




**Validation report form for renewal of crediting period for  
CDM project activities  
(Version 03.0)**

*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>	Guoshuitou Diaobingshan Quanyangou Wind Power Project Ref. Num: 5851
<b>Number and duration of the next crediting period</b>	The 2 <sup>nd</sup> Crediting Period 7 Years (01/04/2019 to 31/03/2026)
<b>Version number of the validation report</b>	Version: 02
<b>Completion date of the validation report</b>	30/08/2019
<b>Version number of PDD to which this report applies</b>	Version: 05
<b>Project participants</b>	CTGNE Diaobingshan Wind Power Co., Ltd. Gunvor International B.V., Amsterdam, Geneva Branch
<b>Host Party</b>	People's Republic of China
<b>Applied methodologies and standardized baselines</b>	ACM0002: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources (Version 19.0).
<b>Mandatory sectoral scopes</b>	01
<b>Conditional sectoral scopes, if applicable</b>	N/A
<b>Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period</b>	94,940 tCO <sub>2</sub> e
<b>Name and UNFCCC reference number of the DOE</b>	China Quality Certification Center Ref. Num.: CDM-E-0044
<b>Name, position and signature of the approver of the validation report</b>	Vice President: SONG, Xiangdong 

**SECTION A. Executive summary**

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CTGNE Diaobingshan Wind Power Co., Ltd. has commissioned China Quality Certification Center (CQC) to validate the renewal of the crediting period for the registered project “Guoshuitou Diaobingshan Quanyangou Wind Power Project” (Ref.5851) (hereinafter referred as the Project Activity) according to the UNFCCC criteria for the Clean Development Mechanism (CDM) for renewal of crediting period, as well as criteria given to provide for consistent project operations, monitoring and reporting, and the CDM modalities and procedures, the subsequent decisions by the CDM Executive Board and requirements of host party (China) for CDM and baseline .

CQC has applied the principles of consistency, transparency, impartiality, independence and safeguarding against conflicts of interest, confidentiality to perform this validation. Based on CDM validation and verification standard for project activities (version 02.0)<sup>/13/</sup> (hereinafter referred to as VVS), CDM project standard for project activities (version 02.0)<sup>/14/</sup> (hereinafter referred to as PS) and CDM project cycle procedure for project activities (version 02.0)<sup>/15/</sup> (hereinafter referred to as PCP), CQC validation team applied the means of document review, follow-up interview, information cross-check and reference, methodology review and/or sampling to perform the validation. The assessment was performed in accordance with the VVS (Ver.02.0) to include:

- (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 a registered CDM project activity, at the time of requesting renewal of crediting period of the project activity;
- (b) The correctness of the application of the approved methodologies and, where applicable, the approved standardized baselines and the other methodological regulatory documents for the determination of the continued validity of the baseline or its update, and the estimation of GHG emission reductions or net anthropogenic GHG removals for the applicable crediting period of the registered CDM project activity.

The review of updated PDD (version 05)<sup>/3/</sup> and supporting documents related to baseline and monitoring methodology, the subsequent background investigation and follow-up interviews have provided CQC with sufficient evidence to determine the fulfillment of CDM requirements. The criteria of validation include PS, PCP, VVS, as well as CQC's validation procedures.

The purpose of the project activity is to utilise a wind power facility to generate zero greenhouse gas (GHG) emissions electricity for the Northeast China Power Grid.

During validation, 1 Clarification (CL) was raised by CQC validation team and have been successfully closed.

In detail, the conclusions can be summarized as follows:

- The updated PDD (Version 05) has been completed using the valid version of the applicable PDD form, following the instructions therein;
- The information transferred to the updated PDD (Version 05) is materially the same as the in the registered PDD (Version 03);
- The project correctly applies the methodology ACM0002 “Grid-connected electricity generation from renewable sources (Version 19.0.0)”, “Tool to Calculate the Emission Factor for an Electricity System” (Version 07.0), “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (Version 03.0) and 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) in accordance with the applicable requirements in the “CDM project standard for project activities”;

- The baseline, the estimated GHG emission reductions and the monitoring plan in the updated PDD (Version 05) comply with the applicable requirements in the “CDM project standard for project activities”, and the valid version of the methodologies and the other methodological regulatory documents that are applied in the updated PDD (Version 05);
- The second crediting period of the project activity commences on the day immediately after the expiration of the current crediting period;
- The names of the project participants in the updated PDD (Version 05) are consistent with the names of the project participants in the latest version of the MoC statement;
- The calculation of the emission reductions is carried out in a transparent and conservative manner, so that the calculated annual emission reductions of 94,940 tCO<sub>2</sub>e are most likely to be achieved within the second crediting period.
- There are no proposed post-registration changes for the second crediting period of the project.

The conclusions of this report show that the Project Activity, as it was described in the project documentation, is in line with all criteria applicable for the validation. CQC thus requests for renewal of the crediting period of this CDM project.

## 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	Wang	Zhenyang	Central Office	√	/	√	√
2.	Validator	IR	Zhang	Lixin	Central Office	√	/	√	√

### 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	Nie	Xi	Central Office
2.	Technical reviewer	IR	Wang	keli	Central Office
3.	Approver	IR	Song	Xiangdong	Central Office

## SECTION C. Means of validation

### C.1. Desk/document review

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The Project Activity was registered on 15/03/2012 with the PDD (Version 03,22/02/2012)<sup>1/</sup>. PP submitted updated PDD (Version 04)<sup>2/</sup> and supporting background documents related to the project crediting period renewal to CQC in July 2019.

PP submitted updated PDD (Version 05) and supplementary evidence for closing the CAR and CL to CQC on 29/08/2019.

Furthermore, the validation team has used technical information from sources other than PDD such as host party legislations, technical reports, statistical yearbooks related to the project design. In order to ensure the transparency of the decision making process, the reference codes listed in Appendix 3 are used in this report.

### C.2. On-site inspection

Duration of on-site inspection: N/A				
No.	Activity performed on-site	Site location	Date	Team member

The CQC did not conduct an on-site inspection due to the following reasons:

According to the paragraphs 30 and 31 of CDM VVS:

“30. It is mandatory for the DOE to conduct an on-site inspection at validation for the proposed CDM project activity if: (a) Its estimated annual average of greenhouse gas (GHG) emission reductions or net anthropogenic GHG removals is more than 100,000 tCO<sub>2</sub>; or (b) There is pre-project information that is relevant to the requirements for registration of the project activity and may not be traceable after the registration.”

“31. For cases that are not referred to in paragraph 30 above, it is optional for the DOE to conduct an on-site inspection at validation. If the DOE does not conduct an on-site inspection as a means of validation, it shall describe the alternative means used and justify that they are sufficient for the purpose of validation. ”

Through checking the registered PDD and the corresponding validation report, the CQC validation team confirms that its estimated annual average of greenhouse gas (GHG) emission reductions is less than 100,000 tCO<sub>2</sub>. Besides, the proposed project is a green field project and there is no pre-project information before the project.

Hence, The CQC validation team has not conducted an on-site visit, which is in conformity with paragraphs 30 and 31 of CDM VVS (version 02.0).

The alternative means used and the justification of their sufficiency for the purpose of validation are demonstrated as follow:

During the desk review, relevant documents including the registered PDD and corresponding validation report for the 1st crediting period, Monitoring Report and verification report for the first monitoring period (01 Apr 12 - 28 Feb 14) and other relevant background documents were provided and assessed. The validation team was able to confirm that information transferred to the updated PDD for the 2nd crediting period is materially the same as that in the registered PDD. Besides, the validation team conducted interviews with the PP representatives and operation staff through telephone. It is confirmed that the project had been implemented and monitored in line with the registered PDD, and there is no change of the project design, construction, operation and monitoring plan.

Besides, the validation team noticed that the project has been verified and got CERs issued during the 1st crediting period and the implementation of the project is consistent with registered PDD. Therefore, without on-site visit, the validation team can confirm the implementation of the project.

### C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Zhao	Shengli	manager, CTGNE Diaobingshan Wind Power Co., Ltd.	20/08/2019	- Status of the Project Activity and any modifications with respect to the registered	Wang Zhenyang Zhang Lixin
2	Liu	Haifeng	Site Supervisor, CTGNE			

			Diaobingshan Wind Power Co., Ltd.		PDD. - Applicability of selected methodology. - National policies and changes - Baseline of the Project Activity and its updates - Emission Factors and their updates - Monitoring plan.	
3	Hu	Lijiao	Project Manager, Climate Bridge Co. Ltd.			
4	Liu	Fujia	Manager, State Grid Liaoning Electric Power Supply Company	20/08/2019	National and local policies or regulations.(Telephone interview)	Wang Zhenyang

#### C.4. Sampling approach

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The sampling approach was not used for the validation.

#### 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	N/A	N/A	N/A
Application and selection of methodologies and standardized baselines	N/A	N/A	N/A
Validity of original baseline or its update	N/A	N/A	N/A
Estimated emission reductions or net anthropogenic removals	N/A	N/A	N/A
Validity of monitoring plan	1	N/A	N/A
Crediting period	N/A	N/A	N/A
Project participants	N/A	N/A	N/A
Post-registration changes	N/A	N/A	N/A
Others (please specify)	N/A	N/A	N/A
<b>Total</b>	<b>1</b>	<b>N/A</b>	<b>N/A</b>

### SECTION D. Validation findings

#### D.1. Compliance with PDD form

Means of validation	Document review the PDD against the PDD form template and the registered PDD.
Findings	<p>Compliance with PDD Form:</p> <ul style="list-style-type: none"> <li>➤ The submitted PDD (Version 05) used the valid version of the CDM-PDD-FORM (Version 11.0);</li> <li>➤ The PDD is complete and meet all relevant requirements of instructions for filling out the Project design document form (Version 11.0)<sup>8/</sup> for CDM project activities and "CDM project standard for project activities" (Version 02.0)<sup>14/</sup>;</li> </ul> <p>Material Information in the PDD: Guoshuitou Diaobingshan Quanyangou Wind Power Project is located at the 15km southwestern of Diaobingshan City, Tieling City, Liaoning Province, People's</p>

	<p>Republic of China. The project entity is CTGNE Diaobingshan Wind Power Co.,Ltd.</p> <p>The Project Activity utilizes wind power to generate electricity. The project involves the installation of 33 wind turbines with capacity of 1500kW each, which amount to a total installed capacity of 49.5MW. The estimated electricity supplied to Northeast China Power Grid (NEPG) by the Project Activity is 103,885MWh per year. As NEPG is dominated by thermal power generation, the Project activity could lead to greenhouse gas (GHG) emission reductions.</p> <p>The Project Activity was registered as CDM project on 15/03/2012 with Reference No.5851. The first crediting period of the Project Activity is from 01/04/2012-31/03/2019.</p> <p>The second crediting period of the Project Activity would be 01/04/2019-31/03/2026.</p> <p>Following the methodology, during the second crediting period, the expected annual emission reductions are 94,940 tCO<sub>2</sub>e and 664,580tCO<sub>2</sub>e in total.</p> <p>The main technical specifications of the wind turbine are provided in the following table:</p> <table><tr><th colspan="2">Vane</th><th colspan="2">Generator</th></tr><tr><td>Type</td><td>GW82/1500</td><td>Type</td><td>Direct Drive Permanent Magnet Synchronous Generator</td></tr><tr><td>Diameter of rotor</td><td>82m</td><td>Rated capacity</td><td>1,580kW</td></tr><tr><td>Cut in wind speed</td><td>3m/s</td><td>Rated voltage</td><td>690V</td></tr><tr><td>Cut out wind speed</td><td>22m/s</td><td>Rated speed</td><td>17.3rpm</td></tr><tr><td>Speed</td><td>9.0-17.3rpm</td><td>Load factor</td><td>0.2396</td></tr><tr><td>Rated wind speed</td><td>10.3m/s</td><td>Rated frequency</td><td>50Hz</td></tr><tr><td>Vane number</td><td>3</td><td>Annual operation hour</td><td>2099h</td></tr><tr><td>Lifetime</td><td>20 years</td><td>Life time</td><td>20 years</td></tr><tr><td>Manufacturer</td><td>Xinjiang Goldwind Science Ltd.</td><td>Manufacturer</td><td>Xinjiang Goldwind Science Ltd.</td></tr></table>	Vane		Generator		Type	GW82/1500	Type	Direct Drive Permanent Magnet Synchronous Generator	Diameter of rotor	82m	Rated capacity	1,580kW	Cut in wind speed	3m/s	Rated voltage	690V	Cut out wind speed	22m/s	Rated speed	17.3rpm	Speed	9.0-17.3rpm	Load factor	0.2396	Rated wind speed	10.3m/s	Rated frequency	50Hz	Vane number	3	Annual operation hour	2099h	Lifetime	20 years	Life time	20 years	Manufacturer	Xinjiang Goldwind Science Ltd.	Manufacturer	Xinjiang Goldwind Science Ltd.
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Lifetime	20 years	Life time	20 years																																						
Manufacturer	Xinjiang Goldwind Science Ltd.	Manufacturer	Xinjiang Goldwind Science Ltd.																																						
Conclusion	<p>CQC confirms that the submitted updated PDD (Version 05) is in compliance with the valid version of the applicable PDD form template (CDM-PDD-FORM Version 11.0) and the instructions therein for filling out the PDD form.</p> <p>CQC also confirms the information transferred to the PDD form (Version 11.0) is materially the same as that in the registered PDD<sup>1/</sup>.</p>																																								

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

<b>Means of validation</b>	Document review and interview
<b>Findings</b>	<p>At the time of registration, the project participant had applied the methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.1.0). The updated PDD (Version 05) applied the valid version of ACM0002 "Grid-connected electricity generation from renewable sources" (Version 19.0) at the time of submission of the updated PDD for the renewal of the crediting period, which is in line with the para. 279 (a) of PS-PA (Ver. 02.0)<sup>15/</sup>.</p> <p>The validation team verified that the Project Activity meets all applicability criteria of the baseline methodology of ACM0002 (Version 19.0)<sup>5/</sup> and the applicability of the methodology is justified as following:</p>

	<p>The Project Activity is a Greenfield wind power generation project;  The Project Activity does not involve capacity addition, retrofit, rehabilitation or replacement of existing plant(s)/unit(s);  The Project Activity does not involve switching from fossil fuels to renewable energy sources;  The Project Activity is not biomass fired power plant.</p> <p>Therefore, the methodology applied by the updated PDD (Version 05) , ACM0002 Version 19.0, is applicable to the project activity.  The standardized baselines is not applied in the registered PDD and also not applicable to the project activity..</p> <p>In addition, this methodology also refers to the latest approved version of the following tools:</p> <ul style="list-style-type: none"> <li>● Tool to calculate the emission factor for an electricity system (version 07.0)<sup>/6/</sup>  Reference: <a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf</a></li> <li>● 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)<sup>/7/</sup>.  Reference: <a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf</a></li> <li>● Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)<sup>/16/</sup>.  Reference: <a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf</a></li> </ul>
<b>Conclusion</b>	CQC confirms that the Project Activity meets the applicability conditions of ACM0002 (Version 19.0) and the tools applied in the updated PDD (version 05) listed above.

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

<b>Means of validation</b>	Document review, interview and reference to related information
<b>Findings</b>	<p>As demonstrated in the registered PDD, the baseline scenario for the project was “provision of an equivalent amount of annual electricity generation by NEPG”.</p> <p>With reference to the “Tool to assessment of the validity of the original/current baseline and to update of the baseline at the renewal of the crediting period (Version 03.0.1)<sup>/17/</sup>”, the assessment of validity of original baseline or its update in updated PDD(version 05) is done in steps as follows:</p> <p><b>Step 1: Assess the validity of the current baseline for the next crediting period</b>  <b>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</b></p> <p>The project was registered on 15/03/2012 and 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 since the date of earlier registered PDD till now. Although national policies favor the development of renewable energy sources, NEPG is still dominated by the thermal power plants. The total generation produced by fossil fuel power plants accounts for more than 80% of total electricity generation in NEPG and this percentage has not been changed significantly in recent 5 years. Hence in the absence of the project activity, electricity would still have been generated in the existing grid-connected power plants or by the addition of new generation sources from NEPG. The validation team confirms that there is no mandatory national/sectoral regulation which requires the installation of a wind power plant. Hence, it can be concluded that the current baseline still complies with all relevant policies.</p> <p>Therefore, the validation team confirms that the current baseline is in compliance with the relevant mandatory national and/or sectoral policies, and the current baseline does not need to be updated for the second crediting period.</p> <p><b>Step 1.2: Assess the impact of circumstances</b></p>

As per the requirement of the sub-step, it has been assessed that there is no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline scenarios.

As per "China Electric Power Yearbook 2016", the installed capacity in NEPG is as follows:

	Hydropower	Thermal	Solar PV	Wind power	Other	Total
Installed capacity (10 <sup>4</sup> kW)	772	6898	25.1	1586	300	9581.1
Percentage (%)	8.06	72.00	0.26	16.55	3.13	100

The statistic data above illustrate that NEPG is still dominated by the thermal power plants and there is no change in market characteristic.

**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**

The project is a Greenfield project with a lifetime of 20 operation years, with no baseline equipment(s) or an investment for the crediting period for which renewal is requested, this step is not applicable.

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

The grid emission factor was determined at the start of the crediting period and was not monitored during the crediting period. The Designated National Authority (DNA) of China issued the notice "2017 Baseline Emission Factors for Regional Power Grid in China"<sup>13/</sup> on 20/12/2018, which was the latest grid data available for the project. The emission factors  $EF_{grid,OM,y}$  and  $EF_{grid,BM,y}$  of the NEPG the project connected is updated in the notice. The values of  $W_{OM}$  and  $W_{BM}$  also need to update for the second crediting period as per the "Tool to calculate the emission factor for an electricity system" (Version 07.0)<sup>14/</sup>. The parameters mentioned above which were determined at the start of the first crediting period are not valid for the crediting period to be renewed. Thus the baseline emissions need to be updated with the application of the new data available.

As per the tool for "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)", through the application of Steps 1.1, 1.2, 1.3 and 1.4, it is confirmed that the current baseline is still valid for the subsequent crediting period. However, the data needs to be updated. Therefore, Step 2 needs to be applied.

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

As per the tool for "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)", this step is applicable because the sub-step 1.4 showed that the data of the current baseline need to be updated.

**Step 2.1: Update the current baseline**

This step should be applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period. However, as explained in step 1.1, the current baseline does not need to be updated at this step.

**Step 2.2: Update the data and parameters**

Under the baseline scenario, the electricity that is produced under this project activity would be supplied from the NEPG. Therefore, the emission factor for NEPG is adopted as the value for  $EF_{grid, CM, y}$ .

The calculation of grid power emission factor ( $EF_{grid, CM, y}$ ) is in accordance with



	<p>the "Tool to calculate the emission factor for an electricity system" (Version 07.0). In addition, the calculation also refers to "2017 Baseline Emission Factors for Regional Power Grids in China" published by Chinese DNA on 20/12/2018.</p> <p>CQC validation team checked the website <a href="http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf">http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf</a> and the information provided in Appendix 4 of PDD and found that the sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and a reasonable estimate of the emission reductions will be resulted in.</p> <p>The validation team confirms the data sources are updated and the calculation is correct.</p>
<b>Conclusion</b>	CQC confirms that the current baseline scenario is still valid for the second crediting period and the data and parameter have been updated in accordance with the related CDM requirements.

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

<b>Means of validation</b>	Document Review, Reference of information and Calculation
<b>Findings</b>	<p>Methodologies for calculating emission reductions are documented. The estimation of GHG emissions is in accordance with the formulae given in the baseline and monitoring methodology ACM0002 (Version 19.0).</p> <p><b>Baseline emissions:</b></p> $BE_y = EG_{PJ, y} \times EF_{grid, CM, y} \quad (1)$ <p>Where:</p> <p><math>BE_y</math>: is baseline emissions in year y (tCO<sub>2</sub>/yr);</p> <p><math>EG_{PJ, y}</math>: is 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/yr);</p> <p><math>EF_{grid, CM, y}</math>: is combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system(version 07.0) (tCO<sub>2</sub>/MWh).</p> <p>For the project activity, <math>EG_{PJ, y} = EG_{facility, y}</math> (2)</p> <p>Where:</p> <p><math>EG_{facility, y}</math>: is quantity of net electricity generation supplied by the project plant to the grid in year y (MWh/yr).</p> <p><b>Project emissions:</b></p> <p>This is a Greenfield wind farm project, thus, project emissions are considered as zero according to the applied methodology.</p> <p><b>Leakage:</b></p> <p>The leakage emission is estimated as zero for the proposed project according to the applied methodology.</p> <p><b>Emission reductions:</b></p> $ER_y = BE_y - PE_y \quad (3)$ <p>Where:</p> <p><math>ER_y</math> = Emissions reductions in year y (tCO<sub>2</sub>e/yr);</p> <p><math>BE_y</math> = Baseline emissions in year y (tCO<sub>2</sub>/yr);</p> <p><math>PE_y</math> = Project emissions in year y (tCO<sub>2</sub>e/yr);</p> <p>CQC validation team has assessed the calculations of project emissions, baseline emissions and emission reductions. Corresponding calculations are carried out based on calculation spreadsheets.</p>

	<p>The parameters and equations presented in the updated PDD(version 05) and further documentation have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulas presented in the calculation files.</p> <p>The calculations of the baseline emission, project emissions and emission reduction are documented in section B.6.3 the updated PDD (Version 05). Compared with the registered PDD (Version 03), the only data that have been updated is the grid emission factor.</p> <p>According to 2017 Baseline Emission Factors for Regional Power Grid in China<sup>/12/</sup> issued by Chinese DNA, the combined margin emissions factor <math>EF_{grid,CM,y}</math> should be calculated as the weighted average of the Operating Margin emission factor (<math>EF_{grid,OM,y}</math>) and the Build Margin emission factor (<math>EF_{grid,BM,y}</math>), where <math>\omega_{OM} = 0.75</math> and <math>\omega_{BM} = 0.25</math> for the first crediting period and the subsequent crediting periods.</p> <p>The validation team confirms that <math>EF_{grid,OM,y}</math> and <math>EF_{grid,BM,y}</math> are correctly calculated in the updated PDD(version 05). The result of the updated grid emission factor is below:</p> $EF_{grid,CM,y} = 1.1082 \text{ tCO}_2\text{e/MWh} \times 0.75 + 0.3310 \text{ tCO}_2\text{e/MWh} \times 0.25 = 0.9139 \text{ tCO}_2\text{e/MWh}.$
<b>Conclusion</b>	<p>The validation team confirms that the estimated emission reduction calculation in the updated PDD(version 05) is complies with the requirement of the latest version of methodology ACM0002 (Version 19.0) and Tool to calculate the emission factor for an electricity system (version 07.0). The estimated electricity supplied to Northeast China Power Grid (NEPG) by the Project Activity is 103,885MWh per year. The project activity is expected to reduce GHG emissions of 94,940 tCO<sub>2</sub>e annually in the second crediting period.</p>

## D.5. Validity of monitoring plan

<b>Means of validation</b>	Document Review and interview
<b>Findings</b>	<p>According to the registered PDD<sup>/1/</sup>, the quantity of net electricity generation supplied (<math>EG_{facility,y}</math>) by the project to the grid equals to the difference of <math>EG_{output,y}</math> and <math>EG_{input,y}</math>.</p> <p>The monitored data includes annual electricity delivered to NEPG by the project (<math>EG_{output,y}</math>) and electricity input from grid by the project (<math>EG_{input,y}</math>). All the monitored data will be measured by electricity meters and continuously recorded by online computer measurement system.</p> <p>Both <math>EG_{output,y}</math> and <math>EG_{input,y}</math> are measured by a bi-direction electricity meter M2 (gateway meter), which precision is 0.2S. It is installed at Diaobingshan Yici Substation. The backup bi-direction electricity meter M1 with 0.2S precision is installed at the plant, which is owned by the project entity. These two electricity meters will be calibrated according to the relevant industry standards. For the <math>EG_{output,y}</math> and <math>EG_{input,y}</math>, they will be cross check by the records of purchase electricity made by power grid company, and the conservative value will be used.</p> <p>The main meter M2 is installed by local power-grid company and the on-site meter M1 is installed by the project owner together with the technicians of local power-grid company. CQC has checked the agreement signed between the project owner and the power grid company that defines the metering arrangements and the required quality control procedures to ensure accuracy.</p> <p>However <b>CL01</b> was raised during the validation as the calculation of <math>EG_{facility,y}</math> was not stated in the updated PDD(version 04).</p> <p>PP has made relevant corrections in updated PDD (Version 05) . Thus <b>CL 01</b> was successfully closed. (Ref Appendix 4 Clarification requests, corrective action requests and forward action requests)</p> <p>Sufficient procedures have been identified in the updated PDD and the implementation of those procedures will make sure that the emission reductions of the project can be reported and verified ex-post. The management and operation team for the monitoring activity of the project has been described in the updated</p>

	PDD. CQC confirms that the monitoring plan described in the updated PDD (Version 05) is consistent with the registered PDD, and no proposed post-registration changes for the next crediting period.
<b>Conclusion</b>	CQC confirms the monitoring plan in the updated PDD (version 05) comply with the requirements in the "CDM project standard for project activities (version 02.0)", and the latest version of the methodologies ACM0002 (Version 19.0), and no proposed post-registration changes for the next crediting period.

#### D.6. Crediting period

<b>Means of validation</b>	Document Review
<b>Findings</b>	The project was registered on 15/03/2012 as CDM project and the PPs have chosen a renewable crediting period with the first crediting period from 01/04/2012 to 31/03/2019. According to EB meeting report of 100 meeting, "Notification of renewal intention from project participants is no longer required, and therefore there is no longer a penalty of "unclaimable period" of CERs for late notification", and "A DOE shall submit a renewal request to the secretariat no earlier than 270 days prior to, but no later than one year after, the expiry of the crediting period, otherwise the renewal is no longer possible for the project activity". PP selected CQC to conduct the RCP validation no later than one year after the expiry of the 1st crediting period, and the second crediting period described in the updated PDD is from 01/04/2019 to 31/03/2026.
<b>Conclusion</b>	CQC confirms that the second crediting period of the registered CDM project activity commences on the day immediately after the expiration of the first crediting period, and the second crediting period is correctly listed in the updated PDD (version 05).

#### D.7. Project participants

<b>Means of validation</b>	Document Review and interview
<b>Findings</b>	The project participants described in the section A.4 of the updated PDD (Version 05) are CTGNE Diaobingshan Wind Power Co., Ltd. and Gunvor International B.V., Amsterdam, Geneva Branch which are confirmed by the PP during interview. The validation team also checked the latest MoC form <sup>24/</sup> valid as of 18/03/2014 and found the project participant listed in the MoC are consistent with those in the updated PDD (version 05).
<b>Conclusion</b>	CQC confirms the names of the project participants in the updated PDD (version 05) are consistent with the names of the project participants in the latest version of the MoC statement.

#### 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, standardized baselines or other methodological regulatory documents <sup>1</sup>	N	N/A	N/A
Corrections	N	N/A	N/A
Change to the start date of the crediting period	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 methodological regulatory documents	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

<sup>1</sup> Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied (selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

**SECTION E. Internal quality control**

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This final validation report including the initial validation findings underwent a technical review before being submitted to PP and requesting approval of the crediting period renewal according to CQC internal procedure CDMP08. The technical review was performed by two technical reviewers qualified in accordance with CQC's internal procedure CDMP01.

**SECTION F. Validation opinion**

&gt;&gt;

CTGNE Diaobingshan Wind Power Co., Ltd. has commissioned China Quality Certification Center (CQC) to validate the renewal of the crediting period for the registered project "Guoshuitou Diaobingshan Quanyangou Wind Power Project" (Ref.5851) (hereinafter referred as the Project Activity) according to the UNFCCC criteria for the Clean Development Mechanism (CDM) for renewal of crediting period, as well as criteria given to provide for consistent project operations, monitoring and report, and the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board.

CQC has applied the principles of consistency, transparency, impartiality, independence and safeguarding against conflicts of interest, confidentiality to perform this validation. Based on VVS (Ver.02.0), CQC validation team applied the means of document review, follow-up interview, information cross-check and reference, methodology review and/or sampling to perform the validation. The assessment was performed in accordance with the VVS (Ver.02.0) to include:

- (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 a registered CDM project activity, at the time of requesting renewal of crediting period of the project activity;
- (b) The correctness of the application of the approved methodologies and, where applicable, the approved standardized baselines and the other methodological regulatory documents for the determination of the continued validity of the baseline or its update, and the estimation of GHG emission reductions or net anthropogenic GHG removals for the applicable crediting period of the registered CDM project activity.

The review of updated PDD(version 05) and supporting documents related to baseline and monitoring methodology, the subsequent background investigation and follow-up interviews have provided CQC with sufficient evidence to determine the fulfilment of CDM requirements. The criteria of validation include PS, PCP, VVS, as well as CQC's validation procedures.

The purpose of the project activity is to utilise a wind power facility to generate zero greenhouse gas (GHG) emissions electricity for the Northeast China Power Grid.

During validation, 1 Clarification (CL) was raised by CQC validation team and have been successfully closed.

In detail, the conclusions can be summarized as follows:

- The updated PDD(version 05) has been completed using the valid version of the applicable PDD form, following the instructions therein;
- The information transferred to the updated PDD (Version 05) is materially the same as the in the registered PDD (Version 03);
- The project correctly applies the methodology ACM0002 "Grid-connected electricity generation from renewable sources (Version 19.0.0)", " Tool to Calculate the Emission Factor for an Electricity System" (Version 07.0) and " Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (Version 03.0) and 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) in accordance with the applicable requirements in the “CDM project standard for project activities”;

- The baseline, the estimated GHG emission reductions and the monitoring plan in the updated PDD (version 05) comply with the applicable requirements in the “CDM project standard for project activities”, and the valid version of the methodologies and the other methodological regulatory documents that are applied in the updated PDD(version 05);
- The second crediting period of the project activity commences on the day immediately after the expiration of the current crediting period;
- The names of the project participants in the updated PDD(version 05) are consistent with the names of the project participants in the latest version of the MoC statement;
- The calculation of the emission reductions is carried out in a transparent and conservative manner, so that the calculated annual emission reductions of 94,940 tCO<sub>2</sub>e are most likely to be achieved within the second crediting period;
- There are no proposed post-registration changes for the second crediting period of the project.

The conclusions of this report show that the Project Activity, as it was described in the project documentation, is in line with all criteria applicable for the validation. CQC thus requests for renewal of the crediting period of this CDM project.

## Appendix 1. Abbreviations

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
CQC	China Quality Certification Centre
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
NEPG	Northeast China Power Grid
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
PCP	CDM Project Cycle Procedure for Project Activities
PS	CDM Project Standard for Project Activities
UNFCCC	United Nations Framework Convention on Climate Change
VVS	CDM Validation and Verification Standard for Project Activities

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



### CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

**Name:** Zhang Lixin  
**CDM validator:** Yes  
**CDM verifier:** Yes  
**Technical expert:** /  
**Technical areas:** TA1.2: Renewables  
 TA13.1: Waste handling and disposal

Approved by:  
 (Quality manager)

Date: 2014-12-01



### CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

**Name:** Wang Zhenyang  
**CDM validator:** Yes  
**CDM verifier:** Yes  
**Technical expert:** /  
**Technical areas:** TA1.2: Renewables  
 TA 8.1: Mining/mineral production

Approved by:  
 (Quality manager)

Date: 2014-12-01



### CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

**Name:** Wang Keli  
**CDM validator:** Yes  
**CDM verifier:** Yes  
**Technical expert:** /  
**Technical area:** TA1.2: Renewables  
 TA 13.1: Solid waste and wastewater  
 TA 13.2: Manure

Approved by:  
 (Quality manager)

Date: 2014-12-01



### CERTIFICATE OF COMPETENCE

Qualification in accordance with CQC's procedure for Qualifications and Training Management (CDMP01):

**Name:** Nie Xi  
**CDM validator:** Yes  
**CDM verifier:** Yes  
**Technical expert:** /  
**Technical area:** TA 1.2: Renewables  
 TA 2.1: Energy distribution  
 TA 13.1: Solid waste and wastewater

Approved by:  
 (Quality manager)

Date: 2014-12-01

## Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
/1/.	CDM Center of Excellence Ltd., Representative Office Beijing	Registered PDD for the “Guoshuitou Diaobingshan Quanyangou Wind Power Project”, Version 03	<a href="https://cdm.unfccc.int/fil_estorage/3/O/9/3O9GR62EIFBZNTAV58WLD7JMKHX1Q4/PDD_Diaobingshan.pdf?t=SEx8cHg4ZThnfDB1kZPbevt3v_bDw64fPKc6">https://cdm.unfccc.int/fil_estorage/3/O/9/3O9GR62EIFBZNTAV58WLD7JMKHX1Q4/PDD_Diaobingshan.pdf?t=SEx8cHg4ZThnfDB1kZPbevt3v_bDw64fPKc6</a>	Project participants
/2/.	Climate Bridge Co. Ltd.	Updated PDD for the “Guoshuitou Diaobingshan Quanyangou Wind Power Project”, Version 04	/	Project participants
/3/.	Climate Bridge Co. Ltd.	Updated PDD for the “Guoshuitou Diaobingshan Quanyangou Wind Power Project”, Version 05	/	Project participants
/4/.	Climate Bridge Co. Ltd.	Emission Reduction Calculation Spreadsheet	/	Project participants
/5/.	UNFCCC	ACM0002: Grid-connected electricity generation from renewable sources (Version 19.0)	<a href="https://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD">https://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD</a>	Others
/6/.	UNFCCC	Tool to calculate the emission factor for an electricity system (Version 07.0).	<a href="https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf">https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf</a>	Others
/7/.	UNFCCC	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).	<a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf</a>	Others
/8/.	UNFCCC	Project design document form (Version 11.0)	<a href="https://cdm.unfccc.int/fil_estorage/e/x/t/extfile-20190531085438892-PDD_form05v11.pdf/PDD_form05v11.pdf?t=Znd8cHg2c2lyfDB7kLI3BDC4QBYWyUBxTZQA">https://cdm.unfccc.int/fil_estorage/e/x/t/extfile-20190531085438892-PDD_form05v11.pdf/PDD_form05v11.pdf?t=Znd8cHg2c2lyfDB7kLI3BDC4QBYWyUBxTZQA</a>	Others
/9/.	UNFCCC	Kyoto Protocol (1997).	/	Others
/10/.	UNFCCC	Decision 17/CP.7 (Marrakesh – Accords).	/	Others
/11/.	China Electric Power Yearbook Committee	China Electric Power Yearbooks 2012-2016	/	Others
/12/.	Chinese DNA	2017 Baseline Emission Factors for Regional Power Grid in China.	Published on 20/12/2018  <a href="http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf">http://qhs.mee.gov.cn/kzwsqtpf/201812/P020181220579925103092.pdf</a>	Others
/13/.	UNFCCC	CDM validation and verification standard for project activities (Version 02.0)	<a href="https://cdm.unfccc.int/Reference/index.html">https://cdm.unfccc.int/Reference/index.html</a>	Others
/14/.	UNFCCC	CDM project standard for project activities (Version 02.0)	<a href="https://cdm.unfccc.int/Reference/index.html">https://cdm.unfccc.int/Reference/index.html</a>	Others
/15/.	UNFCCC	CDM project cycle procedure for	<a href="https://cdm.unfccc.int/R">https://cdm.unfccc.int/R</a>	Others



		project activities (Version 02.0)	reference/index.html	
/16/.	UNFCCC	Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (Version 03.0)	<a href="http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-05-v3.0.pdf">http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-05-v3.0.pdf</a>	Others
/17/.	CTGNE Diaobingshan Wind Power Co., Ltd.	Power purchase Agreement with NEPG	/	Project participants
/18/.	CTGNE Diaobingshan Wind Power Co., Ltd.	CDM Training Record, issued by CTGNE Diaobingshan Wind Power Co., Ltd.	/	Project participants
/19/.	CTGNE Diaobingshan Wind Power Co., Ltd.	Operation Log of the Project	/	Project participants
/20/.	CTGNE Diaobingshan Wind Power Co., Ltd.	CDM Monitoring and Management Manual	/	Project participants
/21/.	CTGNE Diaobingshan Wind Power Co., Ltd.	Modalities of Communication Statement of the project	<a href="https://cdm.unfccc.int/ModalitiesOfCommunication/forms/LUHSC567UBRHMN3U0XECF5ODIXAKTT10/pdf">https://cdm.unfccc.int/ModalitiesOfCommunication/forms/LUHSC567UBRHMN3U0XECF5ODIXAKTT10/pdf</a>	Project participants
/22/.	CTGNE Diaobingshan Wind Power Co., Ltd.	Monitoring Report for the monitoring period of 01 Apr 12 - 28 Feb 14	<a href="https://cdm.unfccc.int/UserManagement/FileStorage/WXL72ZDK63HBGNTE09J85IQ4SVOCPM">https://cdm.unfccc.int/UserManagement/FileStorage/WXL72ZDK63HBGNTE09J85IQ4SVOCPM</a>	Project participants
/23/.	China Environmental United Certification Center Co., Ltd	Verification Report for the monitoring period of 01 Apr 12 - 28 Feb 14	<a href="https://cdm.unfccc.int/UserManagement/FileStorage/4U86ZBEXVF9GKR0CY7AJIL5O2TD3HS">https://cdm.unfccc.int/UserManagement/FileStorage/4U86ZBEXVF9GKR0CY7AJIL5O2TD3HS</a>	DOE

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

Table 1. CL from this validation

CL ID	01	Section no.	D.5	Date:	27/08/2019
<b>Description of CL</b>					
<i>The monitoring and calculation of the <math>EG_{facility,y}</math> is not clearly demonstrated in the updated PDD(version 04).</i>					
<b>Project participant response</b>				Date:	29/08/2019
<i>Details have been added in the updated PDD(version 05) to demonstrated that <math>EG_{facility,y}</math> is calculated by the difference of <math>EG_{output,y}</math> and <math>EG_{input,y}</math>.</i>					
<b>Documentation provided by project participant</b>					
<i>the updated PDD(version 05)</i>					
<b>DOE assessment</b>				Date:	30/08/2019
PP has made relevant corrections in PDD (Version 05) and given clear clarification. Thus CL 01 was successfully closed.					

Table 2. CAR from this validation

CAR ID	N.A	Section no.	N.A	Date:	
<b>Description of CAR</b>					
N.A					
<b>Project participant response</b>				Date:	
N.A					
<b>Documentation provided by project participant</b>					
N.A					
<b>DOE assessment</b>				Date:	
N.A					

Table 3. FAR from this validation

FAR ID	N.A	Section no.	N.A	Date:	
<b>Description of FAR</b>					
N.A					
<b>Project participant response</b>				Date:	
N.A					
<b>Documentation provided by project participant</b>					
N.A					
<b>DOE assessment</b>				Date:	
N.A					

**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN) and version 02.0 of the “CDM project cycle procedure for project activities” (CDM-EB93-A06-PROC);</li> <li>• Make editorial improvements.</li> </ul>
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
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		