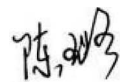




**Validation report form for renewal of crediting period for  
CDM project activities  
(Version 02.0)**

*Complete this form in accordance with the instructions attached at the end of this form.*

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the project activity</b>	Zhangjiakou Chabei Wind Farm Project Ref. 4844
<b>Number and duration of the next crediting period</b>	2 <sup>nd</sup> crediting period from 27/05/2018 to 26/05/2025
<b>Version number of the validation report for RCP</b>	01
<b>Completion date of the validation report for RCP</b>	11/01/2019
<b>Version number of PDD to which this report applies</b>	2.1
<b>Project participants</b>	CGN (Chabei) Wind Power Co., Ltd.
<b>Host Party</b>	People's Republic of China
<b>Applied methodologies and standardized baselines</b>	ACM0002 "Grid-connected electricity generation from renewable sources", Version 19.0
<b>Mandatory sectoral scopes linked to the applied methodologies</b>	1: Energy industries (renewable/non-renewable sources)
<b>Conditional sectoral scopes linked to the applied methodologies</b>	N/A
<b>Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period</b>	179,633 tCO <sub>2</sub>
<b>Name and UNFCCC reference number of the DOE</b>	Name: China Building Material Test & Certification Group Co., Ltd. (CTC) UNFCCC reference number: E-0065
<b>Name, position and signature of the approver of the validation report for RCP</b>	Chen Lu Deputy General Manager 

**SECTION A. Executive summary**

&gt;&gt;

Zhangjiakou Chabei Wind Farm Project (the proposed project activity) is located in Chabei District, Zhangjiakou City, Hebei Province, China. The proposed project activity is developed by CGN (Chabei) Wind Power Co., Ltd. The proposed project activity is to install and operate 67 wind turbines with a capacity of 1,500kW each; the total installed capacity will be 100.5MW. The expected annual equivalent full load operating hour is 2,127h with Plant Load Factor (PLF) of 24.3%. Once fully operational, the proposed project activity is expected to deliver on 213,735MWh of electricity per year to the North China Power Grid (NCPG). The purpose of the proposed project activity is the generation of electricity from wind and the supply of this electricity to the NCPG.

China Building Material Test & Certification Group Co., Ltd. (CTC) was commissioned by CGN (Chabei) Wind Power Co., Ltd. to perform a validation of the request to renew the crediting period of CDM project activity ref. 4844 "Zhangjiakou Chabei Wind Farm Project" in China.

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in 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 approved baseline and monitoring methodology ACM0002. Version 19.0, Grid-connected electricity generation from renewable sources /12/. The validation was performed in accordance with CDM Project Standard version 02.0 /13/ and the Validation and Verification Standard version 02.0 /14/ and included an assessment of:

(a) An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period;

(b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The validation of renewal of crediting period serves as assessment of validity of the baseline of project that has opted for a renewal of the crediting period. The validation is an independent third party assessment of the project's compliance with relevant UNFCCC criteria. In particular, the project's baseline and monitoring plan (MP) are validated in order to confirm that the project baseline, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects seeking renewal of the crediting period and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

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.

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using CTC internal procedures. The validation consisted of following three phases:

- i) A desk review of the project design and the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;
- iii) The resolution of outstanding issues and the issuance of the final validation report and opinion.

The first output of the validation process is a list of Corrective Actions Requests (CARs), presented in the report. Taking into account this output, the project proponent revised its project design document.

The project information provided in the updated PDD for the renewal of crediting period has been verified during the on-site visit. The validation team confirms that the project design, construction, operation and monitoring practice of the project activity are consistent with that described in the PDD.

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In summary, it is CTC's opinion that the project activity "Zhangjiakou Chabei Wind Farm Project" in China, as described in the updated PDD Version 2.1 dated 11/01/2019 meets the relevant UNFCCC requirements for the renewal of the crediting period. Hence CTC requests the renewal of the crediting period of the project activity.

## SECTION B. Validation team, technical reviewer and approver

### B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader	IR	Sun	Chunlin	CTC Beijing	√	√	√	√
2.	Team Member(s)	IR	Bao	Mingxin	CTC Beijing	√	√	√	√

### B.2. Technical reviewer and approver of the validation report for RCP

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Tang	Zhiang	CTC Beijing
2.	Approver	IR	Chen	Lu	CTC Beijing

## SECTION C. Means of validation

### C.1. Desk/document review

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In addition to the updated PDD/5/ submitted to request a renewal of the crediting period of the project activity, CTC reviewed:

- The registered PDD and the corresponding validation report /1//2/
- Verification report and monitoring report in the first crediting period /3/
- Power Purchase Agreement /8/
- Project design document form /4/
- Methodology ACM0002. Version 19.0 applied by the project /12/
- Relevant decisions, clarifications and guidance from the CMP and the CDM EB
- Relevant national and sectoral policies

During the desk review, CTC has applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness;
- Cross checks between information provided in the updated PDD and information from sources other than other used, paying particular attention to project baseline, emission reduction calculation and monitoring plan.

**C.2. On-site inspection**

Duration of on-site inspection: 08/01/2019				
No.	Activity performed on-site	Site location	Date	Team member
1	Open meeting: The validation team introduced the team members, the objectives and scope of the on-site visit. All the meeting participants signed in the attendance sheet. Mr Yang Tao introduced the general information of the Zhangjiakou Chabei Wind Farm Project.	Meeting room	08/01/2019	Bao Mingxin Sun Chunlin
2	The validation team visited the wind turbine, the central control room, the equipment of the station and compared with the information listed in the PDD.	The wind farm	08/01/2019	Bao Mingxin Sun Chunlin
3	The validation team reviewed the power purchase agreement.	Meeting room	08/01/2019	Bao Mingxin Sun Chunlin
4	The close meeting was held. The on-visit was summarized by Sun chunlin	Meeting room	08/01/2019	Bao Mingxin Sun Chunlin

**C.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Wu	Han	CGN New Energy North China Branch Office	08/01/2019	- status of the project; - national and sectoral policies/circumstances and changes; - monitoring plan;	Bao Mingxin Sun Chunlin
2.	Yang	Tao	CGN (Chabei) Wind Power Co., Ltd.	08/01/2019	- status of the project; - national and sectoral policies/circumstances and changes; - monitoring plan;	Bao Mingxin Sun Chunlin
3.	Qin	Wenwen	CGN Carbon Asset Management (Beijing) Co., Ltd.	08/01/2019	- any changes with respect to the registered PDD; - applicability of the selected methodology; - baseline of the project and updates; - monitoring plan;	Bao Mingxin Sun Chunlin

**C.4. Sampling approach**

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N/A

### C.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	0	0	0
Application and selection of methodologies and standardized baselines	0	0	0
Validity of original baseline or its update	0	0	0
Estimated emission reductions or net anthropogenic removals	0	1	0
Validity of monitoring plan	0	0	0
Crediting period	0	0	0
Project participants	0	0	0
Post-registration changes	0	0	0
Others (please specify)	0	0	0
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>

## SECTION D. Validation findings

### D.1. Compliance with PDD form

<b>Means of validation</b>	The updated PDD provided by the project participant has been verified against the latest PDD form /4/ and the registered PDD.
<b>Findings</b>	The validation team confirms that the PDD form used by the project activity for its crediting period renewal is version 10.1, which is valid at the time of submission of the request for the renewal of the crediting period. Information transferred to the updated PDD/5/ is materially the same as that in the registered PDD.
<b>Conclusion</b>	The validation team confirms the compliance of the updated PDD with the PDD form version 10.1, which is valid at the time of submission of the request for the renewal of the crediting period. Information transferred to the updated PDD/5/ is materially the same as that in the registered PDD. This is in compliance with VVS version 2.0 for project activity paragraph 403 and 412(a)(i) and (a)(ii).

### D.2. Application and selection of methodologies and standardized baselines

<b>Means of validation</b>	The validation team assess the application of the baseline and monitoring methodology by reviewing the updated PDD for the second crediting period, associated documentation, previous validation/verifications and telephone reviewing.
<b>Findings</b>	<p>The updated PDD applies the methodology, "Grid-connected electricity generation from renewable sources" ACM0002. Version 19.0 that was the latest version when the project was submitted for crediting period renewal.</p> <p>The project is a Greenfield wind power plant .</p> <p>The Project is not an integrated hydro power project.</p> <p>The project does not involve switching from fossil fuels to renewable energy at the site of the project activity.</p> <p>The project does not involve capacity additions, retrofits or replacements</p> <p>The Project is not a biomass fired power plant.</p> <p>The geographic and system boundaries for NCPG can be clearly identified and information on the characteristics of the grid is available.</p>
<b>Conclusion</b>	The validation team confirms that the project activity correctly applied the selected baseline and monitoring methodology for crediting period renewal, as per required by project standard for project activity v2.0 paragraph 279. The project activity meets each of the applicability conditions of the methodology. This is in compliance with VVS version 2.0 for project activity paragraph 412(a)(iii).

### D.3. Validity of original baseline or its update

<b>Means of validation</b>	The validation team assess the validity of the updated baseline through an assessment of the following issues:
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	<p>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 CDM project activity</p> <p>b) The correctness of the application of the approved methodologies for the determination of the continued validity of the updated baseline and the estimation of GHG emission reductions for the applicable crediting period of the registered CDM project activity.</p>
<b>Findings</b>	<p>The validity of the baseline has been assessed as per 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). The assessment is performed as follows:</p> <p>Step 1: Assess the validity of the current baseline for the next crediting period</p> <p>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies.</p> <p>The current baseline remains the same as it was in the registered PDD. There has been no significant change in the relevant national and/or sectoral policies from the date of registration till now. In absence of the project activity, similar amount of electricity would have been generated by the NCPG. Thus, the validation team concludes that the baseline for the project activity remains same and is in line with the relevant mandatory national and/or sectoral policies.</p> <p>Step 1.2: Assess the impact of circumstances</p> <p>There are no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline scenarios.</p> <p>Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.</p> <p>This sub-step is not applicable since the identified baseline scenario at the validation of the project activity did not correspond to the continuation of use of the current equipment(s) without any investment and, the projects proponents or third party (or parties) would undertake an investment later due, for example, to the end of the technical lifetime of the equipment(s) before the end of the crediting period or the availability of a new technology.</p> <p>Step1.4 Assessment of the validity of the data and parameters</p> <p>The emission factors have been updated by the project participants for the second crediting period of the project activity accordingly.</p> <p>Step 2: Update the current baseline and the data and parameters</p> <p>Step 2.1: Update the current baseline</p> <p>As the applied methodology ACM0002 Version 19.0, the baseline for the Project remains the same as that in the registered PDD as “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, as reflected in the combined margin (CM) calculations described in the ‘Tool to calculate the emission factor for an electricity system’”.</p> <p>Step 2.2: Update the data and parameters</p> <p>Following the “Tool to calculate the emission factor for an electricity system” (version 07.0), the baseline grid emission factor has been updated as per “2017 Baseline Emission Factors for Regional Power Grids in China” (hereafter “Notification of China-Grid EF”) published by China’s DNA on 20/12/2018 /9/. The validation team has confirmed that this is the most recent available data publicly available at the time of the validation for the renewal of the crediting period.</p>
<b>Conclusion</b>	<p>The validation team confirms that the stepwise procedure provided in the methodological tool has been correctly applied by the project activity for assessing validity of original baseline and its update. Validity of original baseline and its</p>

update was therefore confirmed. This is in compliance with VVS version 2.0 for project activity paragraph 404(a) and (b).

#### D.4. Estimated emission reductions or net anthropogenic removals

<b>Means of validation</b>	<p>As per “CDM validation and verification standard for project activities version 02.0”, “Tool to calculate the emission factor for an electricity system” and the public “Notification of China-Grid EF”, CTC has evaluated whether the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring methodology.</p> <p>CTC conducted validation activities to determine whether the equations and parameters in the revised PDD have been correctly applied by comparing them to those in the selected approved methodology.</p> <p>CTC verified the justification given in the revised PDD for the choice of data and parameters used in the equations. Where data and parameters will not be monitored throughout the crediting period of the proposed CDM project activity but have already been determined and will remain fixed throughout the crediting period (ex-ante parameters), CTC assessed that all data sources and assumptions to confirm whether it will result in a conservative estimate of the emission reductions.</p>
<b>Findings</b>	<p>Following the “Tool to calculate the emission factor for an electricity system” (version 07.0), the baseline grid emission factor has been updated as per “2017 Baseline Emission Factors for Regional Power Grids in China” (hereafter “Notification of China-Grid EF”) published by China’s DNA on 20/12/2018 /9/. The updated operating margin (OM) emission factor in the revised PDD is 0.9680 tCO<sub>2</sub>/MWh and the build margin (BM) emission factor is 0.4578 tCO<sub>2</sub>/MWh. The validation team has confirmed that this is the most recent available data publicly available at the time of the validation for the renewal of the crediting period. According to the “Tool to calculate the emission factor for an electricity system” (version 07.0), the default weights: <math>\omega_{OM}=0.75</math> for Operating Margin and <math>\omega_{BM}=0.25</math> for Build Margin in the second crediting period of wind power generation projects are adopted.</p> <p>The combined margin emissions factor is calculated as below:</p> $EF_{grid,CM,y} = \omega_{OM} * EF_{grid,OM,y} + \omega_{BM} * EF_{grid,BM,y} = 0.75 * 0.9680 + 0.25 * 0.4578 = 0.84045 \text{ tCO}_2/\text{MWh}.$ <p>The electricity delivered to the grid is 213,735MWh per annum.</p> <p>Therefore baseline emissions are calculated as: <math>BE_y = EG_{facility} * EF_{grid,CM,y} = 213,735\text{MWh} \times 0.84045 \text{ tCO}_2/\text{MWh} = 179,633 \text{ tCO}_2\text{e}.</math></p> <p><u>Project emission:</u> The project activity is a wind power plant, according to the methodology, <math>PE_y = 0</math></p> <p><u>Leakage:</u> According to the methodology, no leakage needs to be considered for the project activity.</p> <p><u>Emission reduction:</u> The emission reduction <math>ER_y</math> during the crediting period is:</p> $ER_y = BE_y - PE_y - L_y = 179,633 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} = 179,633 \text{ tCO}_2\text{e}$ <p>The emission factor was not conservatively calculated in the Emission Reduction Calculation Spreadsheet version 01 due to round up the decimal. Thus CAR-1 is raised.</p> <p>The emission factor has been conservatively calculated by rounding down in the Emission Reduction Calculation Spreadsheet sheet version 02. Thus CAR-1 is closed.</p>
<b>Conclusion</b>	<p>The validation team confirms that the estimated amount of GHG emission reductions of the project activity is 1,257,431 tCO<sub>2</sub>e for the second crediting period (7 years) from 27/05/2018 to 26/05/2025, resulting in estimated average annual emission reductions of 179,633 tCO<sub>2</sub>e.</p> <p>This is in compliance with VVS version 2.0 for project activity paragraph 412(a)(iv).</p>

**D.5. Validity of monitoring plan**

<b>Means of validation</b>	<p>Based on review of the documented procedures, interviews with relevant personnel, CTC evaluated the monitoring plan for the proposed project to ensure that it is based on the approved monitoring methodology that has been applied, and assessed:</p> <ul style="list-style-type: none"> <li>➤ Whether the monitoring plan contains all necessary parameters;</li> <li>➤ Whether the parameters are clearly described;</li> <li>➤ Whether the means of monitoring described in the plan complies with the requirements of the methodology.</li> <li>➤ Whether the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions can be reported ex post and verified.</li> </ul> <p>This evaluation was based on a review of the provide PDD for the 2<sup>nd</sup> crediting period, associated documentation, previous validation/verifications and telephone reviewing.</p>
<b>Findings</b>	<p>The Project uses the approved consolidated monitoring methodology ACM0002. Version 19.0 for grid-connected electricity generation from renewable sources.</p> <p>Parameters determined ex-ante :</p> <p>The baseline emission factor of 0.84045 tCO<sub>2</sub>/MWh is determined ex-ante based on the most recent information available at the time of requesting for the renewal of the crediting period, which is calculated as a combined margin(CM), consisting of the combination of OM and BM emission coefficient. The parameters applied in the calculation are validated by the validation team to be credible.</p> <p>The parameters to be monitored are as follow:</p> <ul style="list-style-type: none"> <li>● EG<sub>facility,y</sub> is quantity of net electricity generation supplied by the project plant/unit to the grid in year y;</li> <li>● EG<sub>export,y</sub> is quantity of annual electricity exported to the grid by the proposed project;</li> <li>● EG<sub>import,y</sub> is quantity of annual electricity imported from the grid by the proposed project;</li> </ul> <p>All necessary parameters have been contained and clearly described.</p> <p>Management system and quality assurance</p> <p>According to the PDD /5/, the project's monitoring plan outlines the following:</p> <ul style="list-style-type: none"> <li>● Responsibility</li> <li>● Training</li> <li>● Installation of meter</li> <li>● Calibration</li> <li>● Data monitoring</li> <li>● Quality control</li> <li>● Data management</li> </ul> <p>The metering equipment will be calibrated and checked for accuracy in accordance with industry standards. The error resulting of the meters will not exceed 0.5%.</p> <p>Sufficient procedures have been identified in the revised PDD and the implementation of those procedures will enable that the emission reductions of the project can be reported and verified ex-post.</p>
<b>Conclusion</b>	<p>The monitoring plan contained in the PDD Version 2.1 dated 11/01/2019 is in accordance with the monitoring methodology and the approved monitoring plan. The monitoring plan will give opportunity for real measurements of achieved emission reductions.</p>

**D.6. Crediting period**

<b>Means of validation</b>	CTC reviewed the provided PDD, and registration information in the UNFCCC website to confirm the validity of the second crediting period.
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<b>Findings</b>	The first crediting period is from 27/05/2011 to 26/05/2018. As per the Project Cycle Procedure version 02.0, the new crediting period is from 27/05/2018 to 26/05/2025. The start date of the 2 <sup>nd</sup> crediting period is 27/05/2018. It has been correctly listed in the PDD /5/.
<b>Conclusion</b>	The validation team hereby confirms that the 2 <sup>nd</sup> crediting period starts from 27/05/2018 to 26/05/2025 is correct, the 2 <sup>nd</sup> crediting period of the project commences on the day immediately after the expiration of the first crediting period. This is in compliance with VVS version 2.0 for project activity paragraph 412(a)(v).

#### D.7. Project participants

<b>Means of validation</b>	CTC reviewed the provided PDD, and registration information on the UNFCCC website to confirm the project participants.
<b>Findings</b>	The project participants listed in the updated PDD/5/ is CGN (Chabei) Wind Power Co., Ltd. It's same with that listed on the UNFCCC website. Carbon Resource Management Ltd. and Carbon Resource Management SA. were other project participants in the registered PDD. They were withdrawn as of 07/08/2018.
<b>Conclusion</b>	As per the VVS, CTC confirmed that the name of the project participants included in the updated PDD is consistent with the name of the project participant on the UNFCCC website and the latest version of the MoC statement. This is in compliance with VVS version 2.0 for project activity paragraph 405 and 412(a)(vi).

#### D.8. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines	N	N/A	N/A
Corrections	N	N/A	N/A
Change to the start date of the crediting period of the project activity	N	N/A	N/A
Inclusion of a monitoring plan	N	N/A	N/A
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools	N	N/A	N/A
Changes to the project design	N	N/A	N/A
Changes specific to afforestation and reforestation project activities	N	N/A	N/A

### SECTION E. Internal quality control

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The validation report underwent an Internal Technical Review (ITR) before requesting for renewal of crediting period of the registered CDM project activity.

The ITR is an independent process, performed by an internal technical review team (a qualified technical reviewer, with assistance from specialists where necessary), to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as CTC's internal procedures.

The Team Leader provides a copy of the validation report to the technical reviewer, including any necessary validation documentation. The technical reviewer reviews the documentation for conformance with the validation scheme and CTC's internal procedures. This is a comprehensive review of all documentation generated during the validation process. When performing an Internal Technical Review, the technical reviewer ensures that:

- The validation activities have been performed by the validation team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project activity which includes project design, baseline, monitoring plans and emission reduction calculations, internal quality assurance as well as the closure of CARs and CLs during the validation process, review of sample documents.

The technical reviewer may raise Clarification Requests to the validation team and discuss with the Team Leader.

After the agreement of the responses to the Clarification Requests from the validation team as well as the PP(s), the finalized validation report is accepted for further processing such as reporting approval of report uploading via the UNFCCC interface.

## **SECTION F. Validation opinion**

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China Building Material Test & Certification Group Co., Ltd. (CTC) has performed an validation of the request by CGN (Chabei) Wind Power Co., Ltd. to renew the crediting period for the registered CDM project activity “Zhangjiakou Chabei Wind Farm Project” in China (UNFCCC registration Ref. No. 4844). The assessment was performed in accordance with the Validation and Verification Standard (Version 02.0) /14/ and the CDM Project Standard (Version 02.0) /13/ and included an assessment of:

(a) An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant EB guidance with regard to renewal of the crediting period at the time of requesting renewal of crediting period;

(b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The review of the project design documentation and the subsequent follow-up interviews have provided CTC with sufficient evidence to determine the validity of the original baseline scenario and the update of the baseline through an assessment. The project correctly applies the baseline and monitoring methodology ACM0002. Version 19.0 “Grid-connected electricity generation from renewable sources”.

The total emission reductions from the project are estimated to be on the average 179,633 tCO<sub>2</sub>e per year over the 2<sup>nd</sup> renewable crediting period. The emission reduction forecast has been checked, and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is CTC’s opinion that the project participants are able to implement the monitoring plan.

The project information provided in the updated PDD for the renewal of crediting period has been verified during the on-site visit. The validation team confirms that the project design, construction, operation and monitoring practice of the project activity are consistent with that described in the PDD.

In summary, it is CTC’s opinion that the CDM project activity ref. 4844 “Zhangjiakou Chabei Wind Farm Project” in China meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence CTC requests the renewal of the crediting period of the project.

## Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline emissions
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification request
CM	Combined Margin
CO <sub>2</sub> e	Carbon Dioxide Equivalent
CTC	China Building Material Test & Certification Group Co., Ltd.
DOE	Designated operational entity
DNA	Designated National Authority
EB	Executive Board
EF	Emission factor
ER	Emission reductions
FAR	Forward action request
FSR	Feasibility Study Report
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage emissions
LOA	Letter of Approval
OM	Operating Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PE	Project emissions
PO	Project owner
PP	Project Participant
PPA	Power Purchase Agreement
PS	Project Standard
tCO <sub>2</sub> e	Tonne of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

## Appendix 2. Competence of team members and technical reviewers

**Mr. Sun Chunlin** holds a bachelor degree in Building environment and equipment engineering. He gained more than 7 years' experience in Clean Development Mechanism in P. R. China. He has experience in CDM validation and verification for more than 20 projects that applied technologies of

renewable energy, waste heat/gas recovery etc. His qualification and work experience in CDM demonstrate her sufficient sectoral competence in TA1.2 “Energy industries (Renewable)”.

**Ms. Bao Mingxin** holds a bachelor degree in Electronic Engineering and Automation and master degree in Mathematical Finance. She gained more than three years in GHG project verification in P. R. China and got training in GHG, CDM and ISO14064. She has experience in GHG project verification for more than 50 projects that applied technologies of power sector, cement industry, iron and steel industry etc. She has experience in CDM validation and verification for 2 projects that applied technologies of renewable energy. Her qualification, industrial experience and experience in CDM demonstrate her sufficient competence as an auditor.

**Mr. Tang Zhiang** holds a master degree in Thermodynamic Engineering. He gained more than 10 years’ technical experience in thermal engineer for the energy analysis and thermal control more than 15 years’ experience in Clean Development Mechanism in P.R China. He worked in CDM filed as Technical Reviewer for CDM/GS/VCS/WCD projects and was involved into about 400 technical review projects. The projects applied technologies of energy industrial, energy distribution, energy demand, waste handling and disposal and manufacturing industries. His qualification, industrial experience and experience in CDM demonstrate his sufficient sectoral competence in “Energy industries (Renewables)”.

### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	CGN (Chabei) Wind Power Co., Ltd.	Registered PDD Version 1.2	Dated 21/02/2011	Others
2	DNV	Validation report of the project activity	Dated 09/05/2011	Others
3	N/A	Monitoring report and corresponding verification report for the monitoring periods of the 1st crediting period	<a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1306154648.92/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1306154648.92/view</a>	Others
4	CDM-EB	Project design document form	version 10.1, dated 28/06/2017	Others
5	CGN (Chabei) Wind Power Co., Ltd.	Updated PDD to request a renewal of crediting period of the project version 2.1	Dated 11/01/2019	PP
6	CGN (Chabei) Wind Power Co., Ltd.	Emission Reduction Calculation Spreadsheet version 01	Dated 26/12/2018	PP
7	CGN (Chabei) Wind Power Co., Ltd.	Emission Reduction Calculation Spreadsheet version 02	Dated 09/01/2019	PP
8	N/A	Power Purchase Agreement	/	PP
9	Ministry of Ecology and Environment of the People's Republic of China	2017 Baseline Emission Factors for Regional Power Grids in China	<a href="http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf">http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf</a>	Others
10	China Power Yearbook Editing Committee	China Electric Power Yearbook	N/A	Others

11	China Energy Yearbook Editing Committee	China Energy Statistical Yearbook	N/A	Others
12	CDM-EB	Methodology ACM0002. Version 19.0	Dated 31/08/2018	Others
13	CDM-EB	CDM project standard for project activities Version 02.0	Dated 29/11/2018	Others
14	CDM-EB	CDM validation and verification standard for project activities Version 02.0	Dated 29/11/2018	Others
15	CDM-EB	CDM project cycle procedure for project activities Version 02.0	Dated 29/11/2018	Others
16	CDM-EB	Tool to calculate the emission factor for an electricity system Version 07.0	Dated 01/11/2017	Others
17	CDM-EB	Assessment of the validity of the current/original baseline and update of the baseline at the renewal of the crediting period	Version 03.0.1, dated 02/03/2012	Others
18	CDM-EB	Project design document form	version 10.1, dated 28/06/2017	Others
19	CGN (Chabei) Wind Power Co., Ltd.	Updated PDD to request a renewal of crediting period of the project version 2.0	Dated 26/12/2018	PP

## Appendix 4. Clarification requests, corrective action requests and forward action requests

**Table 1. CL from this validation**

N/A

**Table 2. CAR from this validation**

<b>CAR ID</b>	CAR-1	<b>Section no.</b>	D.4	<b>Date:</b> 09/01/2019
<b>Description of CAR</b>				
The emission factor was not conservatively calculated.				
<b>Project participant response</b>				<b>Date:</b> 09/01/2019
The calculation method of the emission factor has been revised, which is conservative.				
<b>Documentation provided by project participant</b>				
ER sheet Version 02 dated 09/01/2019 PDD Version 2.1 dated 11/01/2019				
<b>DOE assessment</b>				<b>Date:</b> 09/01/2019
The emission factor has been conservatively calculated. Thus CAR-1 is closed.				

**Table 3. FAR from this validation**

N/A

**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 02.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory		
Document Type: Form		
Business Function: Renewal of crediting period		
Keywords: crediting period, project activities, validation report		