



**Verified Carbon
Standard**

SHANDONG WENDENG ZHANGJIACHAN WIND FARM PROJECT



Document Prepared by Shenzhen CTI International Certification Co., Ltd

(CTI)

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Summary:

Shenzhen CTI International Certification Co., Ltd (hereafter referred to as CTI) has been commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd. to perform a validation of the renewal of crediting period of 'Shandong Wendeng Zhangjiachan Wind Farm Project' (Ref. No. 1188) (hereinafter referred to as the project activity) in P. R. China.

The scope of the validation of the renewal of crediting period is defined as an independent and objective review of the updated sections of the PD relating to the baseline, estimated emission reductions and the monitoring plan using the most recent version of baseline and monitoring methodology applicable for the project activity. The validation opinion is finalized based on the assessment of the project description through applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.

The assessment was performed in accordance with the VCS Standards Version 4.2 and UNFCCC requirement including an assessment of:

(a) The impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period of the registered VCS project activity at the time of requesting renewal of

crediting period of the project activity;

(b) The correctness of the application of the approved methodology and, where applicable, the approved standardized baseline for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period of the registered VCS project activity.

The project activity was registered as a CDM project activity on 17/01/2012 and renewed on 27/04/2019 which is available at <https://cdm.unfccc.int/Projects/DB/SGS-UKL1325865228.09/view?cp=1>. After the registration of CDM, the project has been registered as a VCS project which is available at <https://registry.terra.org/app/projectDetail/VCS/1188>.

The purpose of the project activity developed by Wendeng Zhangjiachan Wind Power Co., Ltd. is to generate renewable electricity by utilizing wind power resource. The project is located in Wendeng City, Shandong Province, P. R. China. It has a total installed capacity of 49.3 MW and is expected to generate 90,997 MWh clean electricity annually delivered to the North China Power Grid (NCPG). The project activity achieves greenhouse gases (GHGs) emission reductions by avoiding CO₂ emissions from the business-as-usual scenario electricity generation of those fossil fuel-fired power plants connected to the NCPG. The project activity contributes to sustainable development of the local community, the host country and the world.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

In the course of the validation, 2 Clarification Requests (CLs) were raised and successfully closed. The assessment is included in the report.

In summary, it is CTI's opinion that the project activity 'Shandong Wendeng Zhangjiachan Wind Farm Project' (Ref. No. 1188) in P. R. China, as described in the PD (Version 02 dated 24/05/2022), meets all relevant VCS and UNFCCC requirements for the renewal of the crediting period.

CONTENTS

1 INTRODUCTION	5
1.1 Objective	5
1.2 Scope and Criteria	5
1.3 Level of Assurance	6
1.4 Summary Description of the Project	6
2 VALIDATION PROCESS	7
2.1 Method and Criteria	7
2.2 Document Review	7
2.3 Interviews	8
2.4 Site Inspections	9
2.5 Resolution of Findings	9
3 VALIDATION FINDINGS	10
3.1 Project Details	10
3.2 Safeguards	16
3.3 Application of Methodology	17
3.4 Non-Permanence Risk Analysis	30
4 VALIDATION CONCLUSION	31
APPENDIX 1: ABBREVIATIONS	33
APPENDIX 2: REFERENCE LIST	35
APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS	38
APPENDIX 4: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS,	
FORWARD ACTION REQUESTS (CAR/CL/FAR)	41

1 INTRODUCTION

1.1 Objective

Shenzhen CTI International Certification Co., Ltd (hereafter referred to as CTI) has been commissioned by CGN Carbon Asset Management (Beijing) Co., Ltd. to perform a validation of the renewal of crediting period of " Shandong Wendeng Zhangjiachan Wind Farm Project " (Ref. No. 1188) (hereinafter referred to as the project activity) in P. R. China.

The objective of validation of an independent assessment by a Third Party of a proposed project activity against all defined criteria set for validation of renewal crediting period under the VCS and UNFCCC. In order to confirm that the project, as documented, is sound reasonable and meets the identified criteria, the validation involves the assessment on the project's baseline, monitoring plan, any deviation existed when implemented, and emission reductions. Validation for renewal crediting period is a requirement and is seen as necessary to provide assurance to stakeholders of the quality of project and its intended generation of VCUs.

The objective of this validation is to ensure that reported information in the Project Description of "Shandong Wendeng Zhangjiachan Wind Farm Project" is complete and accurate in accordance with applicable VCS standards and relevant UNFCCC requirements.

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project description (PD), baseline updated, monitoring plan and other relevant documents. The report is based on the assessment of the project design document under taken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow-up interviews with project stakeholders, review of the applicable methodology and its underlying formulae and calculations.

The PD is reviewed against the criteria stated in the VCS Standard Version 4.2, Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the CDM approved baseline and monitoring methodology ACM0002 version 20.0. The validation was based on the requirements of the CDM Validation and Verification Standard for Project Activities version 03.0, VCS Standard Version 4.2, VCS Validation and Verification Manual Version 3.2 and VCS Program Guide Version 4.1 to apply auditing techniques.

The validation 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 project is expected to generate an average of 75,245 VCUs per year, and therefore categorized as a project as per the VCS rules, in regards to its scale, subject to a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities of the project activity.

The assessment was conducted to provide a reasonable level of assurance of compliance against the defined audit criteria and materiality threshold within the audit scope. Based on the audit findings, the validation statement reasonably assures that the GHG assertion is materially correct and is a fair representation of the GHG data and information.

1.4 Summary Description of the Project

The project is implemented by Wendeng Zhangjiachan Wind Power Co., Ltd., which aims to use wind power to generate renewable and clean electricity delivered to the North China Power Grid (NCPG). It is located in Wendeng City, Shandong Province, P. R. China with the geographical coordinate of the project are 122.103611 E and 37.137639 N. The Project involves the installation of 58 sets of wind turbines and generators with a unit capacity of 850 kW with lifetime of 20 years. The total installed capacity of the project is 49.3 MW and the estimated annual net electricity generation is 90,997MWh. It started construction on 26/02/2010, first batch of generating units started commercial operation on 26/02/2011 and all of the generating units had put into commercial operation put into operation on 11/08/2011.

The project activity achieves greenhouse gases (GHGs) emission reductions by avoiding CO₂ emissions from the business-as-usual scenario electricity generation of those fossil fuel-fired power plants connected to the NCPG, generates social and environment benefits and contributes to sustainable development of the local community, the host country and the world, which has been verified by on-site inspection, and checking the related documentations, interview with the project implementer. The project is expected to achieve GHG emission reductions of 75,245tCO₂e annually and 752,450 tCO₂e in total in the second crediting period.

The project activity was registered as a CDM project activity (CDM Ref. 5655) on 17/01/2012 and renewed on 27/04/2019 as confirmed by checking the CDM registration interface: <https://cdm.unfccc.int/Projects/DB/SGS-UKL1325865228.09/view?cp=1>. After the registration of CDM, the project has been registered as a VCS project (VCS ID 1188) which is available at <https://registry.terra.org/app/projectDetail/VCS/1188>.

2 VALIDATION PROCESS

2.1 Method and Criteria

Validation was conducted using CTI's procedures in line with the requirements specified in the VCS Standard Version 4.2, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant UNFCCC requirements and applying standard auditing techniques. No sampling was utilized during the site visit as well as validation for project activity.

CTI completed a strategic review and risk assessment of the project activities and processes in order to gain a full understanding of (if applicable):

- Project Details;
- Application of Methodology;m
- Estimated GHG Emission Reduction and Removals;
- Monitoring;
- Safeguards etc.

CTI validate that the reported information in the Project Description is complete and accurate in question. This involved a site visit and a desk review of the Project Design. This Validation Report describes the findings of this assessment.

2.2 Document Review

Based on the requirements of competency, experience and qualified sectoral scopes, CTI appointed a validation team in accordance with CTI's internal procedures (see Appendix 2 Competence of team members and technical reviewers).

Function	Name	Technical competence	Task Performance*
Team Leader	Li Ziqi	1.2	☒ DR ☒ SV ☒ RP ☐ TR
Team Member	Zhang Wenting	1.2	☒ DR ☒ SV ☒ RP ☐ TR
Technical Reviewer	Lin Shunrong	1.2	☒ DR ☐ SV ☐ RP ☒ TR

*DR=Document review; SV=Site visit; RP=Reporting; TR=Technical review

The VCS PD (Version 01 dated 17/12/2021), and VCS PD (Version 02 dated 24/05/2022) were assessed as part of the validation. In addition, the registered VCS PD Version 01 dated 20/11/2013, CDM registered PDD (Version 2 dated 02/12/2011) and approved renewal PDD version 3.0 dated 08/01/2019, the corresponding validation reports, previous VCS monitoring reports and verification reports as well as relevant documents, were reviewed. A detailed documents reviewed are listed in Appendix 1 of the report.

2.3 Interviews

The objective of the interview process was to solicit important information from personnel related to project and relevant to the validation process. An on-site inspection and information discussions were conducted on 05/03/2022 with project owner, local stakeholders and the consultant, and the following is a list of the main interviewees and subject.

Interviewed personnel	Role	Organization	Subject	Team Member
Mr. Wang Junqi	Plant Director	Wendeng Zhangjiachan Wind Power Co., Ltd.	- Project design and operation of the project activity; - Project proponent and ownership; - Project start date, lifetime, and crediting period; - Project location; - Baseline Scenario; - Any modifications with respect to the registered PD; - Applicability to the latest methodology; - Applicable laws, statutes and other regulatory frameworks and any change; - Monitoring plan; - Participation under other GHG programs/emissions trading programs and other binding limits/other forms of environmental credit; - Sustainable development contributions; - The process and participation of the stakeholder consultation; - Additional information relevant to the project	Li Ziqi Zhang Wenting
Mr. Han Chuan	Staff			
Mr. Han Li	Local resident	Wendeng City	- Participation in the stakeholder consultation; - The impact of the project activity; - Sustainable development contributions; - Any complaints by local stakeholders and the implementation of the mitigation measures.	Li Ziqi Zhang Wenting
Mr. Zhang Xiaoguang	Local resident			
Mr. Liu Xingjun	Officer			
Ms. Wang Yue	VCS Manager	CGN Carbon Asset Management	- Preparation of VCS PD; - Applicability to the latest	Li Ziqi

		(Beijing) Co., Ltd.	methodology; - Baseline updating and monitoring plan - Project's compliance with the VCS program; - Data and calculation of GHG emission reductions	Zhang Wenting
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2.4 Site Inspections

Via the assessment in course of the on-site inspection on 05/03/2022., a ground inspection of the project was conducted during the site visit and the validation team interviewed personnel with related objective listed in above table. The information presented in the project description were assessed by review of the detailed project documentation, interviewing as well as by on-site inspection. This has enabled the validation team to assess the accuracy and completeness of reported information, to verify the project's compliance with the requirement of VCS renewal of crediting period validation.

2.5 Resolution of Findings

As an outcome of the validation process, the team can raise different types of findings.

The validation team shall raise a Corrective Action Request (CAR) where reported information is not in line with the applicable CDM/VCS requirements.

The validation team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM/VCS requirements have been met.

2 CLs are raised for the project and all CLs are successfully closed. No CAR was identified during the validation. Refer to Appendix 4 for detail assessment.

2.5.1 Forward Action Requests

As this is the validation for the project for renewal of crediting period, no FARs were raised in the previous validation and verification process.

3 VALIDATION FINDINGS

3.1 Project Details

The following description of the project as per PD was verified during the on-site visit and documents review:

Project type, technologies and measures implemented, and eligibility of the project

▪Type

Through the onsite visit, interviewing the project owner and documents review, it is verified by CTI the project activity is a newly-built grid-connected wind power project, which is to use wind power resource for electricity generation. Therefore, it is confirmed that the sectoral scope of the project activity falls into sectoral scope 01: Energy industries (renewable - / non-renewable sources) as per the UNFCCC Standard “Applicability of sectoral scopes version 01.0”/44/.

The validation team also confirms that the project is not a grouped project as it is conducted in one single location and involves only one single installation.

▪Technologies and measures implemented

The information and descriptions reported in section 1.11 of the PD have been checked against the FSR, registered CDM PDD, registered VCS PD and approved renewal CDM PDD as well as via on-site inspection.

The project involves the installation and operation of 49.3 MW wind power plant equipped with 58 wind turbines in Type of G58-850kW and with lifetime of 20 years, manufactured by Gamesa Wind (Tianjin) Co., Ltd.. The average annual power delivered to the grid by the project is expected to be 90,997MWh. The plant load factor (PLF) of the project is 21%. The details of installed wind turbines have been verified by CTI through checking Purchase contract of wind turbines/19/ and nameplates /20/ during the on-site inspection.

CTI has further verified the project implementation by interview and checking the operation and maintenance records, and the power purchase agreement (PPA), as well the connection diagram. It was confirmed that the project started construction on 26/02/2010, the first batch of generating units started commercial operation on 26/02/2011 and all wind turbines put into full operation since 11/08/2011, and the electricity generated by the project activity is supplied to the NCPG. By replacing the equivalent electricity generated by fossil fuel fired power plants from the North China Power Grid(NCPG), it's estimated that the project could achieve average GHG emission reductions of 75,245 tCO₂e annually and 752,450 tCO₂e in total in the second crediting period.

In conclusion, it is verified that the description of the project in section 1.11 of the PD is in line with the PD template requirements and all the information has been provided and verified as correct and consistent with the registered and approved design documents, and reflects the real condition of the project implementation.

▪*Eligibility of the project activity*

For the renewal of crediting period validation, the PD has described and provided the justification on the project's eligibility under the scope of the VCS Program as per VCS Standard Version 4.2. The assessment is provided as below:

The project activity generates GHG emission reductions including CO₂ which belong to the six Kyoto Protocol greenhouse gases attributed to scope 1 of section 2.1.1 of VCS Standards Version 4.2.

The project activity adopted CDM methodology ACM0002 (version 20.0) which is approved under a VCS approved GHG program, attributed to scope 4 of section 2.1.1 of VCS Standards Version 4.2

Via checking the registered CDM PDD, VCS PD and validation reports of the project, it is verified that the project is implemented to utilize wind power for electricity generation and deliver to NCPG. It reduces GHG emissions by the fossil-fuel based power plant of NCPG, and the additionality is verified as actual, thus there is no assumption of having generated GHG emissions primarily for the purpose of their subsequent reduction, removal or destruction for this project.

In conclusion, as a registered VCS project, the project remains eligible under the scope of the VCS Program.

Project design, including eligibility criteria for grouped projects

The project is conducted in one single location and involves only one single installation. Therefore, it is not a grouped project.

Project Proponent and other entities involved in the project

Through document review by checking the Business License /17/, approvals of EIA and FSR /13//14/ and via on-site inspection and interview, the validation team confirmed the project is owned, implemented and operated by Wendeng Zhangjiachan Wind Power Co., Ltd.. Therefore, Wendeng Zhangjiachan Wind Power Co., Ltd. is confirmed to be the project proponent of the project.

The other entity involved in the Project is CGN Carbon Asset Management (Beijing) Co., Ltd. which is appointed by the project proponent as the consultancy for VCS development as verified by interviewing with the representative from the project proponent and the consultancy company. The contact information reported in section 1.6 of PD has been confirmed to be correct through checking the Business License /18/ and interviewing the representative of this company.

Ownership

By checking the Business License /17/, approvals of EIA and FSR /13//14/, the Purchase Contract of the equipment /19/ and the Power Purchase Agreement /15/, the validation team confirmed that the project proponent Wendeng Zhangjiachan Wind Power Co., Ltd. has the legal right to control and operate the project activity and has full legal and beneficial title to all of the GHG reductions generated by the Project.

Project Start Date

The project start date is 26/02/2011 on which the first batch of generating units put into operation and began generating GHG emission reductions. By checking the registered VCS PD /5/, commissioning report /22/ and site visit interview with project owner, it is verified the start date is correct and in line with the VCS standard Version 4.2.

Project Crediting Period

A deviation was identified for the crediting period of the Project. The project is registered under VCS Version 3.4 and completed validation before 19/03/2020. As per VCS Standard Version 4.2, it remains eligible to apply the crediting period requirements under VCS Version 3 which shall be a maximum of ten years and may be renewed at most twice. Therefore, the first renewable crediting period of the Project is updated from 26/02/2011 to 29/02/2012 to 26/02/2011- 25/02/2021, which lasts for 10 years.

By checking the VCS website, it is confirmed that VCUs were issued for the period 26/02/2011-29/02/2012, 01/03/2012-31/12/2015 and 01/01/2016-25/02/2021. Thus, the monitoring periods during the first crediting period is contiguous.

By checking the UNFCCC registration interface, it is confirmed that the project was registered under CDM scheme on 17/01/2012 with reference number of 5655. The first crediting period under CDM scheme is 01/03/2012 to 28/02/2019, which could be renewed twice.

Considering the 20-year lifetime of the project activity and 7*3 CDM renewable crediting period, it is not eligible for VCU issuance beyond 25/02/2031. Therefore, the validation team confirmed that the second VCS crediting period of the project is from 26/02/2021 to 25/02/2031 last for 10 years in line with the requirement of VCS.

Project Scale and Estimated GHG Emission Reductions or Removals

As the annually estimated emission reductions are lower than 300,000 tCO₂e, the project classified as “Project” under VCS standard. Through checking emission reductions calculation spreadsheets /2//3/ provided by PP, it is verified that the total estimated GHG emission reductions during the second VCS crediting period (26/02/2021 to 25/02/2031) is 752,450 tCO₂e. the

validation team was able to confirm that the estimated GHG emission reductions of the project activity are calculated correctly and conservatively, which are shown as follows:

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
26/02/2021~25/02/2022	75,245
26/02/2022~25/02/2023	75,245
26/02/2023~25/02/2024	75,245
26/02/2024~25/02/2025	75,245
26/02/2025~25/02/2026	75,245
26/02/2026~25/02/2027	75,245
26/02/2027~25/02/2028	75,245
26/02/2028~25/02/2029	75,245
26/02/2029~25/02/2030	75,245
26/02/2030~25/02/2031	75,245
Total	752,450
Total number of crediting years	10
Average annual ERs	75,245

Project location

The project is located in Wendeng City, Shandong Province, P. R. China Through site visit and check the on-site GPS location against the map, it is confirmed that the central geographical coordinates of the proposed project are 122.103611 E and 37.137639 N.

Conditions prior to project initiation

Before the implementation of the project activity, the electricity generated by the project would be supplied by NCPG in the baseline scenario. The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, which has been confirmed during the interview and checking CDM registered and approved updated PDD /4/ and corresponding validation reports /6/.

Therefore, the project is confirmed not to be implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction.

Project compliance with applicable laws, statutes and other regulatory frameworks

By checking the approval for EIA and FSR as well as relative laws and regulation, ie. Renewable Energy Law of the People's Republic of China, Environmental Protection Law of the People's Republic of China, Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution /31/, it is confirmed that the project activity is in complicate with all laws and regulations in China.

Participation under other GHG programs

The project has been registered as CDM project with UNFCCC Ref. No. 5655 and registered as VCS project with Ref. No. 1188. Apart from CDM and VCS the project has neither been registered nor seeking registration under any other GHG programs which has been confirmed via checking the UNFCCC, GS, VCS, China Certified Emission Reduction (CCER) /45/and other GHG schemes' website. It is also confirmed that the project is not rejected by any other GHG programs. In addition, as verified by checking the CDM registered interface of the project activity, it is confirmed by CTI there has been no emission reductions issued, under request for issuance or awaiting for issuance request for CERs.

Other forms of credit

•Emissions trading programs and other binding limits

Although the national emission trading scheme has been launched since 16/07/2021, it only covers the high-emission and energy intensive industries as per the regulation/45/. By checking the business license/17/of the project proponent, it is confirmed the PP is qualified in business scope of renewable energy investment, thus is not included the mandatory emission control scheme and there is no emission cap enforceable for the PP via further checking the compulsory company list under China ETS in public information /30/. Moreover, it is verified by the validation team the project activity has not been registered as CCER/46/, the emission reductions generated by the project activity are not eligible to be used for compliance with emission trading programs or to meet binding limits on GHG emissions as stipulated in the regulation/45/.

To be concluded, the project activity is not involved on other emissions trading programs and other binding limits. As a completely voluntary CDM and VCS project, its GHG emission reductions will not be enforced to exchange for the compliance in the national ETS.

Furthermore, the validation team confirms by checking the Statement /23/ submitted by the project proponent that the net GHG emission reductions generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions.

•Other forms of environmental credit sought or received and eligible to be sought or received

Via interview with the project owner and based on above assessment, it is confirmed that the project has not created any other form of environmental credit

Sustainable development contributions

Via the on-site inspection and by checking the evidence provided, CTI verified that the project contributes the sustainable development through the following aspects:

- SDG13 “Take urgent action to combat climate change and its impacts”:

The project activity will achieve obvious greenhouse gas (GHG) emission reductions by avoiding CO₂ emissions, as grid-connected fossil fuel-fired power dominates in the North China Power Grid. The project is expected to generate an average of 75,245tCO₂e reductions annually. This complies with the goal sated in the Part 11 of China’s “14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035: “Actively respond to climate change: implement national independent contribution targets for climate change response by 2030 and formulate an action plan to reach peak carbon emissions by 2030”

- SDG7 “Ensure access to affordable, reliable, sustainable and modern energy”:

The project reduces the consumption of the fossil fuels of NCPG, which contributes to increasing the share of renewable energy and improve China’s energy security. This contributes to the action that “Promoting coal substitution as well as transformation and upgrading” and “Vigorously developing new energy resources” of China’s “Action Plan for Carbon Dioxide Peaking Before 2030”.

- SDG8 “Promote inclusive and sustainable economic growth, employment and decent work for all”:

The implementation of the project will offer job opportunities for local people during both the construction and operational period. This contributes to one of the China’s actions for promoting sustainable developing, “Increase labor force participation rate through implementation of the classification policy. Vigorously enforce the Law on Promotion of Employment”

Additional information relevant to the project

▪Leakage management for AFOLU projects

As the project is not a grouped project, the eligibility criteria for grouped project is not applicable; No leakage management as not an AFOLU project.

▪Commercially sensitive information

No commercially sensitive information has been excluded from the public version of the project description. The details are presented transparently to validation team for analysis which lead to positive conclusion for this validation.

Overall, it is confirmed that the PD is accurate, complete, and provides an understanding of the nature of the project.

3.2 Safeguards

3.2.1 No Net Harm

By checking the EIA summary and conclusion provided in the registered PD, it is confirmed that wind power is green power and the impact caused by wind power on the surrounding ecosystem and residents, water, and atmosphere etc. is mitigated to the minimum level and is not considered significant, there would be no net harm caused due to the project activity. Also, the EIA of the project are approved by the government.

Via on-site and interviewing with the PP, it is confirmed that the project offers job opportunities during both construction and implementation period adhere to the national policy of giving priority to employment for sustainable development, and no potential environment or social economic matter was found. The project is renewable energy project and thus no net harm observed in air or water quality on-site.

3.2.2 Local Stakeholder Consultation

During on-site inspection, the validation team has interviewed the project owner as well as local stakeholders including plant manager, government official and local villagers (refer to section 2.3 of this report), and following communication mechanisms between the PP and local stakeholders has been confirmed, as per the PD describes:

As per the registered VCS PD and registered CDM PDD (Version 2 dated 02/12/2011), a stakeholder consultation meeting was held on 21/11/2009 in local area and 50 participants attended the meeting. During the stakeholder meeting, a questionnaire, which was designed to be easily filled in, were distributed. 50 copies of questionnaire were distributed, and 48 pieces of reply were received. The opinions expressed by the stakeholders were recorded and are available on request.

The stakeholder survey showed that the project receives strong support from the local community. They all believe the project will promote benefit local environment and agree with the project development and construction.

For continuous communication with local stakeholders, communications with Local stakeholders were being carried out at periodic intervals.

Stakeholders were informed of the status and progress of the project through the bulletin board on the village committee, and their comments can be recorded in the village committee's complaint book. And also, stakeholders can communicate and give feedback directly to the project proponent at any time through the published phone number of contact person.

During the on-site visit, the validation team checked the complaint book and interviewing with the contact person as well as the local residents, it is confirmed that no complaints were received during the implementation of the project.

Through interviewing with staff from local environmental protection bureau and local residents during the site visit, it is confirmed that during the implementation stage of the project activity, local authority has conducted spot checks on the implementation of the project periodically as per the request from the local governments' regulations and the project passed all the periodic spot checks by local government, no negative comments were received for the project.

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

3.2.3 Environmental Impact

The validation team reviewed the EIA (Environmental Impact Assessment) of the project. The EIA was carried out by Shandong Academy of Environmental Science and approved by Shandong Environmental Protection Bureau. Mitigation measures have been taken to minimise the negative impacts of the project activities, such as proper disposal of solid waste generated during construction by backfilling and utilising soil materials and centralising municipal solid waste; and keeping noise during operation to a minimum by selecting low-noise equipment and technology. For the project activity, the environmental impacts from noise, electromagnetic pollution, solid waste and wastewater were all considered insignificant. By on-site visiting and checking the EIA summary and conclusion, it is confirmed that the environmental impacts of the project are not considered significant.

3.2.4 Public Comments

Comments were received during the CDM global stakeholder process during 05/04/2011-04/05/2011, which had been taken into account and clarified in the registered PDD as evaluated and accepted by the DOE in the validation report. Then, the project was registered as a CDM project on 17/01/2012.

3.2.5 AFOLU-Specific Safeguards

Not applicable as non-AFOLU project.

3.3 Application of Methodology

3.3.1 Title and Reference

The approved methodology applied in the project activity is ACM0002 – "Grid-connected electricity generation from renewable sources" (version 20.0)

Related tools are:

Tool to calculate the emission factor for an electricity system (version 07.0);

Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (version 03.0.1).

3.3.2 Applicability

The criteria and assessment of ACM0002 (version 20.0) are in the following table:

Criteria	Analysis	Validation Team's opinion
This methodology is applicable to grid-connected renewable energy power generation project activities that: a) Install a Greenfield power plant; b) Involve a capacity addition to (an) existing plant(s); c) Involve a retrofit of (an) existing operating plants/units; d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or e) Involve a replacement of (an) existing plant(s)/unit(s).).	The project is a greenfield grid-connected renewable power generation project.	Via site visit and checking the FSR, it is confirmed that the project is a grid-connected Greenfield wind power plant.
The methodology is applicable under the following conditions: (a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition	The project is a newly built wind power project.	Via site visit and checking the FSR, it is confirmed that the project is a Greenfield wind power plant.

Criteria	Analysis	Validation Team's opinion
projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.		
In case of hydro power plants, one of the following conditions must apply: (a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or (b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (7), is greater than 4 W/m²; or (c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m²; or (d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m², all of the following conditions shall apply:	Not applicable, the project is not a hydro power plant, so this applicability condition does not need to be considered.	Via site visit and checking the FSR, it is confirmed that the project is a wind power project, this is not applicable.

Criteria	Analysis	Validation Team's opinion
(i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m²; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be: a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.		
In the case of integrated hydro power projects, project proponent shall: Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried	Not applicable, the project is not a hydro power plant, so this applicability condition does not need to be considered.	Via site visit and checking the FSR, it is confirmed that the project is a wind power project, this is not applicable.

Criteria	Analysis	Validation Team's opinion
out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.		
The methodology is not applicable to: a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b) Biomass fired power plants/units.	The project does not involve switching from fossil-fuels to renewable energy sources at the site of the project activity and the project is not a biomass-fired power project.	Via site visit and checking FSR, it is confirmed that the project is a Greenfield wind power plant, does not involved in switching from fossil fuel to renewable energy and biomass fired power plant.
In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.	Not applicable, the project is a newly built wind power project.	Via site visit and checking the FSR, it is confirmed that the project is a Greenfield wind power project, this is not applicable.

According to the table above, The validation team confirm the project meets all the applicable criteria of ACM0002 version 20.0

Also, for related tools, The validation team confirm all applicable criteria have been met confirmed by site visit and checking FSR.

3.3.3 Project Boundary

Project boundary has been ascertained and confirmed during the site visit using ACM0002 version 20.0 – "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to".

Via site visit and checking the Power Purchase Agreement /15/and Grid Access Agreement /16/, it is confirmed that the electricity generated by the project activity is supplied to North China Power Grid (NCPG). According to the boundary definitions of the 2019 Baseline Emission Factors for Regional Power Grids, NCPG consists of Beijing, Tianjin, Hebei, Shandong, Shanxi and Inner Mongolia power grids. Hence the project boundary includes the project site and all power plants physically connected to NCPG.

The sources and GHG gases involved for proposed Project activity are as below:

Source		Gas	Included?	Justification/Explanation
Baseline	CO ₂ emissions from electricity generation in fossil fuel-fired power plants that is displaced due to the project activity.	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
		Other	No	Minor emission source
Project	The wind power plant	CO ₂	No	As a wind power project, it does not involve project emission according to ACM0002.
		CH ₄	No	Project activity does not emit CH ₄
		N ₂ O	No	Project activity does not emit N ₂ O
		Other	No	Project activity does not emit other gas

3.3.4 Baseline Scenario

The baseline scenario of the project activity is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid. According to the methodology ACM0002 version 20.0, the baseline emissions are the electricity produced by the project activity multiplied by the emission factor of NCPG.

For the second crediting period, the continued validity of the original baseline has been assessed in the updated PD. By checking the relative local and national laws and regulations, CTI confirms that there have been no changes in the relevant national and/or sectoral regulations on building a

wind power project for exporting electricity to power grid since the previous crediting period. On the other hand, the baseline scenario for building a wind power project for exporting electricity to power grid is still valid according to methodology ACM0002 version 20.0.

The information presented in the updated PD has been validated by an initial document review of all data. Further confirmation has been made based on the review of information from similar projects and/or technologies. The sources referenced in the PD have been quoted correctly. The information was verified against credible sources, i.e 2019 Baseline Emission Factors for Regional Power Grids in China /24/.

The steps from the Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” version 03.0.1 as per VCS standard version 4.2 were applied to assess the continued validity of the baseline and/or to update the baseline at the renewal of a crediting period:

Step 1: Assess the validity of the current baseline for the next crediting period

VCS standard version 4.2 requires assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed using the following Sub-steps:

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The current baseline remains the same as it was in the registered VCS PD Version 01 dated 20/11/2013. There has been not significant change in the relevant national and/or sectoral policies since the date of VCS PD registered till now, although national policies favour the development of renewable energy, electricity generated by fossil fuel based plants dominates the electricity supply. Hence, it can be concluded that the current baseline still complies with all relevant policies.

Step 1.2: Assess the impact of circumstances

The validation team has assessed whether there are changes of circumstances which have an impact on the baseline scenario. As verified by checking the China Electric Power Yearbook, fossil fuel based power generation still dominates the electricity supply in NCPG, the availability of new fuels or raw materials and the electricity or fuel prices has no impact on the baseline scenario. It is concluded by the validation team that no such changes have been identified and the market characteristics do not have impact on the baseline scenario since validation. The validation team confirms that the current baseline identified in the registered PD is still valid for the second crediting period.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

In the absence of the project activity, similar amount of electricity would have been generated and supplied to the grid by fossil-fuel power in the baseline scenario. As a greenfield project, there no baseline equipment which is to be exchanged. Thus, there are not any investment needs to be undertaken by the project participants or the third party. Hence, this step is not applicable to the project activity.

Step 1.4: Assessment of the validity of the data and parameters

As per the requirement of the "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", if any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period and not valid anymore, the current baseline needs to be updated for the subsequent crediting period.

The Designated National Authority (DNA) of China issued the notice "2019 Baseline Emission Factors for Regional Power Grid in China" on 29/12/2020, which was the latest grid data available for the project. The operating margin emission factor ($EF_{grid,OM,y}$) and build margin emission factor ($EF_{grid,BM,y}$) of NCPG the project connected have been updated according to the latest data available. For the wind power project, the values of ω_{OM} and ω_{BM} for the first crediting period are applied for the subsequent crediting periods as per the "Tool to calculate the emission factor for an electricity system" (version 07.0). Thus, the combined margin emission factor ($EF_{grid,CM,y}$) and the baseline emissions need to be updated for the second crediting period with the application of the new data available.

Step 2: Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

The baseline emissions have been updated for the second crediting period, without re-assessing the baseline scenario, based on the latest approved version of the methodology ACM0002 (version 20.0) applicable to the project activity taking into account the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period.

Step 2.2: Update the data and parameters

The "2019 Baseline Emission Factors for Regional Power Grid in China" was issued by DNA of China, which was calculated according to the "Tool to calculate the emission factor for an electricity system". The values of ω_{OM} and ω_{BM} are as per the "Tool to calculate the emission factor for an electricity system" (version 07.0), the validation team confirmed that the applied data and parameters are latest available at the time of the project participant requesting renewal of the crediting period and valid for calculation of baseline grid emission factor of the second crediting period. Refer to section 3.3.6 of this report for details.

Conclusion:

CTI confirms that the current baseline is still valid as per methodology ACM0002 (version 20.0), and the grid emission factors need to be updated for the subsequent crediting period.

3.3.5 Additionality

Not applicable for the renewal of crediting period.

By checking relevant applicable laws and regulations at the time of renewal of crediting period, i.e. Renewable Energy Law of the People's Republic of China which came into effect on 01/01/2006, Agenda for China's 14th Five-Year Plan (2021-2025), the validation team confirms the project activity is in compliance with all laws and regulations in China and there are no surplus regulations required comparing with the first validation at time of renewal of crediting period.

3.3.6 Quantification of GHG Emission Reductions and Removals

The calculation of the emissions reductions exactly follows the procedures described in the methodology ACM0002 version 20.0 and relevant tool, e.g. the "Tool to calculate the emission factor for an electricity system" version 07.0.

CTI has assessed the calculation of project emissions, baseline emissions, leakage emissions and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheet. The consistency of the parameters and equations presented in PD, as well as calculation spreadsheet etc., has been compared with the information and requirements presented in the methodology and respective tools.

The assumptions and data used to determine the emission reductions are listed in the PD and all the sources have been checked. Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PD. The values presented in the PD are considered reasonably based on the documentation and references reviewed and the results of the interviews.

The estimation of the emission reductions are considered correct as the calculations have been reproduced by the validation team with the attainment of the same results.

CTI confirms methodology ACM0002 version 20.0 and relevant tool, e.g. the "Tool to calculate the emission factor for an electricity system" version 07.0 have been correctly applied to calculate baseline emissions, project emissions, leakage and net GHG emission reductions and removals.

Detailed information on the verification of the parameters used in the equations is found below. The algorithms for the determination of the baseline and project are discussed in the following sections.

The emission reductions are calculated by the difference between baseline emissions (BE_y), project emissions (PE_y) and leakage.

(1) Baseline emissions

As per the methodology ACM0002 version 20.0 that the baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The baseline emissions are calculated by the Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh) ($EG_{PJ,y}$) multiplied by the Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$).

As the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, the $EG_{PJ,y}$ equals to the quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh) ($EG_{facility,y}$). According to ACM0002 (version 20.0), Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh) ($EG_{facility,y}$) is determined according to Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0.

The Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$) is calculated in a transparent and conservative manner as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the steps prescribed in the "Tool to calculate the emission factor for an electricity system", version 07.0.

The PD (Version 02 dated 24/05/2022) uses the latest data available for calculation of the grid emission factor sourced from China Electric Power Yearbook 2015-2019, China Energy Statistical Yearbook 2016-2018 and 2019 Baseline Emission Factors for Regional Power Grids in China published by the DNA of China on 29/12/2020. $EF_{grid,OM,y}$ is calculated to be 0.9419 tCO₂e/MWh and $EF_{grid,BM,y}$ is calculated to be 0.4819 tCO₂e/MWh. It is confirmed that the calculation is in accordance with the calculation process of the corresponding methodology and tools.

Based on the weight w_{OM} and w_{BM} of 0.75:0.25 by default for the second crediting period as per the "Tool to calculate the emission factor for an electricity system" (version 07.0) , the combined margin emission factor is calculated to be 0.8269 tCO₂e/MWh. The values of the main parameters for calculating combined emission factor ($EF_{grid,CM,y}$) are crosschecked by the validation team and the data sources are listed in below table:

Data and Parameters	Description	Data source
$EF_{grid,BM,y}$	Simple operating margin CO ₂ emission factor of NCPG in 2019	2019 Baseline Emission Factors for Regional Power Grids in China
$EF_{grid,OM,y}$	Build margin CO ₂ emission factor of NCPG in 2019.	2019 Baseline Emission Factors for Regional Power Grids in China

The annual quantity of net electricity generation supplied by the project plant/unit to the grid is 90,997 which is in line with the approved design of the project FSR. It's confirmed that the

estimation of the figure is reasonable. Thereby, the baseline emissions could be calculated to be $90,997 \times 0.8269 \text{ tCO}_2\text{e/MWh} = 75,245 \text{ tCO}_2\text{e}$. The validation team confirmed that the remission reductions calculation is corrected in the PD.

CTI confirms that all data sources and assumptions are appropriate, and calculations are correct, applicable to the proposed VCS project activity and will result in a conservative estimate of the emission reductions.

(2) Project emissions

The project emission is considered as zero according on ACM0002 (version 20.0). Therefore, $PE_y = 0 \text{ tCO}_2\text{e}$.

(3) Leakage

Leakage of the project activity is not considered according to ACM0002 (version 20.0)

(4) Emission reductions

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average ex-ante estimation of emission reduction conservatively calculated to be 75,245 tCO₂e per year for the selected 10 years crediting period. Total emission reductions during the second crediting period are estimated to be 752,450 tCO₂e as follows:

Year	EG _{facility,y} (MWh)	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
26/02/2021~25/02/2022	90,997	75,245	0	0	75,245
26/02/2022~25/02/2023	90,997	75,245	0	0	75,245
26/02/2023~25/02/2024	90,997	75,245	0	0	75,245
26/02/2024~25/02/2025	90,997	75,245	0	0	75,245
26/02/2025~25/02/2026	90,997	75,245	0	0	75,245
26/02/2026~25/02/2027	90,997	75,245	0	0	75,245
26/02/2027~25/02/2028	90,997	75,245	0	0	75,245
26/02/2028~25/02/2029	90,997	75,245	0	0	75,245
26/02/2029~25/02/2030	90,997	75,245	0	0	75,245
26/02/2030~25/02/2031	90,997	75,245	0	0	75,245
Total	909,970	752,450	0	0	752,450

3.3.7 Methodology Deviations

There are no methodology deviations for the project.

3.3.8 Monitoring Plan

The project applies methodology ACM0002 version 20.0. In the VCS PD (Version 02 dated 24/05/2022), 4 parameters including $EG_{\text{facility},y}$, $EG_{\text{output},y}$, $EG_{\text{import},y}$ and $EG_{\text{im-spare},y}$ was monitored. The monitoring plan contained in the VCS PD (Version 02 dated 24/05/2022) was consistent with the monitoring plan in the registered VCS PD and satisfied with ACM0002 version 20.0 requirements.

Based on the on-site inspection and checking the FSR, the connection diagram, PPA and meters, it is confirmed that there are 2 sets of bidirectional electricity meters installed at the connection point between the project and the grid to continuously measure the total electricity supplied to ($EG_{\text{output},y}$) and imported from the grid by the project ($EG_{\text{import},y}$). The main meter (M1) is installed on the Xijiao 110kV substation and the back-up meter (M2) is installed at the onsite 110kV substation. The accuracy of both meters is 0.2s as verified by on-site inspection, which is in accordance with the monitoring plan requirement "no lower than 0.5s". The calibration of meters would be conducted annually based on the requirement of local and national standard. In case of the main meter out of order, readings from the back-up meter will be used. The electricity monitored will be crosschecked with sales receipts.

It was also confirmed that there is a meter installed on the 10kv backup line to measure the amount of power delivered to the project from this line ($EG_{\text{im-spare},y}$). This meter is owned, maintained and monitored by the local power distributor. The meter was verified to have an accuracy of 2.0, which meets the monitoring plan requirement of "not less than 2.0". The calibration is performed once a year according to the requirements of national and local standards. When the main line cannot supply power, the meter readings on the 10kV backup line will be used to supply power to the project. The electricity monitored will be crosschecked with sales receipts. Monitoring method for the four parameters is summarized below:

Parameters	Description	Measurement method and QA/QC procedures	Assessment conclusion
$EG_{\text{facility},y}$	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	The parameter would be calculated as: $EG_{\text{facility},y} = EG_{\text{output},y} - EG_{\text{import},y} - EG_{\text{im-spare},y}$ The parameter $EG_{\text{facility},y}$ will be calculated and monthly recorded.	Consistent with methodology

EG _{output,y}	Quantity of electricity supplied by the project plant/unit to the grid in year y.	Monitored by the bi-directional main meter(M1) installed at the Xijiao 110kV substation and backup meter(M2) installed at the 110KV substation on the project site with accuracy level of no lower than 0.5s.	Consistent with methodology
EG _{import,y}	Quantity of electricity delivered to the project plant/unit from the grid in year y.	Annual calibration will be conducted in accordance to the requirements of national and local standards. The readings of the electricity meters will be continuously measured and at monthly recorded. The electricity monitored will be crosschecked with sales receipts issued by grid company. Data will be archived for 2 years following the end of the last crediting period by means of electronic and paper backup.	Consistent with methodology
EG _{im-spare,y}	Quantity of electricity delivered to the project plant/unit from the 10 kV spare line in the year y.	Monitored by the meter(M3) installed on spare line with accuracy level of no lower than 2.0. Annual calibration will be conducted in accordance to the requirements of national and local standards The readings of the electricity meters will be continuously measured and at monthly recorded. The meter readings will cross-checked with sales receipts issued by grid company. Data will be archived for 2 years following the end of the last crediting period by means of electronic and paper backup.	Consistent with methodology

CTI confirms that the monitoring plan contains all necessary parameters which have been clearly described in the updated VCS PD (Version 02 dated 24/05/2022) and that the means of monitoring described in the plan complies with the requirements of the methodology.

An organizational structure is provided in VCS PD (Version 02 dated 24/05/2022). The functions such as monitoring object, management structure, monitoring program and equipments, data collection ,calibration of meters & metering as well as data management system etc. have been defined. Quality assurance and quality control procedures for recording, maintaining and data

archiving etc. will be ensured according to VCS and CDM EB rules. The calibration of the meter will be implemented as per national standard. An emergency treatment process has been defined in VCS PD (Version 02 dated 24/05/2022) when the meter is in malfunction. Data management and quality control system are quoted in VCS PD (Version 02 dated 24/05/2022). The monitoring staffs will be trained based on the training program described in VCS PD (Version 02 dated 24/05/2022).

CTI confirmed that the monitoring plan in the updated PD (Version 02 dated 24/05/2022) is consistent with that in the registered CDM PDD, registered VCS PD and approved CDM updated PDD, and in compliance with the requirements of ACM0002 (version 20.0). The monitoring plan will give opportunity for real measurements of achieved emission reductions. CTI considers the project participants are capable to implement the monitoring plan.

3.4 Non-Permanence Risk Analysis

Not applicable for the present project activity.

4 VALIDATION CONCLUSION

CTI has performed a validation of renewal of crediting period of the "Shandong Wendeng Zhangjiachan Wind Farm Project" (Ref. No. 1188). The validation was performed on the basis of the updated sections of the PD relating to the baseline, estimated emission reductions and the monitoring plan using the most recent version of baseline and monitoring methodology applicable for the project activity. The final validation opinion was finalized in accordance with the VCS Standard Version 4.2, CDM VVS for project activities version 03.0 and the CDM PS for project activities version 03.0 including the assessment of:

The impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period of the registered VCS project activity at the time of requesting renewal of crediting period of the project activity;

The correctness of the application of the approved methodology and, where applicable, the approved standardized baseline for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period of the registered VCS project activity.

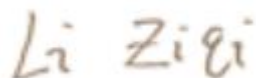
The review of the project design documentation and the subsequent follow-up interviews have provided CTI with sufficient evidence to determine the validity of the original baseline. The project correctly applies the latest baseline and monitoring methodology ACM0002, "Grid-connected electricity generation from renewable sources" version 20.0. CTI is able to confirm:

- (a) The updated PD complies with the valid version of the applicable PD form and instructions therein for filling out the PD;
- (b) Information transferred to the later valid version of the PD form is materially the same as that in the registered PD;
- (c) The baseline and monitoring methodology was applied in accordance with the applicable requirements in the VCS standard and Project Standard;
- (d) The baseline, the estimated GHG emission reductions, and the monitoring plan in the updated PD comply with the applicable requirements in the VCS standard and CDM Project Standard, and the valid version of the methodology that is applicable to the registered VCS project activity;
- (e) The next crediting period of the registered VCS project activity commences on the day immediately after the expiration of the current crediting period;
- (f) The names of project participants in the updated PD are consistent with the names of the project participants in the registered PD.

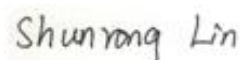
CTI also confirms that there have been no proposed methodology deviations for the second crediting period when submitting this report.

Given that the project is implemented as designed and the underlying assumptions do not change, the project is likely to achieve the estimated amount of annual emission reductions of 75,245 tCO₂e and a total estimated emission reduction of 752,450 tCO₂e over the 2nd crediting period as specified within the final PD.

In summary, it is CTI's opinion that the project activity "Shandong Wendeng Zhangjiachan Wind Farm Project" (Ref. No. 1188) in P. R. China, as described in the PD (Version 02 dated 24/05/2022), meets all relevant VCS and UNFCCC requirements for the renewal of the crediting period.



Mr. Li Ziqi
Team Leader
30/05/2022



Ms. Lin Shunrong
Technical Reviewer
30/05/2022

APPENDIX 1: ABBREVIATIONS

Abbreviations	Full texts
AFOLU	Agriculture, Forestry, and Other Land Use
CCER	China Certified Emission Reduction
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
GHG	Greenhouse gas(es)
EIA	Environmental Impact Assessment
ER	Emission Reduction
ETS	Emission Trading Scheme
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse gas(es)
M&P	Modalities and Procedures
NCPG	North China Power Grid
PD	Project Description
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association

VCU	Verified Carbon Unit
VVB	Validation/Verification Body

APPENDIX 2: REFERENCE LIST

/1/	VCS PD Version 01 dated 17/12/2021, Version 02 dated 24/05/2022
/2/	Estimated ER calculation spreadsheet for VCS Project Description
/3/	Estimated ER calculation spreadsheet for CDM Registered Project Design Document
/4/	Registered CDM PDD (Version 2.0 dated 02/12/2011) Approved updated CDM PDD (version 3.0 dated 08/01/2019)
/5/	Registered VCS PD (Version 01 dated 20/11/2013)
/6/	CDM Validation Report for the first crediting period (Version xx dated 05/12/2015) CDM Validation Report for the renewed crediting period (Version 01 dated 10/01/2019)
/7/	VER/VCU Monitoring Report for Shandong Wendeng Zhangjiachan Wind Farm Project of previous monitoring period: 26/02/2011-29/02/2012, version 01 dated 06/12/2013.
/8/	VER/VCU Monitoring Report for Shandong Wendeng Zhangjiachan Wind Farm Project of previous monitoring period: 01/03/2012-31/12/2015, version 02 dated 18/05/2021.
/9/	VER/VCU Monitoring Report for Shandong Wendeng Zhangjiachan Wind Farm Project of previous monitoring period: 01/01/2016-25/02/2021, version 02 dated 20/04/2021.
/10/	Shenzhen CTI International Certification Co., Ltd.: VCS Verification Report for previous monitoring period: 26/02/2011-29/02/2012, version 01 dated 07/01/2014
/11/	China Building Material Test and Certification Group Co., Ltd.: VCS Verification Report for previous monitoring period: 01/03/2012 to 31/12/2015, version 01 dated 30/05/2021
/12/	Shenzhen CTI International Certification Co., Ltd.: VCS Verification Report for previous monitoring period: 01/01/2016-25/02/2021, version 01.1 dated 25/10/2021
/13/	Environmental Impact Assessment (EIA) prepared by Shandong Academy of Environmental Science in April 2008 EIA approval by Shandong Environmental Protection Bureau, dated 24/06/2008
/14/	Feasibility Study Report (FSR) completed by Shandong Industrial Design Institute Co., Ltd in July 2008 FSR approval by Shandong Development and Reform Commission on 09/12/2008
/15/	Power Purchase Agreement signed with Weihai Electric Power Company
/16/	Grid connection agreement signed between the project owner and the grid company
/17/	Business license of Wendeng Zhangjiachan Wind Power Co., Ltd.

/18/	Business license of CGN Carbon Asset Management (Beijing) Co., Ltd.
/19/	Purchase contract of wind turbines signed with Gamesa Wind (Tianjin) Co., Ltd. on 03/02/2010
/20/	Nameplates of the wind turbines
/21/	Construction start order on 26/02/2010
/22/	Acceptance Report dated 04/02/2010
/23/	Statement on not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions by project proponent dated 29/03/2022
/24/	China Energy Statistical Yearbook 2016-2018
/25/	2019 Baseline Emission Factors for Regional Power Grids in China
/26/	China Electric Power Yearbook 2016-2018
/27/	14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035
/28/	Action Plan for Carbon Dioxide Peaking Before 2030 published by the State Council on 24/10/2021
/29/	Measures for the Administration of Carbon Emission Trading, issued by Ministry of Ecology and Environment of China, dated 31/12/2020
/30/	Enforced company list in China cap & trade scheme, issued by Ministry of Ecology and Environment of China
/31/	Laws and regulations: Renewable Energy Law of the People's Republic of China Environmental Protection Law of the People's Republic of China Law of the People's Republic of China on the Prevention and Control of Solid Waste Pollution
/32/	2006 IPCC Guidelines for National Greenhouse Gas Inventories
/33/	VCS Standard version 4.2, updated on 20/01/2022
/34/	VCS Programme Guide version 4.1, updated on 20/01/2022
/35/	VCS Validation and Verification Manual, version 3.2
/36/	VCS project description template Version 4.1, updated on 20/01/2022
/37/	CDM Validation and Verification Standard for project activities version 03.0

/38/	CDM Project Standard for project activities version 03.0
/39/	CDM project cycle procedure for project activities version 03.0
/40/	Approved methodology , dated 28/11/2019
/41/	Tool to calculate the emission factor for an electricity system, version 07.0
/42/	Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, version 03.0
/43/	Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period, version 03.0.1
/44/	Applicability of sectoral scopes version 01.0
/45/	Measures for the Administration of Carbon Emission Trading, issued by Ministry of Ecology and Environment of China, dated 31/12/2020
/46/	UN 17SDGs: https://www.un.org/sustainabledevelopment/sustainable-development-goals/ UNFCCC: http://cdm.unfccc.int VCS: http://verra.org GS: https://www.goldstandard.org CCER: http://cdm.ccchina.org.cn/ccer.aspx

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Mr. Li Ziqi

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	✓	✓	✓	✓	-	✓

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: *Wu Lin*
Wu LIN
Technical Competent Manager

Shenzhen, 01/01/2021

Ms. Zhang Wenting

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification					
GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
√	-	-	-	-	-

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: *Wu Lin*
Wu LIN

Technical Competent Manager

Shenzhen, 25/01/2022

Ms. Shunrong LIN

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 14: Afforestation and reforestation	TA 14.1: Afforestation and reforestation
SS 15: Agriculture	TA 15.1: Agriculture

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by: *Wu Lin*

Wu LIN

Technical Competent Manager

Shenzhen, 01/01/2021

APPENDIX 4: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS, FORWARD ACTION REQUESTS (CAR/CL/FAR)

CL ID	01	Section no.	1.16	Date: 05/03/2022
Description of CL				
As per the requirement of VCS PD template, PP is requested to provide clarification in Section 1.16 as following:				
- Demonstrate if any emission trading program, GHG allowance mechanism in China? - Demonstrate that GHG emission reductions and removals generated by the project will not be used for compliance under such programs or mechanisms.				
Project proponent response				Date: 24/05/2022
The project has not been registered as a CCER (Chinese Certified Emission Reductions) project in China. The project is not involved in an emission trading program or any other mechanism that includes GHG allowance trading. The GHG emission reductions and removals generated by the project will not be used for compliance in China. The project proponent has signed statement on not being used for the compliance and no double counting claiming of the credits.				
Documentation provided by project proponent				
Updated PD.				
DOE assessment				Date: 30/05/2022
It is confirmed that the project is not included in any other GHG programs, emissions trading programs or other binding limits by checking the UNFCCC, GS, VCS, China Certified Emission Reduction (CCER), other GHG schemes' website, ETS company list and the Statement issued by project proponent. Thus, CL 02 is closed.				

CL ID	02	Section no.	1.17	Date: 05/03/2022
Description of CL				
According to VCS PD template, PP is requested to: - Explain how project activities will result in expected SD contributions - Describe how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same.				
Project proponent response				Date: 24/05/2022
Relevant supplements have been made in PD, please seeing the PD (version 02 dated 25/03/2022) for details.				
Documentation provided by project proponent				

Updated PD.	
DOE assessment	Date: 30/05/2022
It is confirmed by checking the updated PD against the UN SDGs, the project contributes sustainable development involving SDGs 7, 8 and 13, the description is verified to be correct and appropriate, thus, CL 03 is closed.	