



**Verified Carbon
Standard**

HEBEI KANGBAO WOLONGTUSHAN 30 MW WIND FARM PROJECT



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

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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 Kangbao Wolongtushan 30 MW Wind Farm Project” (VCS Ref. No. 148, hereafter referred to as “the project activity”) reported in the monitoring report /1/ during monitoring period 01/07/2012 to 29/09/2016.

The project activity has been validated by DNV based on the CDM PDD /3/ version 02 dated 15/01/2007 and reported in the validation report No. 2006-2142 /4/, version 01, completed on 16/01/2007. The project activity was registered as a CDM project activity on 05/04/2007 which is available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1169559890.44/view>. A PRC was made and approved by UNFCCC on 27/12/2012. A gap validation was performed by SGS through the first VCS verification which is available at <https://registry.verra.org/app/projectDetail/VCS/148>.

The project activity is a wind power project located at South of Kaobao County, Zhangjiakou City of Hebei Province, P. R. China which is to use wind resource for electricity generation. The installed capacity of the project activity is 30 MW, consisting of 40 sets of wind turbines with unit capacity of 750 kW. The average annual power delivered to the grid by the project is expected to be 57,946 MWh. The project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in North China Power Grid (NCPG). It's estimated that the proposed project could achieve GHG emission reductions of 59,089 tCO₂e 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 registered CDM PDD /3/ version 02 dated 15/01/2007;
- Monitoring plan included in the revised CDM PDD /3/ version 03 dated 20/09/2012;
- Validation report No. 2006-2142 /4/, version 01, completed on 16/01/2007 by DNV;
- VCS Verification Report /4/, version 01, completed on 28/08/2007 by SGS;

- Approved methodology, ACM0002 /7/, version 6.0, dated 18/05/2006;
- VCS standards version 4.1, VCS 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 and revised CDM PDD /3/. The monitoring plan complies with the applied methodology ACM0002 /7/ version 6.0 and the monitoring has been carried out in accordance with the registered PDD. 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 261,621 tCO₂e emission reductions during period 01/07/2012 to 29/09/2016.

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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 Kangbao Wolongtushan 30 MW Wind Farm Project” (VCS Ref. No. 148) reported in the Monitoring Report /1/ during monitoring period 01/07/2012 to 29/09/2016.

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 “Hebei Kangbao Wolongtushan 30 MW Wind Farm Project” in China for the period 01/07/2012 to 29/09/2016.

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 standards version 4.1, VCS guidance 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 CDM-PDD, revised CDM-PDD, 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 Kangbao Wolongtushan 30 MW Wind Farm Project
VCS reference number	148
Project Participants	Hebei Construction Investment Zhangjiakou Wind Energy Co., Ltd. (Project Owner, host country, P. R. China)
Location of the project	South of Kaobao County, Zhangjiakou City of Hebei Province, P. R. China Geographic coordinates: East longitude: 114°28' North latitude: 41°51'
Project start date	Construction start date: 16/10/2005 Operation start date: 30/09/2006
Version of VCS PD or CDM PDD	Version 02, dated 15/01/2007 (registered CDM PDD) Version 03, dated 20/09/2012 (revised CDM PDD)
Monitoring period	01/07/2012 to 29/09/2016
First monitoring report	Version 01, dated 20/08/2021
Final monitoring report	Version 03.1, dated 23/11/2021
Applied Methodology/Version	ACM0002, version 6.0, dated 18/05/2006
Scope/Technical Area	1/1.2

The project activity is a wind power project located at South of Kaobao County, Zhangjiakou City of Hebei Province, P. R. China which is to use wind resource for electricity generation. The installed capacity of the project activity is 30 MW, consisting of 40 sets of wind turbines with unit capacity of 750 kW. The average annual power delivered to the grid by the project is expected to be 57,946 MWh. The project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in North China Power Grid (NCPG). It's estimated that the proposed project could achieve GHG emission reductions of 59,089 tCO₂e annually.

The project activity has been validated by DNV based on the CDM PDD /3/ version 02 dated 15/01/2007 and reported in the validation report No. 2006-2142 /4/, version 01, completed on 16/01/2007. The project activity was registered as a CDM project activity on 05/04/2007 which is available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1169559890.44/view>. A PRC was made and approved by UNFCCC on 27/12/2012. A gap validation was performed by SGS through the first VCS verification which is available at <https://registry.terra.org/app/projectDetail/VCS/148>.

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 4.1, 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>Denny Xue</i>	<i>LA/TE</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>
<i>Simon Shen</i>	<i>TR</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>

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 20/08/2021, version 03.1 dated 23/11/2021 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, the registered PDD /3/ version 02 dated 15/01/2007 and revised PDD /3/ version 03 dated 20/09/2012 in particular the baseline estimations and the monitoring plan, the CDM validation report /04/ version 01 dated 16/01/2007 and the VCS Verification Report /4/ version 01 dated 28/08/2007, as well as relevant documents, were reviewed. A detailed documents 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. Yuan Jianxiong	Project Manager	Hebei Construction Investment Zhangjiakou Wind Energy Co., Ltd.	Operation of the project activity; Implementation of the monitor plan of the project activity;
Mr. Chen Xingzhou	Project Manager	Hebei Construction Investment Zhangjiakou Wind Energy Co., Ltd.	Data collection and data achievement; Calibration of meters and equipment maintenance. Data collection and ER calculation.

2.4 Site Inspections

The assessment team performed the on-site verification (South of Kaobao County, Zhangjiakou City of Hebei Province, P. R. China) on 30/08/2021. 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. 878 first which is available at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1169559890.44/view>. Then the project has been registered as VCS project which is available at <https://registry.terra.org/app/projectDetail/VCS/148>. 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 30/09/2006 to 29/09/2016 as the first VCS crediting period, the project would claim only for VUs or CERs. But VUs and CERs will not be claimed in the same period. Also, for period 05/04/2007 to 30/06/2012, 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

The project was registered under CDM scheme on 05/04/2007 with reference number of 878. According to CDM standard, the crediting period is 15/04/2007-14/04/2014, which could be renewed twice.

Then the project was registered under VCS scheme in 2011. In the monitoring report, the project commission date is 30/09/2006 which is also the start date of crediting period. Then, in the monitoring report, the crediting period was set as from 30/09/2006 to 14/04/2007. While according to Voluntary Carbon Standard, version 1, the project crediting period is allowable for 10 years and could be renewed twice. Therefore, the first crediting period of project has been determined as 30/09/2006 to 29/09/2016.

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

3.4 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 CDM PDD /3/ are in place and the PP has operated the project as per registered CDM PDD /3/. The installed capacity of the project is 30 MW, consisting of 40 sets of wind turbines with unit capacity of 750 kW. The electricity generated is transmitted to the local Hebei Power Grid via a newly built transformer station, which was then exported to the NCPG. The project activity was expected to supply 57,946 MWh of electricity to the grid. The construction of the project started on 16/10/2005, the project started operation on 30/09/2006 verified by checking information on the UNFCCC website. 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 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 CO2 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:

Parameters	Unit	Value
Type of turbine	/	Goldwind-S50/750
Rated output	kW	750
Quantity of blades	/	3

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PD, the actual emission reductions (261,621 tCO₂e) are 4.13% higher than what is stated in the registered PD (i.e. 251,250 tCO₂e, equals to annual emission reductions, 59,089 tCO₂e multiplied by the actual operational days (1,552 days) then divided by 365 days) which should be considered as normal variation. Moreover, even apply the actual ER in the IRR calculation, the IRR of the project is still under benchmark. The assessment confirmed the variation of ER 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 PD and 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

A survey was carried out on 25/04/2006 through the information publication, distributing and collecting responses to questionnaires targeting on 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/ and revised monitoring plan /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:	Electricity supplied to the Grid by the Project in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	256,943.317
Source of data used:	Electricity supplied to the Grid by the Project in year y (EG _y) are all sourced from Meter Reading Record (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period. For the data of 29/09/2016 are sourced from Statement from Power Grid Company /14/.
Information flow:	<p>1 electricity meter (Meter 102) installed at 110 kV main transmission line in Project activity site 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 Meter 102's readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings of Meter 102 then transcribes the data into Electricity Transaction Notes (ETNs), then after the confirmation of the project owner for the ETNs, the project owner would issue the invoice. For data of 29/09/2016, data are verified by checking Statement from Power Grid Company /14/.</p> <p>The data for MRRs, ETNs and Statement from Power Grid Company have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.</p>
Monitoring method, frequency and equipments:	The parameter was measured continuously and recorded monthly by 1 electricity meter (Meter 102) installed at 110 kV main transmission line in Project activity site.

	<p>See below for the information of 1 electricity meter verified by site visit and checking calibration certificates /12/:</p> <table border="1"> <thead> <tr> <th>Meter</th> <th>Type</th> <th>Serial Number</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr> <td>Meter 102</td> <td>ZFD402C</td> <td>09070111440059</td> <td>0.2s</td> </tr> </tbody> </table> <p>The type, serial number and accuracy have been confirmed by site visit.</p>	Meter	Type	Serial Number	Accuracy	Meter 102	ZFD402C	09070111440059	0.2s								
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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:	<p>Data of the parameter was verified by checking MRRs, ETNs and Statement from Power Grid Company. All data is in line with MRRs, ETNs and Statement from Power Grid Company;</p> <p>Information flow was verified by checking MRRs, ETNs and Statement from Power Grid Company, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the revised monitoring plan;</p> <p>Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the revised monitoring plan.</p>																

Data / Parameter:	EG _{im-110kV,y}
Data unit:	MWh
Description:	Electricity imported from the Grid by the Project through 110 kV line
Purpose of the data:	Calculation of baseline emissions

Parameter value:	380.790																		
Source of data used:	Electricity imported from the Grid by the Project through 110 kV line (EG _{im-110kV,y}) are all sourced from Meter Reading Record (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period. For the data of 29/09/2016 are sourced from Statement from Power Grid Company /14/.																		
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	02/07/2015	01/07/2016																	
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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:	<p>Data of the parameter was verified by checking MRRs, ETNs and Statement from Power Grid Company. All data is in line with MRRs, ETNs and Statement from Power Grid Company;</p> <p>Information flow was verified by checking MRRs, ETNs and Statement from Power Grid Company, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the revised monitoring plan;</p> <p>Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the revised monitoring plan.</p>

Data / Parameter:	EG _{im-10kV,y}
Data unit:	MWh
Description:	Electricity imported from the Grid by the Project through 10 kV backup line
Purpose of the data:	Calculation of baseline emissions
Parameter value:	0
Source of data used:	Electricity imported from the Grid by the Project through 10 kV backup line (EG _{im-10kV,y}) are all sourced from Meter Reading Record (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.
Information flow:	<p>1 electricity meter installed at the 10 kV backup line in Project activity site 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 of electricity meter then transcribes the data into Electricity Transaction Notes (ETNs), then after the confirmation of the project owner for the ETNs. The power grid company would issue the invoice.</p> <p>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.</p>

Monitoring method, frequency and equipments:	<p>The parameter was measured continuously and recorded monthly by 1 electricity meter installed at 10 kV backup line in Project activity site.</p> <p>See below for the information of 1 electricity meter verified by site visit and checking calibration certificates /12/:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Meter</th> <th>Type</th> <th>Serial Number</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr> <td>Electricity Meter</td> <td>DSSD331</td> <td>00002023</td> <td>1.0</td> </tr> </tbody> </table> <p>The type, serial number and accuracy have been confirmed by site visit.</p>	Meter	Type	Serial Number	Accuracy	Electricity Meter	DSSD331	00002023	1.0								
Meter	Type	Serial Number	Accuracy														
Electricity Meter	DSSD331	00002023	1.0														
Calibration:	<p>The calibration information is shown as below /12/:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Meter</th> <th>Calibration date</th> <th>Valid until</th> </tr> </thead> <tbody> <tr> <td rowspan="6">Electricity Meter</td> <td>02/07/2011</td> <td>01/07/2012</td> </tr> <tr> <td>02/07/2012</td> <td>01/07/2013</td> </tr> <tr> <td>02/07/2013</td> <td>01/07/2014</td> </tr> <tr> <td>02/07/2014</td> <td>01/07/2015</td> </tr> <tr> <td>02/07/2015</td> <td>01/07/2016</td> </tr> <tr> <td>02/07/2016</td> <td>01/07/2017</td> </tr> </tbody> </table> <p>The calibration was conducted by accredited third parties which are Hebei Electric Power Research Institute /13/ which was accredited by Quality and Technical Supervision Bureau of Hebei.</p>	Meter	Calibration date	Valid until	Electricity Meter	02/07/2011	01/07/2012	02/07/2012	01/07/2013	02/07/2013	01/07/2014	02/07/2014	01/07/2015	02/07/2015	01/07/2016	02/07/2016	01/07/2017
Meter	Calibration date	Valid until															
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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:	<p>Data of the parameter was verified by checking MRRs and ETNs. All data is in line with MRRs and ETNs;</p> <p>Information flow was verified by checking MRRs and ETNs, and all information are consistent;</p> <p>Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the revised monitoring plan;</p> <p>Calibration was verified by checking calibration certificate, all calibration of monitoring equipment meets the requirement indicated in the revised monitoring plan.</p>																

Data / Parameter:	EG _{net,y}
Data unit:	MWh
Description:	Net electricity supplied to the Grid by the Project

Purpose of the data:	Calculation of baseline emissions
Parameter value:	256,570.527
Source of data used:	<p>Net electricity supplied to the Grid by the Project ($EG_{net,y}$) are calculated by Electricity supplied to the Grid by the Project in year y (EG_y), Electricity imported from the Grid by the Project through 110 kV line ($EG_{im-110kV,y}$) and Electricity imported from the Grid by the Project through 10 kV backup line ($EG_{im-10kV,y}$) as below formula:</p> $EG_{net,y} = EG_y - EG_{im-110kV,y} - EG_{im-10kV,y}$
Information flow:	<p>Net electricity supplied to the Grid by the Project ($EG_{net,y}$) are calculated by Electricity supplied to the Grid by the Project in year y (EG_y), Electricity imported from the Grid by the Project through 110 kV line ($EG_{im-110kV,y}$) and Electricity imported from the Grid by the Project through 10 kV backup line ($EG_{im-10kV,y}$) as below formula:</p> $EG_{net,y} = EG_y - EG_{im-110kV,y} - EG_{im-10kV,y}$
Monitoring method, frequency and equipments:	<p>Net electricity supplied to the Grid by the Project ($EG_{net,y}$) are calculated by Electricity supplied to the Grid by the Project in year y (EG_y), Electricity imported from the Grid by the Project through 110 kV line ($EG_{im-110kV,y}$) and Electricity imported from the Grid by the Project through 10 kV backup line ($EG_{im-10kV,y}$) as below formula:</p> $EG_{net,y} = EG_y - EG_{im-110kV,y} - EG_{im-10kV,y}$
Calibration:	<p>Net electricity supplied to the Grid by the Project ($EG_{net,y}$) are calculated by Electricity supplied to the Grid by the Project in year y (EG_y), Electricity imported from the Grid by the Project through 110 kV line ($EG_{im-110kV,y}$) and Electricity imported from the Grid by the Project through 10 kV backup line ($EG_{im-10kV,y}$) as below formula:</p> $EG_{net,y} = EG_y - EG_{im-110kV,y} - EG_{im-10kV,y}$
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:	Not applicable

Parameters available at validation stage:

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

Parameter title	Description	Data	Source
EF_{y^*}	Baseline emission factor of NCPG	1.0197	Notification on 2006 baseline emission factors for regional power

			grids in China, issued by China on 15/12/2006 /15/.
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* EF_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 revised registered PDD /3/ approved by UNFCCC on 27/12/2012.

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 6.0 and the revised monitoring plan. 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 4.4 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 Kangbao Wolongtushan 30 MW Wind Farm Project” (VCS Ref. No. 148).

The management of Hebei Construction Investment Zhangjiakou 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 registered PDD /3/, version 02 dated 15/01/2007 and the revised registered PDD /3/ approved on 27/12/2012.

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 and PD;
- the monitoring plan in the registered PDD is as per the applied methodology;
- the monitoring complies with 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 Kangbao Wolongtushan 30 MW Wind Farm Project” during the monitoring period 01/07/2012 to 29/09/2016 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 01/07/2012 to 29/09/2016 (divided into 5 vintage periods). 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)
2012	30,992	0	0	30,992
2013	61,634	0	0	61,634
2014	61,503	0	0	61,503
2015	61,759	0	0	61,759
2016	45,733	0	0	45,733
Total	261,621	0	0	261,621

APPENDIX 1: REFERENCE LIST

1. Monitoring report, Version 01, dated 20/08/2021; version 03.1, dated 23/11/2021
2. ER calculation spreadsheet
3. Registered CDM PDD, version 02, dated 15/01/2007;
Revised Registered CDM PDD, version 03, dated 20/09/2012
4. Validation report, No. 2006-2142, version 01, completed by DNV;
VCS Verification Report, version 01, completed on 28/08/2007 by SGS
5. VCS standard version 4.1, dated on 22/04/2021
6. Statement issued by project owner
7. Approved methodology ACM0002, version 6.0, dated 18/05/2006
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 Hebei Electric Power Research Institute
13. Accreditation certificates for Hebei Electric Power Research Institute issued by Quality and Technical Supervision Bureau of Hebei
14. Statement from Power Grid Company

- 15 Notification on 2006 baseline emission factors for regional power grids in China, issued by China on 15/12/2006