HEBEI GUYUAN COUNTY DONGXINYING 199.5 MW WIND POWER PROJECT

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

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Work Carried Out By	Lead Auditor / Technical Expert: Denny Xue 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 "Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project" (VCS Ref. No. 903, hereafter referred to as "the project activity") reported in the monitoring report /1/ during monitoring period 01/10/2015 to 29/02/2020.

The project activity was registered as a CDM project activity on 15/09/2011 which is available at https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1306303373.74/view. A PRC has been made for the project and approved by UNFCCC on 06/11/2012, then the registered revised CDM PDD version 7.0 dated 27/07/2012 would be final registered PDD and the basis for verification. Meanwhile, the project has been registered as a VCS project which is available at https://www.vcsprojectdatabase.org/#/project_details/903.

The project activity is a wind power project located at Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China which is to use wind resource for electricity generation. The installed capacity of the project activity is 199.5 MW, consisting of 133 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 405,685 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 427,936 tCO_2e annually.

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 revised registered PDD /3/ version 7.0 dated 27/07/2012;
- Validation report No. 01 997 9105049838 /04/, version 04.3, completed on 08/09/2011;
- Validation report No. CHINA-PRC/8579/2012 /04/, version 01, completed on 20/08/2012;
- Approved methodology, ACM0002 /9/, version 12.1.0, dated 17/10/2010;
- VCS standards and guidance version 4.0, 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 PDD /3/. The monitoring plan complies with the applied methodology ACM0002 /7/ version 12.1.0 and the monitoring has been carried out in accordance with the monitoring plan in the registered PDD /3/. 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 2,021,522 tCO_2e emission reductions during period 01/10/2015 to 29/02/2020.

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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 "Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project" (VCS Ref. No. 903) reported in the Monitoring Report /1/ during monitoring period 01/10/2015 to 29/02/2020.

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 14065:2007.

The objective of verification is to have an independent review and ex post determination by a Designated Operational Entity (DOE) 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 DOE 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 "Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project" in China for the period 01/10/2015 to 29/02/2020.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PDD, the Project's baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.0 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	Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project
VCS reference number	903
Project Participants	Hebei Construction Investment New Energy Co., Ltd. (Project Owner, host country, P. R. China)
Location of the project	Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China Geographic coordinates: Longitude: 115.2997° E – 115.7508° E Latitude: 41.3169° N – 41.5661° N
Project start date	Construction date: 25/08/2008 Operation start date: 25/05/2010
Version of VCS PD or CDM PDD	Version 7.0, dated 27/07/2012 (CDM PDD and basis for verification)
Monitoring period	01/10/2015 to 29/02/2020
First monitoring report	Version 01, dated 08/03/2020
Final monitoring report	Version 02, dated 13/03/2020
Applied Methodology/Version	ACM0002, version 12.1.0, dated 17/10/2010
Scope/Technical Area	1/1.2

The project activity is a wind power project located at Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China which is to use wind resource for electricity generation. The installed capacity of the project activity is 199.5 MW, consisting of 133 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 405,685 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 427,936 tCO_2e annually.

The project activity was registered as a CDM project activity on 15/09/2011 which is available at https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1306303373.74/view. A PRC has been made for the project and approved by UNFCCC on 06/11/2012, then the registered revised CDM PDD version 7.0 dated 27/07/2012 would be final registered PDD and the basis for verification. Meanwhile, the project has been registered as a VCS project which is available at https://www.vcsprojectdatabase.org/#/project_details/903.

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 4.0, 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
Denny Xue	*LA/TE*	*Y (1.2)*	*Y*	*Y*
Simon Shen	*TR*	*Y (1.2)*	*Y*	*Y*

Denny Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is a lead auditor appointed by Applus+ Certification for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ Certification, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

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 01 dated 08/03/2020, version 02 dated 13/03/2020 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, the revised registered PDD /3/ version 7.0 dated 27/07/2012 in particular the baseline estimations and the monitoring plan, the CDM validation report /04/ version 04.3 dated 08/09/2011 and the CDM validation report /04/ version 01 dated 20/08/2012, as well as relevant documents, were reviewed. A detailed documents reviewed are listed in Annex 1 of the report.

2.3 Interviews

The key personnel interviewed are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Zhang Guanyu	Project Manager	Hebei Construction Investment New Energy Co., Ltd.	Operation of the project activity; Implementation of the monitor plan of the project activity; Data collection and data achievement; Calibration of meters and equipment maintenance. Data collection and ER calculation.
Mr. Yan Junjie	Project Manager	Hebei Construction Investment New Energy Co., Ltd.	

2.4 Site Inspections

The assessment team performed the on-site verification (Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China) on 12/03/2020. 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:

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 verification and 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

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. 4853 first which is available at https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1306303373.74/view. Then the project has been registered as VCS project which is available at https://www.vcsprojectdatabase.org/#/project_details/903. 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 25/05/2010 to 24/05/2020 as the first 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 15/09/2011 to 30/09/2015, 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 not deviation for methodology.

3.3 Project Description Deviations

Not applicable as not deviation for project.

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 199.5 MW, consisting of 133 sets of wind turbines with unit capacity of 1,500 kW. The electricity generated is transmitted to the Hebei Power Grid via 220 kV Substation, which was then exported to the NCPG. The project activity was expected to supply 405,685 MWh of electricity to the grid annually. The commissioning time was 25/05/2010 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.

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. The project would contribute to sustainable development in as below:

1. GHG emission reduction

The proposed project activity will achieve obvious GHG emission reductions by avoiding CO_2 emissions.

2. Pollutants emission reduction through replacing fossil fuel combustion

The proposed project is to replace electricity generated by grid-connected coal-fired power plants in the NCPG, and thus reduce fossil fuel consumption and avoid pollutants emission, such as sulfur dioxide and dust, brought by fossil fuel combustion. Therefore, the proposed project has obvious environmental benefit.

3. Employment opportunities

The conducting of the proposed project will create certain job opportunities for local people during operation and achieve the economic growth in the region. Furthermore, the proposed project plans to utilize domestic made state-of-the-art wind turbines to promote the wind turbine manufacturing industries.

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

Parameter	Unit	Value
Type of turbine	-	FD77B
Type of generator	-	Double-fed Asynchronous Motor

Nominal output	kW	1,500
Rotor diameter	m	77
Hub height	m	61.5
Rated voltage	V	690
Cut-in wind speed	m/s	3.0
Nominal wind speed	m/s	12

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PDD, the actual emission reductions (2,021,522 tCO_2e) are 6.9% higher than what is stated in the registered PDD (i.e. 1,891,125 tCO_2e, equals to annual emission reductions, 427,936 tCO_2e multiplied by the actual operational days (1,613 days) then divided by 365 days) which could be consider in the normal variation range, and when considering this in the IRR calculation, the IRR would be still below the benchmark. Therefore, the assessment team consider the variation of ERs is acceptable and will not lead to the overestimation of VERs.

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 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 Dongxinying Village, Lianhuatan Village and Taiping Village on 12/02/2008. 81 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 PDD.

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 registered PDD /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
Description:	Net electricity supplied to the grid by the proposed project in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	1,916,408.837
Source of data used:	Net electricity supplied to the grid by the proposed project in year y ($EG_{facility,y}$) is calculated by annual electricity exported to the grid by the proposed project ($EG_{export,y}$), annual electricity imported from the grid to the proposed project ($EG_{import,y}$) and electricity delivered to the project through the backup line ($EG_{backupline,y}$) as below formula: $EG_{facility,y} = EG_{export,y} - EG_{import,y} - EG_{backupline,y}$ For annual electricity exported to the grid by the proposed project ($EG_{export,y}$), annual electricity imported from the grid to the proposed project ($EG_{import,y}$) and electricity delivered to the project through the backup line ($EG_{backupline,y}$), 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:	Net electricity supplied to the grid by the proposed project in year y ($EG_{facility,y}$) is calculated by annual electricity exported to the grid by the proposed project ($EG_{export,y}$), annual electricity imported from the grid to the proposed project ($EG_{import,y}$) and electricity delivered to the project through the backup line ($EG_{backupline,y}$) as below formula: $EG_{facility,y} = EG_{export,y} - EG_{import,y} - EG_{backupline,y}$

Monitoring method, frequency and equipments:	Net electricity supplied to the grid by the proposed project in year y ($EG_{facility,y}$) is calculated by annual electricity exported to the grid by the proposed project ($EG_{export,y}$), annual electricity imported from the grid to the proposed project ($EG_{import,y}$) and electricity delivered to the project through the backup line ($EG_{backupline,y}$) as below formula: $EG_{facility,y} = EG_{export,y} - EG_{import,y} - EG_{backupline,y}$
Calibration:	Not applicable
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 MRRs and ETNs. All data is in line with MRRs and ETNs; 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:	$EG_{export,y}$
Data unit:	MWh
Description:	Annual electricity exported to the grid by the proposed project
Purpose of the data:	Calculation of baseline emissions
Parameter value:	1,918,164.760
Source of data used:	For annual electricity exported to the grid by the proposed project ($EG_{export,y}$), 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:	2 sets of bidirectional electricity meters (one as main (M1 and M2) and another as backup (M3 and M4)) installed on the main transmission line were measured continuously, recorded monthly and archived electronically. At 24:00 hr of last day of each month, the staff from project owner will record main 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

<table>
<tr><td></td><td>(ETNs). After the confirmation of ETNs from the project owner, 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.</td></tr>
<tr><td>Monitoring method, frequency and equipments:</td><td>The parameter was measured continuously and recorded monthly by 4 bi-direction electricity meters on the project site during the monitoring period verified by site visit.
See below for the information of 4 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>Main Meter M1</td><td>ACE8000</td><td>37006390</td><td>0.2s</td></tr>
<tr><td>Main Meter M2</td><td>ACE8000</td><td>37002994</td><td>0.2s</td></tr>
<tr><td>Backup Meter M3</td><td>DSSD331</td><td>09080144840023</td><td>0.2s</td></tr>
<tr><td>Backup Meter M4</td><td>DSSD331</td><td>09080144840005</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="5">Main Meter M1</td><td>13/08/2015</td><td>12/08/2016</td></tr>
<tr><td>08/08/2016</td><td>07/08/2017</td></tr>
<tr><td>01/08/2017</td><td>31/07/2018</td></tr>
<tr><td>25/07/2018</td><td>24/07/2019</td></tr>
<tr><td>17/07/2019</td><td>16/07/2020</td></tr>
<tr><td rowspan="5">Main Meter M2</td><td>13/08/2015</td><td>12/08/2016</td></tr>
<tr><td>08/08/2016</td><td>07/08/2017</td></tr>
<tr><td>01/08/2017</td><td>31/07/2018</td></tr>
<tr><td>25/07/2018</td><td>24/07/2019</td></tr>
<tr><td>17/07/2019</td><td>16/07/2020</td></tr>
<tr><td rowspan="2">Backup Meter M3</td><td>18/10/2015</td><td>17/10/2016</td></tr>
<tr><td>12/10/2016</td><td>11/10/2017</td></tr>
</table></td></tr>
</table>

		29/09/2017	28/09/2018
		21/09/2018	20/09/2019
		16/09/2019	15/09/2020
	Backup Meter M4	18/10/2015	17/10/2016
		12/10/2016	11/10/2017
		29/09/2017	28/09/2018
		21/09/2018	20/09/2019
		16/09/2019	15/09/2020
	The calibration was conducted by accredited third parties which is Zhangjiakou Electric Power Research Institute was accredited by Quality and Technology Supervision Bureau of Hebei Province /13/.		
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 MRRs and ETNs. All data is in line with MRRs and ETNs; 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:	$EG_{import,y}$
Data unit:	MWh
Description:	Annual electricity imported from the grid to the proposed project
Purpose of the data:	Calculation of baseline emissions
Parameter value:	1,755.923
Source of data used:	For annual electricity imported from the grid to the proposed project ($EG_{import,y}$), 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.

<table>
<tr><td>Information flow:</td><td>2 sets of bidirectional electricity meters (one as main (M1 and M2) and another as backup (M3 and M4)) installed on the main transmission line were measured continuously, recorded monthly and archived electronically. At 24:00 hr of last day of each month, the staff from project owner will record main 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 ETNs from the project owner, 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>
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See below for the information of 4 electricity meters and verified by site visit and checking calibration certificates /12/:
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<tr><th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr>
<tr><td>Main Meter M1</td><td>ACE8000</td><td>37006390</td><td>0.2s</td></tr>
<tr><td>Main Meter M2</td><td>ACE8000</td><td>37002994</td><td>0.2s</td></tr>
<tr><td>Backup Meter M3</td><td>DSSD331</td><td>09080144840023</td><td>0.2s</td></tr>
<tr><td>Backup Meter M4</td><td>DSSD331</td><td>09080144840005</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="5">Main Meter M1</td><td>13/08/2015</td><td>12/08/2016</td></tr>
<tr><td>08/08/2016</td><td>07/08/2017</td></tr>
<tr><td>01/08/2017</td><td>31/07/2018</td></tr>
<tr><td>25/07/2018</td><td>24/07/2019</td></tr>
<tr><td>17/07/2019</td><td>16/07/2020</td></tr>
<tr><td rowspan="2">Main Meter M2</td><td>13/08/2015</td><td>12/08/2016</td></tr>
<tr><td>08/08/2016</td><td>07/08/2017</td></tr>
</table></td></tr>
</table>

		01/08/2017	31/07/2018
		25/07/2018	24/07/2019
		17/07/2019	16/07/2020
	Backup Meter M3	18/10/2015	17/10/2016
		12/10/2016	11/10/2017
		29/09/2017	28/09/2018
		21/09/2018	20/09/2019
		16/09/2019	15/09/2020
	Backup Meter M4	18/10/2015	17/10/2016
		12/10/2016	11/10/2017
		29/09/2017	28/09/2018
		21/09/2018	20/09/2019
		16/09/2019	15/09/2020
	The calibration was conducted by accredited third parties which is Zhangjiakou Electric Power Research Institute was accredited by Quality and Technology Supervision Bureau of Hebei Province /13/.		
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 MRRs and ETNs. All data is in line with MRRs and ETNs; 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:	$EG_{backupline,y}$
Data unit:	MWh
Description:	Electricity delivered to the project through the backup line

<table>
<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 electricity delivered to the project through the backup line ($EG_{backupline,y}$), 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 (M5) installed on the backup line was measured continuously, recorded monthly and archived electronically. At 24:00 hr of last day of each month, the staff from project owner will record 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 on the 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>M5</td><td>DSSD22</td><td>B24T0P812403001807</td><td>0.5s</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="5">M5</td><td>13/08/2015</td><td>12/08/2016</td></tr>
<tr><td>08/08/2016</td><td>07/08/2017</td></tr>
<tr><td>01/08/2017</td><td>31/07/2018</td></tr>
<tr><td>25/07/2018</td><td>24/07/2019</td></tr>
<tr><td>17/07/2019</td><td>16/07/2020</td></tr>
</table></td></tr>
</table>

	The calibration was conducted by accredited third parties which is Zhangjiakou Electric Power Research Institute was accredited by Quality and Technology Supervision Bureau of Hebei Province /13/.
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 MRRs and ETNs. All data is in line with MRRs and ETNs; 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.

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: the combined emission factor	1.05485	Notification on 2008 baseline emission factors for regional power grids in China, issued by China on 18/07/2008 /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 the monitoring plan contained in the registered PDD /3/ version 7.0 dated 27/07/2012.

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 12.1.0 and the monitoring plan contained in the registered PDD. The parameters are complete in this monitoring period.

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 5.4 of the report.

4.6 Non-Permanence Risk Analysis

Not applicable as a renewable project.

5 VERIFICATION CONCLUSION

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 "Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project" (VCS Ref. No. 903).

The management of Hebei Construction Investment New 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 registered PDD /3/, version 7.0 dated 27/07/2012.

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 PDD;
- the monitoring plan in registered PDD is as per the applied methodology;
- the monitoring complies with the monitoring plan in the registered PDD;
- 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 "Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project" during the monitoring period 01/10/2015 to 29/02/2020 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 01/10/2015 to 29/02/2020 (divided into 6 vintage periods). Verified GHG emission reductions or removals in the above reporting period:

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)
2015	100,833	0	0	100,833
2016	421,008	0	0	421,008
2017	494,476	0	0	494,476
2018	473,639	0	0	473,639
2019	456,968	0	0	456,968
2020	74,598	0	0	74,598
Total	2,021,522	0	0	2,021,522

APPENDIX 1: REFERENCE LIST

1. Monitoring report, version 01, dated 08/03/2020; version 02, dated 13/03/2020

2. ER calculation spreadsheet

3. Registered PDD, version 7.0, dated 27/07/2012

4. Validation report, No. 01 997 9105049838, version 04.3, completed by TÜV Rheinland;

   Validation report No. CHINA-PRC/8579/2012, version 01, complete by BV

5. VCS standard version 4.0, dated on 19/09/2019

6. Statement issued by project owner

7 Approved methodology ACM0002, version 12.1.0, dated 17/10/2010

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 Zhangjiakou i Electric Power Research Institute

13 Accreditation certificates for Zhangjiakou Electric Power Research Institute issued by Quality and Technology Supervision Bureau of Hebei Province

14 Notification on 2008 baseline emission factors for regional power grids in China, issued by China on 18/07/2008