VERIFICATION REPORT FOR

SHANDONG WENDENG ZHANGJIACHAN WIND FARM PROJECT

中国建材检验认证集团股份有限公司
China Building Material Test & Certification Group Co., Ltd.

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Summary:

China Building Material Test and Certification Group Co., Ltd (CTC), commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd., has performed the second periodic verification of the Shandong Wendeng Zhangjiachan Wind Farm Project (hereafter referred to as “the Project”) covering the monitoring period from 01/03/2012 to 31/12/2015, on the basis of requirements of Verified Carbon Standard (VCS) Version 4.0.

The Project involves the installation of 58 wind turbines with capacity of 850 kW each, which amount to a total installed capacity of 49.3MW in Yishui County, Wendeng City, Shandong Province, P. R. China. It is constructed and operated by Wendeng Zhangjiachan Wind Power Co., Ltd. The estimated annual net electricity generation and average annual emission reductions of the proposed project are 90,997MWh and 84,709 tCO_2e, respectively. The electricity generated from the project will be sold to North China Power Grid (NCPG). The proposed project will achieve obvious greenhouse gas (GHG) emission reductions through the displacement of electricity delivered by NCPG which is a fossil-fuel dominated grid.

The project has been registered as VCS project (VCS Ref. No 1188) under Verified Carbon Standard (VCS) Version 3.4 using approved CDM methodology ACM0002 “Consolidated methodology for grid-connected electricity generation from renewable sources” (Version 12.2.0) with the crediting period from 26/02/2011 to 29/02/2012. And it is applied for the crediting period deviation from 26/02/2011-29/02/2012 to 26/02/2011-25/02/2021. And it was also registered as a CDM project on 17/01/2012 (ref.5655) with the first renewable crediting period from 01/03/2012 to 28/02/2019 and the second crediting period from 01/03/2019 to 28/02/2026. And no Certified Emission Reductions (CERs) have been requested. This is in accordance to the eminent VCS Guidance for projects that are registered in two GHG programs.

The verification process includes three phases:

1) Desk review of documents;

2) Remote video assessment and follow-up interviews;

3) Issuance of the final verification report and opinion.

CTC appointed a qualified verification team in accordance with internal procedures to perform the verification.

In the course of the verification, one Corrective Action Request (CAR) and three Clarification Request (CL) were raised.

As a result of this verification, the verification team confirms that:

-All operations of the Project are implemented and installed as planned and described in the validated Project Description;

-The registered monitoring plan is in accordance with the applied approved CDM methodology ACM0002 (version 12.2.0) – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

-The implementation of monitoring is in compliance with the registered monitoring plan.

-The monitoring system is in place and functional;

-The installed equipment for measuring parameters required for calculating emission reductions are calibrated appropriately.

Based on the information observed and evaluated, the verification team confirms that the emission reductions are correctly calculated in the MR (Version 02 dated 18/05/2021).

In conclusion, it is CTC's opinion that the project activity "Shandong Wendeng Zhangjiachan Wind Farm Project", as described in the Monitoring Report (Version 02), meets all relevant requirements for VCS and all relevant host Party criteria. Hence, CTC is able to certify that the emission reductions from the Project during the monitoring period from 01/03/2012 to 31/12/2015 amount to 335,659tCO_2e, and requests issuance of the equivalent VCUs.

The emission reductions of the Project in the separated years are listed below,

Year	BE_y (tCO_2e)	PE_y (tCO_2e)	LE_y (tCO_2e)	ERs (tCO_2e)
2012 (01/03/2012 - 31/12/2012)	77,270	0	0	77,270
2013 (01/01/2013- 31/12/2013)	94,836	0	0	94,836
2014 (01/01/2014- 31/12/2014)	81,653	0	0	81,653
2015 (01/01/2015- 31/12/2015)	81,900	0	0	81,900
Total	335,659	0	0	335,659

1 INTRODUCTION

1.1 Objective

CGN Carbon Asset Management (Beijing) Co., Ltd. has commissioned CTC to verify and provide a verification statement of the emission reductions of the Shandong Wendeng Zhangjiachan Wind Farm Project (hereafter referred to as "the Project") which is located in Wendeng City, Shandong Province, People's Republic of China.This monitoring period is the second monitoring period of the first crediting period from 01/03/2012 to 31/12/2015, on the basis of requirement of VCS Standard (Version 4.0) /5/ as well as criteria to provide for consistent project operations, monitoring and reporting.

CTC as the validation/verification body (VVB) of the Project has been accredited as a CDM-DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2013 /10/.

Verification of emission reductions from a project activity is the independent review and ex post determination by VVB of the monitored reductions in GHG emissions during the reported monitoring period. The objectives of verification are to:

a) Ensure that the project activity has been implemented and operated as per the registered VCS project description (VCS-PD) /3/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;

b) Ensure that the monitoring report and other supporting documents provided are complete in accordance with the latest applicable version of Registration and Issuance Process /9/ and in accordance with the additional requirements stated by the VCS Association (VCSA);

c) Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology /6/;

d) Evaluate the data recorded and stored as per the monitoring methodology /6/, and the correctness of the calculation of emission reductions for the monitoring period.

1.2 Scope and Criteria

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the CTC. The verification scope covers the relevant documents (e.g. the VCS-PD /3/, the monitoring plan, the VCS monitoring report (VCS-MR) /1/, the emission reduction calculation spreadsheet /2/, supporting documents available to be verifier and information collected through performing interviews and during the on-site assessment, VSAS's requirements publicly available, relevant rules, including the host

country legislation to be independently reviewed. The project geographical locations to be visited on-site, the related project local stakeholders to be interviewed with, and processes that are necessary to acquire objective evidence for the evaluation for the project compliance to the VCS requirements and associated interpretations.

The above verification activities are conducted according to the VCS requirements. In doing so, the principles of accuracy and completeness, relevance, reliability and credibility were followed.

The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project.

1.3 Level of Assurance

CTC has undertaken a reasonable assurance engagement in accordance with VCS Standard (Version 4.0) /5/. It requires a reasonable level of assurance in verification that GHG assertions are free of material errors, omissions and misrepresentations. The verification conclusion is based on the VCS-PD /3/, VCS-MR /1/, and supporting evidences made available to the verifier and information collected through performing interviews and during the on-site inspection.

1.4 Summary Description of the Project

Shandong Wendeng Zhangjiachan Wind Farm Project (hereinafter referred to as the proposed project) is to utilize wind resources for electricity generation through the construction of a wind farm in Wendeng County, Shandong Province, P. R. China. The proposed project involves the installation of 58 wind turbines with capacity of 850 kW each, which amount to a total installed capacity of 49.3MW. The proposed project is constructed and operated by Wendeng Zhangjiachan Wind Power Co., Ltd. The estimated annual net electricity generation and average annual emission reductions of the proposed project are 90,997MWh and 84,709 tCO2e, respectively. The electricity generated from the project will be sold to North China Power Grid (NCPG). The proposed project will achieve obvious greenhouse gas (GHG) emission reductions through the displacement of electricity delivered by NCPG which is a fossil-fuel dominated grid.

- The project has been registered as VCS project with Ref. VCS1188 and the current verification has been finalized for monitoring period from 01/03/2012 to 31/12/2015. This is the second monitoring period of first crediting period. The total emission reductions achieved in this monitoring period (01/03/2012-31/12/2015) are 335,659 tCO2e.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using CTC internal procedures. CTC verified the project against the requirements set in VCS /5//7//8//9/, and other relevant VCS requirements. The following sections outline each step in details.

2.2 Document Review

A desk review of the registered VCS-PD /3/, the validation report /4/, the previous verification reports /18/, the applied monitoring methodology /6/, the VCS monitoring report (VCS-MR) /1/ and supporting documents was conducted by the verification team. The aim of the desk review of the documentation was to verify the completeness of the data and the information presented, to carry out the compliance check of the VCS-MR /1/ with respect to the monitoring plan and the applied methodology /6/. Particular attention was given to the quality of the metering equipment including calibration requirements, the monitored data and its evidence, and the emission reduction calculation. The evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions was also conducted.

Appendix A of this report contains a complete list of all documents and proofs reviewed by the verification team

2.3 Interviews

Due to the COVID-19, it is impossible to conduct on-site audit work. The verification team used network communication channels and information tools, i.e. video and teleconference platforms, telephone and email, to obtain monitoring records, the operation status and the wind power generators and monitoring meters installed at the project site on 14/05/2021.

The verification team verified that the actual implementation of the Project was as described in the VCS-PD /3/ and VCS-MR /1/. This included the review of the project operation based on the evidence of video observation and presented documents.

During the assessment, the verification team has interviewed with responsible personnel of the project owner and the consultancy. The topics and persons interviewed are provided in the table below.

Date: 14/05/2021	
Interview topics	**Interviewed Organizations and persons**
--The status of VCS project implementation. -- Any changes of the VCS project. -- The project on-site inspection —The evidences of construction status and operation of key equipment, parameters monitoring and data processing activities, monitor equipment and calibration. -- Monitoring data. --Quality Management; organizational structure, responsibilities and competencies; Internal QA/QC Management procedures and document control. --Compliance with National Laws and Regulations.	**Wendeng Zhangjiachan Wind Power Co., Ltd.** Mr. Han Chuan
-- Preparation of Monitoring Report. -- Compliance of the monitoring plan with the monitoring methodology --Compliance of monitoring with the monitoring plan -- Assessment of data and calculation of GHG emission reductions	**CGN Carbon Asset Management (Beijing) Co., Ltd.** Ms. Ji Huiying

2.4 Site Inspections

The video assessment on 14/05/2021 involved following activities,

1) An assessment of the implementation and operation of the project activity as per the VCS-PD /3/;

2) A review of information flows for generating, aggregating and reporting the monitoring parameters;

3) Interviews with relevant personnel of the project owner to confirm that the operational and data collection procedures are implemented in accordance with the approved monitoring plan;

4) A cross-check between information provided in the monitoring report /1/ and data from other sources such as operational records or similar data sources;

5) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the updated VCS-PD /3/ and the selected methodology /6/;

6) A review of calculations and assumptions made in determining the GHG data and emission reductions;

7) An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

During the verification of a project activity, to identify issues that need to be further elaborated upon, researched or added to in order to confirm that the project activity meets the VCS requirements and can achieve credible emission reductions, the verification team will issue a Corrective Action Request (CAR), a Clarification Request (CL) or a Forward Action Request (FAR) depending on different situations.

The objective of this phase of the verification is to resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to CTC's positive conclusion on the GHG emission reduction calculation.

Findings established during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

A Corrective Action Request (CAR) will be raised if one of the following occurs:

(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 registered 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.

A Clarification Request (CL) will be raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A Forward Action Request (FAR) will be raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

Three CL and one CAR have been raised during the verification.

2.5.1 Forward Action Requests

No Forward Action Requests were raised during the verification.

2.6 Eligibility for Validation Activities

The VVB of "China Building Material Test and Certification Group Co., Ltd" commissioned by the project participant is one of eligible VVBs listed on the VCS website (https://verra.org/project/china-building-material-test-certification-group-co-ltd-ctc/), and holds the accreditation for validation/verification for the sectoral scope: "1. Energy (renewable/non-renewable)", to which the project activity belongs. Therefore, CTC is eligible for the validation/verification of the project activity.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The verification team has checked the official website of other GHG Programs like CDM, GS VER, and is able to confirm that the Project is not included in any GHG programs or any other mechanisms that include GHG allowance trading except VCS and CDM. The net GHG emission reductions generated by the Project during this monitoring period have not been used for compliance under any emission trading programs or mechanisms. The Project have not sought or received any other form of GHG-related environmental credit during this monitoring period.

The project has been registered as CDM project and the registration number is 5655, the first CDM crediting period is form 01/03/2012 to 28/02/2019, and the crediting period has been successfully renewed on 29/04/2019 with the 2nd CDM crediting period from 01/03/2019 to 28/02/2026. The project has been registered as VCS project with Ref. VCS1188 under VCS Standard Version 3.4 and completed validation before 19/03/2020. Furthermore, VCUs of 63,369tCO_2e have been issued for the monitoring period from 26/02/2011- 29/02/2012. It means the gap validation for the project's compliance with the VCS rule has been implemented in the first monitoring period and no further validation is required.

Therefore, the Verification Team confirms that the project is eligible to participate under the VCS Program.

3.2 Methodology Deviations

No deviation from the methodology is needed to be submitted.

3.3 Project Description Deviations

The first renewable crediting period of the project is requested to update from 26/02/2011-29/02/2012 to 26/02/2011-25/02/2021.

In the registered VCS-PD, the crediting period was set as from 26/02/2011 to 29/02/2012. The project is registered under VCS Standard Version 3.4 and completed validation before 19/03/2020. Thus, it remains eligible to apply the crediting period requirements under VCS Standard Version 3.4 which is allowable for a maximum of ten years and could be renewed twice. So the first renewable crediting period of the project has been determined as 26/02/2011 to 25/02/2021.

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

However, as the project is also registered as a CDM project with a seven year twice renewable crediting period and furthermore, the project has the lifetime of 20 years, it is not eligible for VCU issuance beyond 25/02/2031.

The verification team confirmed the deviation of the crediting period is correctly and in compliance with the VCS regulation.

Through document review and followed interviews, the verification team confirms that there are no project description deviations according to the registered VCS-PD except the crediting period /3/.

3.4 Grouped Project

Not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

4.1.1 Project Implementation in accordance with the VCS PD

CTC has performed a remote video assessment and found that the Project has been put into operation and the electricity generated is supplied to NCPG according to the signed Power Purchase Agreement (PPA) /19/. 58 sets of WTGs with a unit capacity of 0.85MW, providing a total installed capacity of 49.3MW as described in the registered VCS-PD have been in operation. The Project is located at the Wendeng City, Shandong Province, P. R. China and the geographical coordinates are verified by GPS system as east longitude from 122.051944 E to 122.155278 E and north latitude from 37.093611 N to 37.181667 N.

The project was implemented and commissioned on 26/02/2011 when the first turbine was put into operation /3//4/. The actual implementation of the project during this verification period was verified in terms of nameplate capacities of each turbine and monitoring equipment.

As is shown in the diagram of the power connection system /3//19/, the electricity generated by the project is delivered to Xijiao Substation by 110kV transmission line, and finally delivered to NCPG.

All the monitoring system in operation period is consistent with the description in the registered VCS-PD. The control system at the power plant is automated and assures continuous operation, including monitoring on malfunction of equipment. The verification team confirmed through visual inspection and document review that no serious malfunction happened and the plant was under a normal operation as expected in this monitoring period.

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. 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 as follows:

- Achieving obvious GHG emission reductions by avoiding CO_2 emissions, as grid-connected fossil fuel-fired power dominates in the NCPG, and avoiding pollutants emission, such as sulfur dioxide and dust, brought by fossil fuel combustion

- Providing job opportunities for local people during both the construction and operational period and improving infrastructure in and around the project area due to project activities.

- Improving the grid frequency and availability of electricity to the local stakeholders. This attracts new opportunities for industries and economic activities to be setup in the area thereby resulting in greater local employment, ultimately leading to overall development. Furthermore, the project will contribute to local government with more tax revenues (about 4.0 million per year).

According to the information collected during remote video assessment and the relevant evidence provided by project owner, CTC can confirm that the project was implemented in accordance the VCS-PD /3/.

4.1.2 Compliance of monitoring with the monitoring plan

The verification team has assessed the implementation of monitoring by the project owner against the registered monitoring plan and found all the parameters have been monitored in compliance with the registered monitoring plan.

A short summary on the verification of every parameter listed in the monitoring plan and used for emission reduction calculation is provided below:

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in the monitoring plan of PD):	**$EG_{facility,y}$** Quantity of net electricity generation supplied by the Project to the Grid in year y. Calculated based on the measurement results of $EG_{output,y}$ minus $EG_{import,y}$ **and** $EG_{im-spare,y}$ which were monitored by the electricity meters.
Measuring frequency:	Continuously measurement
Reporting frequency:	Monthly recorded
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	Electricity meters installed at the project site
Is accuracy of the monitoring equipment as stated in the PD? If the PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Yes. Accuracy level of monitoring meters is as described in the registered VCS- PD /3/. For details see Table 4-1.
Calibration frequency /interval:	Annually as per relevant sectoral standards in China
Is the calibration interval in line with the monitoring plan of the PD? If the PD does not specify the frequency of calibration, does the	Yes.

selected frequency represent good monitoring practise?	
Company performing the calibration:	See Table 4-1
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is (are) calibration(s) valid for the whole reporting period?	Yes. For details see Table 4-1.
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data has been cross-checked with the electricity sales receipts in line with the registered VCS-PD /3/.
How were the values in the monitoring report verified?	The verification details have been reported in Section 4.4 of this report.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable.

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of PD):	**$EG_{output,y}$** Electricity supplied to the grid by the Project in year y.
Measuring frequency:	Continuously measurement
Reporting frequency:	Monthly recorded
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	M1 installed at Xijiao 110kV substation; M2 installed at on-site 110kV substation
Is accuracy of the monitoring equipment as stated in the PD? If the PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Yes. Accuracy level of monitoring meters is as described in the registered VCS-PD /3/. For details see Table 4-1.
Calibration frequency /interval:	Periodically as per relevant sectoral standards in China
Is the calibration interval in line with the monitoring plan of the PD? If the PD does not specify the frequency of calibration, does the	Yes.

selected frequency represent good monitoring practise?	
Company performing the calibration:	See Table 4-1
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	Yes. For details see Table 4-5.
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data has been cross-checked with the electricity sales receipts in line with the registered VCS-PD.
How were the values in the monitoring report verified?	The verification details have been reported in Section 4.4 of this report.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable.

Monitoring Parameter Requirement	**Assessment/ Observation by the VVB**
Data / Parameter: (as in monitoring plan of PD):	**$EG_{import,y}$** Electricity delivered to the project by the grid in year y.
Measuring frequency:	Continuously measurement
Reporting frequency:	Monthly recorded
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	M1 installed at Xijiao 110kV substation; M2 installed at on-site 110kV substation
Is accuracy of the monitoring equipment as stated in the PD? If the PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Yes. Accuracy level of monitoring meters is as described in the registered PD /3/. For details see Table 4-1.
Calibration frequency /interval:	Periodically as per relevant sectoral standards in China
Is the calibration interval in line with the monitoring plan of the PD? If the PD does not specify the frequency of calibration, does the	Yes.

selected frequency represent good monitoring practise?	
Company performing the calibration:	See Table 4-1
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	Yes. For details see Table 4-1.
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data has been cross-checked with the electricity sales receipts in line with the registered VCS-PD.
How were the values in the monitoring report verified?	The verification details have been reported in Section 4.4 of this report.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable.

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of PD):	**$EG_{im\text{-}spare,y}$** Electricity purchased from the grid through a 10kV spare line in year y.
Measuring frequency:	Continuously measurement
Reporting frequency:	Monthly recorded
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Type of monitoring equipment:	M3 installed at a 10kV spare line
Is accuracy of the monitoring equipment as stated in the PD? If the PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?	Yes. Accuracy level of monitoring meters is as described in the registered VCS-PD /3/. For details see Table 4-1.
Calibration frequency /interval:	Periodically as per relevant sectoral standards in China
Is the calibration interval in line with the monitoring plan of the PD? If the PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise?	Yes.

Company performing the calibration:	See Table 4-1
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Yes.
Is(are) calibration(s) valid for the whole reporting period?	Yes. For details see Table 4-1.
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data has been cross-checked with the electricity sales receipts in line with the registered VCS-PD.
How were the values in the monitoring report verified?	The verification details have been reported in Section 4.4 of this report.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	Not applicable.

Furthermore, the verification team has verified that the accuracy of measure of the monitoring equipment was set according to the requirements and all calibration procedures were carried out according to the monitoring plan and manufacturer specifications. The calibration information of the Project in this monitoring period has been listed in Table 4-1 below. The monitoring equipment has been installed in the project activity according to registered monitoring plan. In summary, the verification team is able to verify that the accuracy the monitoring equipment were set according to the registered monitoring plan and relevant sectoral standard of China.

Table 4-1 Calibration records of the meters /17/

Meter	Main meter M1	Backup meter M2	M3
Serial No.	370110001005067	1007036777000001	WY4D98135
Accuracy	0.5s	0.2s	2.0
Date of Calibration	26/02/2012 26/02/2013 26/02/2014 26/02/2015	27/02/2012 27/02/2013 27/02/2014 27/02/2015	27/02/2012 27/02/2013 27/02/2014 27/02/2015
Validity	From 26/02/2012 to 26/02/2016	From 27/02/2012 to 27/02/2016	

Calibration Entity: Electricity Measurement Center of Yantai Power Supply Company.

All required monitoring equipment are installed and operating procedures are implemented in an appropriate manner.

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

4.1.3 Remaining Issues from Previous Validation or Verification

This is the 2nd verification and the verification team can confirm that there were no any remaining issues from the validation and previous verification report /4/.

4.1.4 No Net Harm

The Project consists of 58 sets wind power turbines, using clean renewable energy to generate electricity. By checking the EIA summary, it is confirmed that the impact caused by the project on atmosphere, noise, electromagnetic pollution, water, and solid waste etc. is very little. There are no negative socio-economic impacts of the project. Also the EIA of the project has been approved by local government.

4.1.5 Local Stakeholder Consultation

Stakeholder Consultation Meeting of the project was held at Wendeng Detai Hostel on 21/11/2009 to guarantee the successful implementation of proposed project with the interest of stakeholder being taken into account. The project owner also distributed public participation questionnaires at the project location Zhangjiachan Town to collect advice and opinions on the proposed project from local stakeholders. The stakeholder meeting and survey showed that the proposed project receives strong support form the local community.

Communication mechanism has been established during this monitoring period, including informing the status and progress of the project through the bulletin board on the village committee, and collecting comments by the village committee's complaint book, publishing phone number of contact person, and collecting their comments and suggestions actively every year. There are no negative comments received for the project during this monitoring period.

4.2 AFOLU-Specific Safeguards

Not applicable.

4.3 Accuracy of GHG Emission Reduction and Removal Calculations

4.3.1 Parameters and information flow

The parameters required by the monitoring plan and the way CTC has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values) in the monitoring reports are described below:

Parameters determined ex-ante:

$EF_{grid,CM,y}$, baseline emission factor

The baseline emission factor of the crediting period of the Project has been determined ex-ante in the registered VCS-PD /3/. The emission factor of 0.9309 tCO_2e/MWh used in the monitoring period has been verified against the registered PD and found consistent.

Parameters monitored ex-post:

$EG_{output,y}$	*Electricity supplied to the grid by the Project in year y.*
$EG_{import,y}$	*Electricity delivered to the project by the grid in year y.*
$EG_{im-spare,y}$	*Electricity purchased from the gird through a 10 kV spare line in the year y*
$EG_{Facility,y}$	*Quantity of net electricity generation supplied by the project to the Grid in year y.*

The net electricity supplied to the Grid by the proposed project will be calculated through electricity supplied by the project to the grid ($EG_{output,y}$) minus electricity purchased from the Grid ($EG_{import,y}$) and electricity purchased from the 10 kV spare line ($EG_{im-spare,y}$).

Therefore $EG_{facility,y}$ can be calculated as below:

$$EG_{facility,y} = EG_{output,y} - EG_{import,y} - EG_{im-spare,y}$$

The bi-directional electricity meter (M1) is installed on the substation to measure directly and continuously the electricity supplied to the grid by the project activity and the electricity purchased from the grid to the project site.

The back-up meter (M2) is installed in the 110kV substation in the wind farm. The reading of meter (M2) is carried out by the project owner just for cross check against reading of M1, taken the line loss into consideration.

A 10kV spare line is used for supplied electricity to the proposed project when the main power line fails to supply power. M3 is installed to measure the electricity imported via this line.

As described above, the meters have been installed in accordance with the registered VCS-PD. The verification team has checked the location of the meters against the diagram of power connection system and found them to be consistent.

$EG_{output,y}$ and $EG_{import,y}$ is measured by both main bidirectional meter M1 and bidirectional back up meter M2 in accordance with national regulations. During this monitoring period (01/03/2013 to 31/12/2015), the 24:00 on the last but five of every month in 2012 is determined as the settlement time for power supplied to the grid and the 24:00 on the last day of every month from 2013/15/.

The grid company issues the monthly Electricity Transaction Notes (ETNs) based on the readings of M1 to the project entity/16/. The measurement results of $EG_{output,y}$ measured with main meter M1 and backup meter M2 and electricity supply values on ETNs are cross-checked against each other. The measurement results of M1 and the monthly ETNs are considered as a basis for emission reductions calculation. For the period 26/02/2012~29/02/2012, separate sales receipts are issued by the grid company.

The electricity sales receipts /16/ to the wind power company issued by the local Grid Company have been used for cross-check of electricity output and import data.

Data in the monthly reading records were used to the report, through a cross check with the sales receipts, and the conservative values from electricity export and import were applied to calculate the net electricity supplied to the grid by the project. The data reported in the monitoring report and ERs calculation spreadsheet has been verified by the verification team. Supporting references and data required to determine the net electricity supplied to the grid by the project is found to be complete and transparent.

4.3.2 Assessment data and calculation

A complete set of data for the specified monitoring period is available.

The critical parameter used for the determination of the Emission Reductions is the net electricity supplied to the grid by the Project. The data pertaining to the above parameter are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 02.

As per the methodology ACM0002 Version 12.2.0 /6/ and the VCS-PD /3/, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y$$

Where,

ER_y	Emission reductions
BE_y	Baseline emissions
PE_y	Project emissions

Baseline emissions

The baseline emissions are the baseline emission reductions factor times the net electricity supplied to the grid. Therefore,

$$BEy = EF_{grid,\ CM,y} \times EG_{facility,y}$$

Where,

BE_y Baseline emissions in year y (tCO_2/yr)

$EF_{grid, CM,y}$ GHG emission factor of the NCPG, calculated ex ante in the registered CDM-PDD and VCS-PD as 0.9309 tCO_2e/MWh

$EG_{facility,y}$ Quantity of net electricity generation supplied to the grid by the Project in year y. (MWh)

The quantity net electricity generation supplied by the Project to the grid ($EG_{facility,y}$) can be calculated as:

$$EG_{facility,y} = EG_{output,y} - EG_{import,y} - EG_{im\text{-}spare,y}$$

Where,

$EG_{output,y}$ Electricity supplied to the grid by the project in year y

$EG_{import,y}$ Electricity delivered to the project by the grid in year y.

$EG_{import,y}$ Electricity purchased from the grid through a 10kV spare line in year y

Table 4-2: Electricity exchange with the grid via the main power line

Period		Electricity supplied to the grid by the project activity (MWh)			Electricity delivered to the project activity by the grid via the main power line (MWh)		
		Metered by M1	Evidenced by ETNs	Conservative values ($EG_{output,y}$)	Metered by M1	Evidenced by ETNs	Conservative values ($EG_{import,y}$)
		A	B	C=MIN(A, B)	D	E	F=MAX(D, E)
01/03/2012	26/03/2012	9384.65	9384.65	**9384.65**	20.35	20.35	**20.35**
27/03/2012	25/04/2012	15438.50	15438.50	**15438.50**	13.20	13.20	**13.20**
26/04/2012	26/05/2012	6354.70	6354.70	**6354.70**	7.70	7.70	**7.70**
27/05/2012	25/06/2012	11936.10	11936.10	**11936.10**	15.95	15.95	**15.95**
26/06/2012	26/07/2012	7656.00	7656.00	**7656.00**	15.40	15.40	**15.40**
27/07/2012	26/08/2012	4914.80	4914.80	**4914.80**	39.05	39.05	**39.05**
27/08/2012	25/09/2012	5337.20	5337.20	**5337.20**	42.35	42.35	**42.35**
26/09/2012	26/10/2012	8859.40	8859.40	**8859.40**	35.20	35.20	**35.20**
27/10/2012	25/11/2012	8005.25	8005.25	**8005.25**	9.90	9.90	**9.90**
26/11/2012	26/12/2012	3984.75	3984.75	**3984.75**	57.20	57.20	**57.20**
27/12/2012	31/12/2012	1409.10	1409.10	**1409.10**	11.00	11.00	**11.00**
2012 subtotal				**83280.45**			**267.30**
01/01/2013	31/01/2013	7660.95	7660.95	**7660.95**	38.50	38.50	**38.50**
01/02/2013	28/02/2013	5423.55	5423.55	**5423.55**	83.60	83.60	**83.60**
01/03/2013	31/03/2013	14403.95	14403.95	**14403.95**	9.90	9.90	**9.90**

01/04/2013	30/04/2013	15263.60	15263.60	**15263.60**	18.15	18.15	**18.15**
01/05/2013	31/05/2013	10027.05	10027.05	**10027.05**	10.12	10.12	**10.12**
01/06/2013	30/06/2013	6470.20	6470.20	**6470.20**	19.80	19.80	**19.80**
01/07/2013	31/07/2013	6882.15	6882.15	**6882.15**	32.45	32.45	**32.45**
01/08/2013	31/08/2013	6415.20	6415.20	**6415.20**	30.25	30.25	**30.25**
01/09/2013	30/09/2013	4433.00	4433.00	**4433.00**	39.60	39.60	**39.60**
01/10/2013	31/10/2013	8182.90	8182.90	**8182.90**	25.85	25.85	**25.85**
01/11/2013	30/11/2013	8219.20	8219.20	**8219.20**	36.30	36.30	**36.30**
01/12/2013	31/12/2013	8858.30	8858.30	**8858.30**	19.25	19.25	**19.25**
2013 subtotal				**102240.05**			**363.77**
01/01/2014	31/01/2014	6833.75	6833.75	**6833.75**	28.05	28.05	**28.05**
01/02/2014	28/02/2014	8699.35	8699.35	**8699.35**	53.90	53.90	**53.90**
01/03/2014	31/03/2014	11955.90	11955.90	**11955.90**	27.50	27.50	**27.50**
01/04/2014	30/04/2014	7565.25	7565.25	**7565.25**	32.45	32.45	**32.45**
01/05/2014	31/05/2014	10853.70	10853.70	**10853.70**	22.00	22.00	**22.00**
01/06/2014	30/06/2014	4922.50	4922.50	**4922.50**	37.95	37.95	**37.95**
01/07/2014	31/07/2014	5151.30	5151.30	**5151.30**	25.85	25.85	**25.85**
01/08/2014	31/08/2014	3149.85	3149.85	**3149.85**	39.05	39.05	**39.05**
01/09/2014	30/09/2014	3247.20	3247.20	**3247.20**	70.40	70.40	**70.40**
01/10/2014	31/10/2014	10615.55	10615.55	**10615.55**	30.25	30.25	**30.25**
01/11/2014	30/11/2014	5843.20	5843.20	**5843.20**	29.15	29.15	**29.15**
01/12/2014	31/12/2014	9304.35	9304.35	**9304.35**	30.25	30.25	**30.25**
2014 subtotal				**88141.90**			**426.80**
01/01/2015	31/01/2015	12674.20	12674.20	**12674.20**	34.65	34.65	**34.65**
01/02/2015	28/02/2015	6592.30	6592.30	**6592.30**	38.50	38.50	**38.50**
01/03/2015	31/03/2015	9722.90	9722.90	**9722.90**	30.25	30.25	**30.25**
01/04/2015	30/04/2015	13185.15	13185.15	**13185.15**	27.50	27.50	**27.50**
01/05/2015	31/05/2015	8155.95	8155.95	**8155.95**	18.15	18.15	**18.15**
01/06/2015	30/06/2015	6535.10	6535.10	**6535.10**	24.20	24.20	**24.20**
01/07/2015	31/07/2015	3657.50	3657.50	**3657.50**	66.00	66.00	**66.00**
01/08/2015	31/08/2015	2897.40	2897.40	**2897.40**	55.00	55.00	**55.00**
01/09/2015	30/09/2015	2492.60	2492.60	**2492.60**	66.00	66.00	**66.00**
01/10/2015	31/10/2015	5679.30	5679.30	**5679.30**	36.85	36.85	**36.85**
01/11/2015	30/11/2015	9563.40	9563.40	**9563.40**	29.15	29.15	**29.15**

01/12/2015	31/12/2015	7305.10	7305.10	**7305.10**	50.05	50.05	**50.05**
2015 subtotal				**88460.90**			**476.30**
Total		**-**	**-**	**362,123.300**	**-**	**-**	**1,534.170**

Table 4-3: Electricity delivered to the project activity by the grid via the backup power line

Period		**Electricity delivered to the project activity by the grid via the backup power line (MWh)**		
		Metered by M3	**Evidenced by ETNs**	**Conservative values ($EG_{im-spare,y}$)**
		G	**H**	**I=MAX(G, H)**
12/02/2012	12/03/2012	0.389	0.389	0.389
13/03/2012	11/04/2012	1.415	1.415	1.415
12/04/2012	12/05/2012	0.391	0.391	0.391
13/05/2012	11/06/2012	0.577	0.577	0.577
12/06/2012	12/07/2012	0.495	0.495	0.495
13/07/2012	12/08/2012	0.389	0.389	0.389
13/08/2012	11/09/2012	0.389	0.389	0.389
12/09/2012	12/10/2012	1.060	1.060	1.060
13/10/2012	11/11/2012	0.451	0.451	0.451
12/11/2012	12/12/2012	1.331	1.331	1.331
13/12/2012	**31/12/2012**	0.000	0.000	0.000
2012 subtotal				**6.887**
01/01/2013	31/01/2013	0.005	0.005	0.005
01/02/2013	28/02/2013	0.008	0.008	0.008
01/03/2013	31/03/2013	0.007	0.007	0.007
01/04/2013	30/04/2013	0.003	0.003	0.003
01/05/2013	31/05/2013	0.004	0.004	0.004
01/06/2013	30/06/2013	0.001	0.001	0.001
01/07/2013	31/07/2013	0.001	0.001	0.001
01/08/2013	31/08/2013	0.386	0.386	0.386
01/09/2013	30/09/2013	0.000	0.000	0.000

01/10/2013	31/10/2013	0.001	0.001	0.001
01/11/2013	30/11/2013	0.001	0.001	0.001
01/12/2013	31/12/2013	0.001	0.001	0.001
2013 subtotal				**0.413**
01/01/2014	31/01/2014	0.001	0.001	0.001
01/02/2014	28/02/2014	0.040	0.040	0.040
01/03/2014	31/03/2014	0.000	0.000	0.000
01/04/2014	30/04/2014	0.000	0.000	0.000
01/05/2014	31/05/2014	0.053	0.053	0.053
01/06/2014	30/06/2014	0.000	0.000	0.000
01/07/2014	31/07/2014	0.000	0.000	0.000
01/08/2014	31/08/2014	0.000	0.000	0.000
01/09/2014	30/09/2014	0.000	0.000	0.000
01/10/2014	31/10/2014	0.000	0.000	0.000
01/11/2014	30/11/2014	0.000	0.000	0.000
01/12/2014	31/12/2014	0.000	0.000	0.000
2014 subtotal				**0.093**
01/01/2015	31/01/2015	0.000	0.000	0.000
01/02/2015	28/02/2015	0.883	0.883	0.883
01/03/2015	31/03/2015	0.402	0.402	0.402
01/04/2015	30/04/2015	0.389	0.389	0.389
01/05/2015	31/05/2015	0.389	0.389	0.389
01/06/2015	30/06/2015	0.389	0.389	0.389
01/07/2015	31/07/2015	0.389	0.389	0.389
01/08/2015	31/08/2015	0.389	0.389	0.389
01/09/2015	30/09/2015	0.598	0.598	0.598
01/10/2015	31/10/2015	0.389	0.389	0.389
01/11/2015	30/11/2015	0.389	0.389	0.389
01/12/2015	31/12/2015	0.389	0.389	0.389
2015 subtotal				**4.995**
Total		**-**	**-**	**12.388**

Table 4-4: Calculation of net electricity supplied to the grid

Period	Conservative values of the electricity supplied to the grid (MWh)	Conservative values of electricity delivered to the project by the grid via main power line (MWh)	Conservative values of electricity delivered to the project by the grid via backup power line (MWh)	Net electricity supplied to the grid by the project (MWh)
	$EG_{output,y}$	$EG_{import,y}$	$EG_{im\text{-}spare,y}$	$EG_{facility,y}= EG_{output,y}-EG_{import,y}-EG_{im\text{-}spare,y}$
01/03/2012-31/12/2012	83,280.450	267.300	6.887	**83,006.263**
01/01/2013-31/12/2013	102,240.050	363.770	0.413	**101,875.867**
01/01/2014-31/12/2014	88,141.900	426.800	0.093	**87,715.007**
01/01/2015-31/12/2015	88,460.900	476.300	4.995	**87,979.605**
Total	362,123.300	1,534.170	12.388	**360,576.742**

Table 4-5: Calculation of baseline emissions

Period	Net electricity supplied to the grid by the project (MWh) ($EG_{facility,\ y}$)	$EF_{grid,\ CM,\ y}$ (tCO_2e/MWh)	Baseline emissions (tCO_2e/MWh) (BE_y)
01/03/2012-31/12/2012	83,006.263	0.9309	**77,270**
01/01/2013-31/12/2013	101,875.867	0.9309	**94,836**
01/01/2014-31/12/2014	87,715.007	0.9309	**81,653**
01/01/2015-31/12/2015	87,979.605	0.9309	**81,900**
Total			**335,659**

Project emissions

The verification team has confirmed the project emissions are regarded as zero and no leakage would be accounted for the Project according to the methodology ACM0002 version 12.2.0.

Emission Reductions

The verification team has also confirmed the emission reductions of the project have been conservatively calculated in line with above mentioned Formulas in the emission reduction calculation spreadsheet /2/. The total emission reductions have been summarized in the emission reduction calculation spreadsheet /2/ and checked to be correctly accounted.

Table 4-5 Verified Emission Reductions of the Project

Period	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
01/03/2012 - 31/12/2012	77,270	0	0	77,270
01/01/2013 – 31/12/2013	94,836	0	0	94,836
01/01/2014 – 31/12/2014	81,653	0	0	81,653
01/01/2015 – 31/12/2015	81,900	0	0	81,900
Total	335,659	0	0	335,659

By cross-check with the electricity sale receipts /16/, the verification team confirms that the monitoring results as listed in the Monitoring Report /1/ and emission reductions calculation spread sheet /2/ are conservative. The verification team confirms that the applied spreadsheet formulas and connections are correct and in line with the indicated emission reduction calculation in the monitoring plan contained in the VCS-PD /3/ and the applied methodology /6/.

Comparison of ERs

Based on the above assessment, CTC can conclude that the emission reduction during the monitoring period from 01/03/2012 to 31/12/2015 have been quantified correctly in accordance with the project description and applied methodology /6/, and the emission reduction during the monitoring period is verified as 335,659 tCO2e. Compared with the estimated emission reductions under the same days of 1,401 from 01/03/2012 to 31/12/2015 in the VCS-PD/3/, 325,143(=84,709*1,401/365) tCO2e, the verified emission reduction is (3.23%) higher than the estimated value. **Due to the wind resources are variable with the seasonal changes, the emission reductions are reasonable in this monitoring period.**

4.4 Quality of Evidence to Determine GHG Emission Reductions and Removals

The evidences used to determine the GHG emission reductions are assessed as follows:

Assessment of the Evidence Quality	
Parameters monitored	(i) $EG_{output,y}$ (ii) $EG_{import,y}$ (iii) $EG_{im\text{-}spare,y}$ (iv) $EG_{facility,y}$
Monitoring method	The quantity of electricity supplied to the gird ($EG_{output,y}$) and electricity imported from the grid ($EG_{import,y}$) by the project are measured by bi-direction meters. The net electricity supplied by the project ($EG_{facility,y}$) is calculated as $EG_{output,y}$ minus $EG_{import,y}$ and $EG_{im\text{-}spare,y}$.

Measuring/Reading/ Recording frequency	The parameters are continuously measured and monthly recorded.
Calibration frequency/ interval	See Table 4-1 Verified calibration information of monitoring meters. Through on-site observation and checking the calibration records of meters, the team confirmed that all the monitoring meters meet the rated accuracy level and the calibration frequency fulfils the requirement as described in the monitoring plan.
Calibration cover the monitoring period	The verification team confirms that the validity period of all conducted calibrations covers this monitoring period from 01/03/2012 to 31/12/2015.
Data reported	Through cross checking with the electricity sale receipts, the monitored data can be confirmed as acceptable to calculate emission reductions.

In summary, all necessary documentation is collected, referenced and is easily accessible in hard-copy or electronic format. The data pertaining to the monitored parameters are maintained in the identified internal records and consistent with the values stated in the VCS-MR /1/ and ER calculation spreadsheet /2/. Key data have been cross-checked via external sources, such as electricity sale receipts.

4.5 Non-Permanence Risk Analysis

The Project has set up a complete data management system to keep safely the record of the data collected during monitoring. The project will perfect the whole monitoring procedure by developing the CDM manual, tracking information from the primary source to the end-data calculations in paper document format. It is the responsibility of the proposed project owner to provide additional necessary data and information for validation and verification requirements of respective DOE. Physical documentation such as paper-based maps, diagrams and environmental assessment are collated in a central place, together with this monitoring plan. All paper-based information is stored by the proposed project owner and kept at least one copy.

At the end of each month, the monitoring data are filed in a spreadsheet, and the paper-based printout are also archived as well. Furthermore, the project owner collects the sales receipts for the electricity supplied to the grid as a cross-check, and compiled the monitoring report including the monitoring data and relevant evidence at the end of each crediting year.

All the monitoring system has been verified during remote video assessment. It was also confirmed during the assessment that all the staff involved in the individual projects has received periodic training on operation and maintenance of the hydropower plant.

In summary, the verification team has ensured that the quality management system for the Project is in place. The documented instructions including the responsibilities have been properly implemented and in line with the monitoring report /1/ and VCS-PD /3/. The internal review at a regular interval ensures the quality assurance of the monitoring procedures.

5 VERIFICATION CONCLUSION

CTC has carried out the 2nd periodic verification of the project "Shandong Wendeng Zhangjiachan Wind Farm Project". The verification was performed based on the requirements set by Voluntary Carbon Standard (VCS) Version 4.0 /5/, as well as criteria given to provide for consistent project operations, monitoring and reporting. This verification covers the period from 01/03/2012 to 31/12/2015 inclusive.

In the course of the verification three Clarification Requests (CL) and one Corrective Action Request (CAR) were raised. The verification is based on the VCS-MR /1/, the VCS-PD /3/, ER calculation spread sheet /2/ and supporting documents available to CTC.

As the result of the verification, CTC confirms that:

- The project activity has been implemented and operated as per the VCS-PD /3/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the Project are in place;
- The VCS-MR /1/ and other supporting documents provided are complete in accordance with the latest applicable version of the VCS Registration & Issuance Process /9/ and in accordance with the additional requirements stated by the VCS Association (VCSA);
- The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology i.e. ACM0002 version 12.2.0 /6/;
- The GHG emission reductions are calculated without material misstatements and in a conservative and appropriate manner.

Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, CTC confirms the following statement:

Verification period: From 01/03/2012 to 31/12/2015

Verified GHG emission reductions and removals in the above verification 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)
2012 (01/03/2012 - 31/12/2012)	77,270	0	0	77,270
2013	94,836	0	0	94,836

(01/01/2013-31/12/2013)				
2014 (01/01/2014-31/12/2014)	81,653	0	0	81,653
2015 (01/01/2015-31/12/2015)	81,900	0	0	81,900
Total	335,659	0	0	335,659

APPENDIX A: REFERENCES

Documents provided by the Project Participant and relevant background documents have been reviewed or referenced for the periodic verification conclusions.

Ref no.	Reference Document
/1/	CGN Carbon Asset Management (Beijing) Co., Ltd. , VCS Monitoring report Version 01 dated 04/03/2021 CGN Carbon Asset Management (Beijing) Co., Ltd. , VCS Monitoring report Version 02 dated 18/05/2021
/2/	CGN Carbon Asset Management (Beijing) Co., Ltd., ER calculation spreadsheet Version 01 dated 26/02/2021
/3/	CGN Carbon Asset Management (Beijing) Co., Ltd., registered VCS-PD dated 20/11/2013
/4/	Shenzhen CTI International Certification Co., Ltd, Verification Report Version 01 dated 07/01/2014
/5/	VCS Association, Voluntary Carbon Standard Version 3.4 and Version 4.0
/6/	CDM Executive Board, ACM0002 Consolidated baseline methodology for grid-connected electricity generation from renewable sources Version 12.2.0
/7/	VCS Association, Monitoring Report Template Form Version 4.0
/8/	VCS Board, VCS Program Guide Version 4.0
/9/	VCS Association, Registration & Issuance Process Version 4.0
/10/	International Organization for Standardization, ISO 14064-2:2006, ISO 14064-3:2006 and ISO 14065:2013 (ISO, www.iso.org).
/11/	CDM Executive Board, Tool to calculate the emission factor for an electricity system, Version05.0
/12/	IPCC: Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories Reference Manual
/13/	China National Economic Trading Commission, Technical Administrative Code of Electric Energy Metering, DL/T 448-2016
/14/	The registered CDM PDD and the validation report
/15/	The electricity monthly monitoring records covering this monitoring period
/16/	The electricity sale receipts covering this monitoring period
/17/	Calibration Certificates for Meter Measurement with the validity covering this monitoring period
/18/	Electricity statement for period 26/02/2012~29/02/2012
/19/	Power Purchasing Agreement
/20/	The relevant local stakeholder communication evidences provided by the PP

APPENDIX B: RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

1 CAR, 3 CLs and 0 FAR were raised in this 2nd verification.

Findings	PP's response	Verification teams conclusion
CAR-1： The monitoring period in Section 4.3 is not consistent with the ER calculation sheet.	The monitoring period in Section 4.3 had updated and is consistent with the ER calculation sheet.	The verification team confirm that the revised monitoring period in Section 4.3 is consistent with the ER calculation sheet.
CL-1: The information of the monitoring equipment (e.g. accuracy, serial no, calibration date and validity, etc) is not provided in the monitoring report.	The information of the monitoring equipment (e.g. accuracy, serial no, calibration date and validity, etc) had been provided in the monitoring report (Version 02, 18/05/2021).	The verification team has checked the provided evidences and confirmed all the necessary evidences of the calibration have been provided and the relevant information has been correctly provided in the revised VCS-MR. Hence, this CL is closed.
CL-2: The actual ERs in this monitoring period are higher than the estimated value. More detailed explanation should be provided.	The annual average emission reductions estimated in the registered PD is 84,709 tCO_2, so the estimated amount of emission reductions for the corresponding 1,401 days (the duration of this monitoring period) are 1,401/365×84,709=325,143tCO_2, which is little lower (3.23%) than the actual value of 335,659 tCO_2. Due to the wind resources are variable with the seasonal	The verification team checked the registered PD and confirmed that the actual ERs in this monitoring period is 3.23% higher than estimated in the registered VCS-PD, the small gap is resulted from seasonal variations of wind resources.

	changes, the emission reductions are reasonable in this monitoring period.	
CL-3: The information on the local stakeholder consultation during the monitoring period is not provided in the MR.	The relevant information has been provided in the revised monitoring report and the relevant evidences have been provided.	The verification team has checked the revised MR and the provided evidences and confirmed all the necessary information and evidences has been provided and the local stakeholder consultation during the monitoring period is correctly implemented. Hence, this CL is closed.

APPENDIX C: CERTIFICATES OF COMPETENCE

ctc 中国建材检验认证集团股份有限公司

CERTIFICATE OF APPOINTMENT

Ms. Zhao Jinlan

Satisfies the requirements as specified in the CTC CCP and is hereby appointed as

CDM Validator/verifier.

The present appointment will terminate on 31/12/2023.

Date of issue: 01/01/2021

Zhu Lianbin
CTC General Manager

ctc 中国建材检验认证集团股份有限公司

CERTIFICATE OF APPOINTMENT

Mr. Li Cheng

Satisfies the requirements as specified in the CTC CCP and is hereby appointed as

CDM Validator/verifier.

The present appointment will terminate on 31/12/2023.

Date of issue: 01/01/2021.

Zhu Lianbin
CTC General Manager

ctc 中国建材检验认证集团股份有限公司

CERTIFICATE OF APPOINTMENT

Ms. Li Shuzhen

Satisfies the requirements as specified in the CTC CCP and is hereby appointed as

CDM Validator/verifier.

The present appointment will terminate on 31/12/2023.

Date of issue: 01/01/2021.

Zhu Lianbin
CTC General Manager