

VCS VERIFICATION OF HEBEI CHENGDE WEICHANG YUDAOKOU PASTURE 150MW WIND FARM PROJECT



Document Prepared By LGAI Technological Center, S.A.

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Summary:

LGAI Technological Center, S.A. (hereafter referred to as “Applus+ LGAI”) has been commissioned by Goldchina Consultancy International Co., Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Hebei Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project” (UNFCCC Ref. No. 3476, VCS Ref. No. 892, hereafter referred to as “the project activity”) reported in the monitoring report /1/ during monitoring period 01/09/2011 to 31/12/2012.

The project activity has been validated by BUREAU VERITAS CERTIFICATION (BV) based on the CDM PDD /3/ version 0.3 dated 08/02/2010 (another PRC has been made, then the version of final PDD is 0.4) and reported in the validation report No. BVC/CHINA-VAL/0193/2009 /4/, version 03, completed on 10/01/2011. The project activity was registered as a CDM project activity on 17/01/2011 which is available at <http://cdm.unfccc.int/Projects/DB/BVQ11268203473.52/view>. The project was registered as a VCS project activity later which is available at http://www.vcsprojectdatabase.org/#/project_details/892.

The project activity is a wind farm project located in Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei Province, P. R. China., which is to use wind resource for electricity generation. The installed capacity of the project activity is 150 MW, consisting of 100 sets of wind turbines with unit capacity of 1.5 MW. The average annual power delivered to the grid by the project is expected to be 312,700 MWh. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants North China Power Grid (NCPG). It's estimated that the proposed project could achieve GHG emission reductions of 329,852 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+ LGAI confirms the following has been reviewed:

- Monitoring plan included in the registered CDM PDD /3/, version 0.4, dated 23/10/2012 and the VCS Project Description /4/;
- Validation report No. BVC/CHINA-VAL/0193/2009 /4/, version 03, completed on 10/01/2011;
- Approved methodology, ACM0002 /7/, version 10.0, dated 11/06/2009;
- VCS standards and guidance, 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+ LGAI confirms that the project is implemented in accordance with the registered and revised CDM PDD /3/. The monitoring plan complies with the applied methodology ACM0002 /7/ version 10.0 and the monitoring has been carried out in accordance with the monitoring plan in the registered CDM 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+ LGAI confirms that the implementation of the project has resulted in 451,689 tCO₂e emission reductions during period 01/09/2011 to 31/12/2012.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. has been commissioned by Goldchina Consultancy International Co., Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Hebei Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project” (UNFCCC Ref. No. 3476, VCS Ref. No. 892) reported in the Monitoring Report /1/ during monitoring period 01/09/2011 to 31/12/2012.

LGAI Technological Center, S.A. 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 pre-registered CDM project activity during the monitoring period from the date when the project started to operate until the date when the project was actually registered as a CDM project activity by the CDM-EB. 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 Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project” in China for the period 01/09/2011 to 31/12/2012.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered CDM PDD and VCS Project Description (VCS-PD), the Project's baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 3 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, 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 Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project
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UNFCCC reference number	3476
VCS reference number	892
Project Participants	Hebei Construction Investment New Energy Co., Ltd. (Project Owner, host country, P. R. China); Goldchina Consultancy International Co., Ltd. (VER Buyer, P. R. China)
Location of the project	Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei Province, P. R. China. Geographic coordinates: longitude 116°57' 05" E and latitude 42°11'21" N
Project start date	Construction start date: 11/05/2009 Operation start date: 27/11/2010
Date of registration as CDM project	17/01/2011
Version of registered CDM PDD	Version 0.3, dated 08/02/2010 Version 0.4 dated 23/10/2012 (A PRC has been made)
Monitoring period	01/09/2011 to 31/12/2012
First monitoring report	Version 01, dated 17/02/2016
Final monitoring report	Version 02, dated 10/04/2016
Applied Methodology/Version	ACM0002, version 10.0, dated 11/06/2009
Scope/Technical Area	1/1.2

The project activity is a wind farm project located in Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei Province, P. R. China., which is to use wind resource for electricity generation. The installed capacity of the project activity is 150 MW, consisting of 100 sets of wind turbines with unit capacity of 1.5 MW. The average annual power delivered to the grid by the project is expected to be 312,700 MWh. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants North China Power Grid (NCPG). It's estimated that the proposed project could achieve GHG emission reductions of 329,852 tCO₂e annually.

The project activity has been validated by BUREAU VERITAS CERTIFICATION (BV) based on the CDM PDD /3/ version 0.3 dated 08/02/2010 (another PRC has been made, then the version of final PDD is 0.4) and reported in the validation report No. BVC/CHINA-VAL/0193/2009 /4/, version 03, completed on 10/01/2011. The project activity was registered as a CDM project activity on 17/01/2011 which is available at <http://cdm.unfccc.int/Projects/DB/BVQI1268203473.52/view>. The project was registered as a VCS project activity later which is available at http://www.vcsprojectdatabase.org/#!/project_details/892.

2 VERIFICATION PROCESS

2.1 Method and Criteria

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

Applus+ LGAI 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+ LGAI 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 section 2.1.1 of the report.

Assessment team

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, Applus+ LGAI has composed a project assessment team in accordance with the appointment rules in Applus+ LGAI. The composition of assessment team has to be approved by the Applus+ LGAI 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 (T)
- Technical Experts (E)

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

Technical Reviewer:

- Meng (Simon) Shen

Hanshen (Denny) Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is a lead auditor appointed by Applus+ LGAI 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+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

Meng (Simon) Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI 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+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 3.5 years.

2.2 Document Review

The VCS monitoring report /1/ version 01 dated 17/02/2016, version 02 dated 10/04/2016 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition the registered CDM PDD /3/ version 0.4 dated 23/10/2012 and VCS PD /4/ version 03 dated 31/05/2012 in particular the baseline estimations and the monitoring plan, and the registered CDM validation report /4/ version 03 dated 10/01/2011 for the project, 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	Function	Organization
Mr. Cao Wanpeng	Engineer	Hebei Construction Investment New Energy Co., Ltd.
Mr. Dong Xuejun	Engineer	Hebei Construction Investment New Energy Co., Ltd.
Ms. Xu Hongmei	Project Manager	Goldchina Consultancy International Co., Ltd.

Mr. Li Guanghu	Villager	Villager
Ms. Liu Lin	Villager	Weichang Manchu & Mongolia Autonomous County
Mr. Zhou Fenggeng	Villager	Weichang Manchu & Mongolia Autonomous County

2.4 Site Inspections

The assessment team performed the on-site validation and verification on 23-24/03/2016. The interviewed personnel 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.

2.5.1 Forward Action Requests

None FAR was raised during the verification process.

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 CDM PDD /3/ and validation report /4/ at UNFCCC website <http://cdm.unfccc.int/Projects/DB/BVQI1268203473.52/view>, it was validated that the project has been registered as a CDM project on 17/01/2011 with reference No. 3476. Also after checking http://www.vcsprojectdatabase.org/#/project_details/892, it is confirmed that the project also registered as a VCS project. The project does not participate in the other emissions trading program.

During the period from 17/01/2011 to 16/01/2018, the project would claim for other CERs or VCUs, however CERs and VCUs would not been claimed together in the same period. The ERs generated during 17/01/2011 to 31/08/2011 has been issued in terms of CERs. Also ERs generated from pre-CDM period 27/11/2010 to 16/01/2011 has been issued in terms of VCUs.

Therefore, Applus+ LGAI 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 description.

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/ and VCS PD /4/ are in place and the PP has operated the project as per the registered CDM PDD /3/ and VCS PD /4/. The installed capacity of the project is 150 MW, consisting of 100 sets of wind turbines with unit capacity of 1.5 MW. The electricity generated is transmitted to a 220 kV Substation then supplied to NCPG via Hebei Power Grid confirmed by checking Power Purchase Agreement (PPA) /17/ signed by the project owner and power grid company. The project activity was expected to supply 312,700 MWh of electricity to the grid. The construction of the project started on 11/05/2009, the first wind turbine of the project has been put into operation on 27/11/2010 and the commissioning time of all 100 wind turbines was 08/01/2011 verified by checking CDM validation report No. BVC/CHINA-VAL/0193/2009 /4/, version 03, completed on 10/01/2011 issued by BUREAU VERITAS CERTIFICATION and site visit interview. 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 technical parameters have been verified with the nameplates /11/ as well as the technical specification /10/ as below:

Equipment	Quantity	Type	Technical Parameters
Turbine	100 sets	SL1500/77	Rated Capacity: 1.5 MW Number of blades: 3 Fan Diameter: 77.4 m Swept Area: 4,657 m ² Cut in Wind Speed: 3 m/s Rated Wind Speed: 12 m/s Cut out Wind Speed: 20 m/s
Generator	100	Asynchronous bidirectional	Rated Capacity: 1.5 MW Rated Voltage: 690 V Rated Frequency: 50 Hz
Main Transformer	2	SFZ10-100000/220	Rated Frequency: 50Hz Rated Voltage High Side: 242kV Rated Voltage Low Side: 38.5kV

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PDD, the actual emission reductions (451,689 tCO₂e) are 2.42% higher than what is stated in the registered CDM PDD (i.e. 441,007 tCO₂e, equals to annual emission reductions, 329,852 tCO₂e multiplied by the actual operational days (488 days) then divided by 365 days) which should be considered in the normal variation. 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 Accuracy of GHG Emission Reduction and Removal Calculations

The monitoring has been carried out in accordance with the monitoring plan contained in the registered CDM 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 power supplied to the grid in year y
Source of data used:	<u>Raw data source:</u> 428,202.720 (Calculated as below) $EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10kV,y}$ <u>Method to obtain raw data:</u> Calculated as below: $EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10kV,y}$
Means of verification/Comments:	<u>Calibration:</u> Not applicable <u>Qualification/accreditation/authorization:</u> Not applicable <u>Completeness of data:</u> Not applicable <u>Verification of data:</u>

	Not applicable
Cross-check	Not applicable

Data / Parameter:	EG _{s,y}																								
Data unit:	MWh																								
Description:	Power supplied to the grid in year y																								
Source of data used:	<u>Raw data source:</u> The parameter is continuously measured by M1 (Main meter) and M2 (backup meter) and monthly recorded 429,201.960 (MRR /12/ and ETN /13/) <u>Method to obtain raw data:</u> At 24:00 of the last day of every month, the raw data of meter reading of M1 and M2 (bidirectional) at the output of the on-site 220kV transformer substation are recorded by the project owner and form Monthly Reading Record (MRR /12/), and then send to the power grid company, after the confirmation of power grid company, the power grid company will issue ETNs /13/. Then the conservative value between the Monthly Reading Record /12/ and ETNs /13/ issued by the power grid company would be used for ER calculation. All these have been confirmed by site visit.																								
Means of verification/Comments:	<u>Calibration:</u> The calibration information for M1 and M2 is shown as below by verified the calibration certificates /14/: <table><tr><th>Meter</th><th>Model</th><th>Serial Number</th><th>Accuracy</th></tr><tr><td>M1</td><td>SL7000</td><td>36013942</td><td>0.2s</td></tr><tr><td>M2</td><td>SL7000</td><td>36014056</td><td>0.2s</td></tr><tr><td colspan="2">Calibration Date</td><td colspan="2">Validity Date</td></tr><tr><td colspan="2">15/03/2011</td><td colspan="2">14/03/2012</td></tr><tr><td colspan="2">06/03/2012</td><td colspan="2">05/03/2013</td></tr></table> The M1 and M2 was calibrated by Zhangjiakou Electric Power Company Limited Power Energy Metering Centre.	Meter	Model	Serial Number	Accuracy	M1	SL7000	36013942	0.2s	M2	SL7000	36014056	0.2s	Calibration Date		Validity Date		15/03/2011		14/03/2012		06/03/2012		05/03/2013	
Meter	Model	Serial Number	Accuracy																						
M1	SL7000	36013942	0.2s																						
M2	SL7000	36014056	0.2s																						
Calibration Date		Validity Date																							
15/03/2011		14/03/2012																							
06/03/2012		05/03/2013																							

	<u>Qualification/accreditation/authorization:</u> Zhangjiakou Electric Power Company Limited Power Energy Metering Centre was accredited by Hebei Province Bureau of Quality and Technical Supervision /15/ <u>Completeness of data:</u> MRR /12/ issued by the project owner and ETNs /13/ issued by the power grid company has been verified and the data is complete and covering the whole monitoring period. <u>Verification of data:</u> As verified by the assessment team, the data provided in the Monitoring Report is consistent with the ER Calculation Spreadsheet /2/ by checking MRR /12/ issued by the project owner and ETNs /13/ issued by the power grid company.
Cross-check	MRR /12/ is crosscheck with ETNs /13/, the conservative value would be used for calculation.

Data / Parameter:	PR _{g,y}
Data unit:	MWh
Description:	The electricity use of power plant supplied by the grid via the 220 kV line in year y
Source of data used:	<u>Raw data source:</u> The parameter is continuously measured by M1 (Main meter) and M2 (backup meter) and monthly recorded 999.240 (MRR /12/ and ETN /13/) <u>Method to obtain raw data:</u> At 24:00 of the last day of every month, the raw data of meter reading of M1 and M2 (bidirectional) at the output of the on-site 220kV transformer substation are recorded by the project owner and form Monthly Reading Record (MRR /12/), and then send to the power grid company, after the confirmation of power grid company, the power grid company will issue ETNs /13/. Then the conservative value between the Monthly Reading Record /12/ and ETNs /13/ issued by the power grid company would be used for ER calculation. All these have been confirmed by site visit.
Means of	<u>Calibration:</u>

verification/Comments:	The calibration information for M1 and M2 is shown as below by verified the calibration certificates /14/:			
	Meter	Model	Serial Number	Accuracy
	M1	SL7000	36013942	0.2s
	M2	SL7000	36014056	0.2s
	Calibration Date		Validity Date	
	15/03/2011		14/03/2012	
	06/03/2012		05/03/2013	
	The M1 and M2 was calibrated by Zhangjiakou Electric Power Company Limited Power Energy Metering Centre.			
	<u>Qualification/accreditation/authorization:</u>			
	Zhangjiakou Electric Power Company Limited Power Energy Metering Centre was accredited by Hebei Province Bureau of Quality and Technical Supervision /15/			
	<u>Completeness of data:</u>			
	MRR /12/ issued by the project owner and ETNs /13/ issued by the power grid company has been verified and the data is complete and covering the whole monitoring period.			
	<u>Verification of data:</u>			
	As verified by the assessment team, the data provided in the Monitoring Report is consistent with the ER Calculation Spreadsheet /2/ by checking MRR /12/ issued by the project owner and ETNs /13/ issued by the power grid company.			
Cross-check	MRR /12/ is crosscheck with ETNs /13/, the conservative value would be used for calculation.			

Data / Parameter:	PR _{10kV,y}
Data unit:	MWh
Description:	The electricity imported by the project from the grid via the 10 kV line
Source of data used:	<u>Raw data source:</u> The parameter is continuously measured by M3 and monthly recorded

	0 (Statement issued by power grid company regarding 10kV /18/) <u>Method to obtain raw data:</u> At 00:00 of the last day of every month, the raw data of meter reading of M3 (bidirectional) installed on the 10kV line of the project site are recorded by the project owner and form Monthly Reading Record (MRR /12/), and then send to the power grid company, after the confirmation of power grid company, the power grid company will issue ETNs /13/. However, according to Statement issued by power grid company regarding 10kV /18/, during this monitoring period, no electricity was imported through 10kV transmission line.																				
Means of verification/Comments:	<u>Calibration:</u> The calibration information for M3 is shown as below by verified the calibration certificates /14/: <table><tr><th>Meter</th><th>Model</th><th>Serial Number</th><th>Accuracy</th></tr><tr><td>M3</td><td>DTS</td><td>2103348</td><td>1.0</td></tr><tr><th colspan="2">Calibration Date</th><th colspan="2">Validity Date</th></tr><tr><td colspan="2">15/03/2011</td><td colspan="2">14/03/2011</td></tr><tr><td colspan="2">06/03/2012</td><td colspan="2">05/03/2013</td></tr></table> The M3 was calibrated by Zhangjiakou Electric Power Company Limited Power Energy Metering Centre. <u>Qualification/accreditation/authorization:</u> Zhangjiakou Electric Power Company Limited Power Energy Metering Centre was accredited by Hebei Province Bureau of Quality and Technical Supervision /15/ <u>Completeness of data:</u> Statement issued by power grid company regarding 10kV /18/ issued by the power grid company has been verified and the data is complete and covering the whole monitoring period. <u>Verification of data:</u> As verified by the assessment team, the data provided in the Monitoring Report is consistent with the ER Calculation Spreadsheet /2/ by Statement issued by power grid company regarding 10kV /18/ issued by the power grid company.	Meter	Model	Serial Number	Accuracy	M3	DTS	2103348	1.0	Calibration Date		Validity Date		15/03/2011		14/03/2011		06/03/2012		05/03/2013	
Meter	Model	Serial Number	Accuracy																		
M3	DTS	2103348	1.0																		
Calibration Date		Validity Date																			
15/03/2011		14/03/2011																			
06/03/2012		05/03/2013																			
Cross-check	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 _{grid,CM,y}	Baseline emission factor of NCPG in the monitoring period.	1.05485	Notification on 2008 baseline emission factors for regional power grids in China, issued by China on 18/07/2008 /17/.

4.3 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 revised CDM PDD /3/.

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 10.0 and the monitoring plan contained in the registered CDM 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 4.2 of the report.

4.4 Non-Permanence Risk Analysis

Sufficient evidences covering the full monitoring period in the required frequency are available to verify the figures stated in the final monitoring report. The source of the evidences has been discussed above. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the assessment team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

The assessment team confirmed the completeness, accuracy and reliability of the evidences available during the monitoring period, thereby the determination of GHG emission reductions or removals are appropriate.

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the CDM Monitoring Procedure /8/. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the CDM team regularly. The responsibility of each function is consistent with the monitoring plan in the registered CDM PDD /3/.

The members involved in the CDM team have been trained with the CDM monitoring related issues. During the site visit the assessment team interviewed some personnel of the training issues and considered that the personnel are competent. Personal certificates of the plant operation have also been checked by the assessment team.

The information flow of each parameter has been verified by the assessment team via interviewing with responsible personnel and checking with the CDM Monitoring Procedure /8/. The details of information flow of each parameter are described above.

All the data and documents, either hard copies or electric copies, will be kept for two years after the end of the last crediting period or the last issuance of CERs for this Project, whichever occurs later.

5 VERIFICATION CONCLUSION

Applus+ LGAI has been commissioned by Goldchina Consultancy International Co., Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Hebei Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project” (UNFCCC Ref. No. 3476, VCS Ref. No. 892).

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 CDM PDD /3/, version 0.4, dated 23/10/2012 and the VCS Project Description /4/ dated 31/05/2012.

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

In our opinion, the GHG emission reductions for “Hebei Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project” during the monitoring period 01/09/2011 to 31/12/2012 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:

Reporting period: From 01/09/2011 to 31/12/2012 (divided into 2 vintage periods). Verified GHG emission reductions or removals in the above reporting period:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage (tCO ₂ e)	Emission Reductions (tCO ₂ e)
01/09/2011 to 31/12/2011	70,920	0	0	70,920
01/01/2012 to 31/12/2012	380,769	0	0	380,769
Total	451,689	0	0	451,689

APPENDIX 1: REFERENCE LIST

1. Monitoring report, Version 01, dated 17/02/2016; Version 02, dated 10/04/2016
2. ER calculation spreadsheet
3. Registered CDM PDD, Version 0.3, dated 08/02/2010; Version 0.4, dated 23/10/2012
4. VCS Project Description, Version 03 dated 31/05/2012
5. Validation report, No. BVC/CHINA-VAL/0193/2009, version 03, completed by BUREAU VERITAS CERTIFICATION on 10/01/2011
6. VCS standard version 3.5, dated on 25/03/2015
7. Approved methodology ACM0002, version 10.0, dated 17/09/2010
8. Business license of Hebei Construction Investment New Energy Co., Ltd. effective from 17/07/2006 to 16/07/2026
9. CDM Monitoring procedure
10. Technical specification of the equipment
11. Nameplate of the equipment
12. Daily electricity meter reading records of meters covering the monitoring period
13. Electricity Transaction Notes covering the monitoring period
14. Calibration certificates of meters covering the whole monitoring period issued by Zhangjiakou Electric Power Company Limited Power Energy Metering Centre
15. Accreditation certificate of Zhangjiakou Electric Power Company Limited Power Energy Metering Centre valid from 14/02/2012 to 13/02/2015
16. Notification on 2008 baseline emission factors for regional power grids in China issued by China on 18/07/2008
17. Power Purchase Agreement (PPA) signed by project owner and power grid company
18. Statement issued by power grid company regarding 10kV