Build margin CO_2 emission factor in year y	0.4578	2017 Baseline Emission Factors for Regional Power Grids in China, issued by China DNA on 20/12/2018 /14/.
w_{OM}	Weighting of operating margin emissions factor	75	Tool to calculate the emission factor for an electricity system, version 07.0.0
w_{BM}	Weighting of build margin emissions factor	25	Tool to calculate the emission factor for an electricity system, version 07.0.0

In conclusion, the assessment team confirmed GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The monitoring has been carried out in accordance with VCS PD /3/ dated 09/05/2020.

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.

By checking the original record, crosscheck with the supporting evidence issued from other party than project owner, checking calibration related documents and interview with project owner through the site visit, the VVB is able to confirm there are no transposition errors between data sets. All data are consistent in all data sets.

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.

4.6 Non-Permanence Risk Analysis

Not applicable as a renewable project.

5 VERIFICATION OPINION

Applus+ Certification has been commissioned by Beijing Ruifang Information Technology Co., Ltd to perform the verification of greenhouse gas emission reductions of the project activity "Guyuan Wuhuaping 49.5 MW Wind Power Project" (VCS Ref. No. 736).

The management of Construction Investment Yanshan (Guyuan) Wind Energy 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 VCS PD /3/ dated 09/05/2020.

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 PD;

the monitoring plan in the registered PD is as per the applied methodology;

the monitoring complies with the registered 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 "Guyuan Wuhuaping 49.5 MW Wind Power Project" during the monitoring period 01/12/2021 to 31/05/2023 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 01/12/2021 to 31/05/2023 (divided into 3 vintage periods). Verified GHG emission reductions or removals in the above reporting period:

Verification period: From 01/12/2021 to 31/05/2023

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
2021 (01/12/2021-31/12/2021)	*8,674*	*0*	*0*	*8,674*

2022 (01/01/2022-31/12/2022)	*102,446*	*0*	*0*	*102,446*
2023 (01/01/2023-31/05/2023)	*43,239*	*0*	*0*	*43,239*
Total	***154,359***	***0***	***0***	***154,359***

Year	*Ex-ante emissions reductions/removals*	*Achieved emissions reductions/removals*	*Percent difference*	*Justification for the difference*
2021 (01/12/2021-31/12/2021)	*8,375*	*8,674*	*3.58%*	*The difference is in the normal range of fluctuation*
2022 (01/01/2022-31/12/2022)	*98,603*	*102,446*	*3.90%*	*The difference is in the normal range of fluctuation*
2023 (01/01/2023-31/05/2023)	*40,792*	*43,239*	*6.00%*	*The difference is in the normal range of fluctuation*
Total	***147,769***	***154,359***	***4.46%***	***The difference is in the normal range of fluctuation***

APPENDIX 1: REFERENCE LIST

1. Monitoring report, Version 1.0, dated 30/06/2023; Version 3.0, dated 29/12/2023

2. ER calculation spreadsheet

3. CDM PDD, version 03, dated 17/12/2009;

   VCS PD, version 2.0, dated 09/05/2020

4. CDM Validation Report, No. BVC/CHINA-VAL/0192/2009, version 01, completed by BV;

   VCS Validation report, No. A+SH_SYST_VCS_RCP_1320, version 01.0, completed by Applus+ Certification

5. VCS standard version 4.4, dated on 17/01/2023

6. Statement issued by project owner

7 Approved methodology ACM0002: Consolidated methodology for grid-connected electricity generation from renewable sources, version 20.0

8 CDM Monitoring procedure

9 Nameplate of the equipment

10 Monthly Report

11 Electricity Transaction Notes (ETNs)

12 Calibration certificates of electricity meters covering the whole monitoring period issued by Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company

13 Accreditation certificates for Electric energy Measuring and Testing centre of Zhangjiakou Power Grid Company issued by Quality and Technical Supervision Bureau of Hebei

14 2017 Baseline Emission Factors for Regional Power Grids in China dated 20/12/2018 published by China DNA

15 Staff roaster of project

16 Power Purchase Agreement