

المجلس العالمي للبصمة الكربونية  
GLOBAL CARBON COUNCIL



**Project  
Submission  
Form**

V4.0- 2022

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<b>COVER PAGE- Project Submission Form (PSF)</b>					
<i>Complete this form in accordance with the instructions attached at the end of this form.</i>					
<b>BASIC INFORMATION</b>					
<b>Title of the Project Activity as per LON/LOA</b>	<b>Tiantangshan 50MW wind power generation project</b>				
<b>PSF version number</b>	04.2				
<b>Date of completion / Updating of this form</b>	07/12/2022				
<b>Project Owner(s) as per LON/LOA</b> <small>(Shall be consistent with De-registered CDM Type B Projects)</small>	Chenzhou Xiangshui Tiantangshan Wind Power Co., Ltd.				
<b>Country where the Project Activity is located</b>	China				
<b>GPS coordinates of the project site(s)</b>	GPS of the plant building: E 112°20'27.9", N 26°9'57.78" (E 112.3411, N 26.1660)				
	GPS coordinates of the wind turbines:				
	turbine number	Latitude – Decimal degrees	Longitude – Decimal degrees	Latitude – DMS	Longitude – DMS
	26	112.6183	26.2578	E112°37'5.88"	N26°15'28.08"
	27	112.6189	26.2633	E112°37'8.04"	N26°15'47.88"
	28	112.6336	26.2661	E112°38'0.96"	N26°15'57.96"
	29	112.6453	26.2519	E112°38'43.08"	N26°15'6.84"
	30	112.6353	26.2522	E112°38'7.08"	N26°15'7.92"
	31	112.6353	26.2481	E112°38'7.08"	N26°14'53.16"
	32	112.6358	26.2389	E112°38'8.88"	N26°14'20.04"
33	112.6353	26.2358	E112°38'7.08"	N26°14'8.88"	

	34	112.6500	26.2358	E112°39'0"	N26°14'8.88"
	35	112.6525	26.2358	E112°39'9"	N26°14'8.88"
	36	112.6544	26.2467	E112°39'15.84"	N26°14'48.12"
	37	112.6547	26.2503	E112°39'16.92"	N26°15'1.08"
	38	112.6358	26.2439	E112°38'8.88"	N26°14'38.04"
	39	112.6592	26.2406	E112°39'33.12"	N26°14'26.16"
	40	112.6625	26.2475	E112°39'45"	N26°14'51"
	41	112.6669	26.2431	E112°40'0.84"	N26°14'35.16"
	42	112.6750	26.2461	E112°40'30"	N26°14'45.96"
	43	112.6797	26.2500	E112°40'46.92"	N26°15'0"
	44	112.6853	26.2356	E112°41'7.08"	N26°14'8.16"
	45	112.6833	26.2536	E112°40'59.88"	N26°15'12.96"
	46	112.6872	26.2706	E112°41'13.92"	N26°16'14.16"
	47	112.6900	26.2519	E112°41'24"	N26°15'6.84"
	48	112.6942	26.2642	E112°41'39.12"	N26°15'51.12"
	49	112.6997	26.2681	E112°41'58.92"	N26°16'5.16"
	50	112.7078	26.2689	E112°42'28.08"	N26°16'8.04"
<b>Eligible GCC Project Type as per the Project Standard</b> <small>(Tick applicable project type)</small>	<input checked="" type="checkbox"/> <b>Type A:</b>				
	<input type="checkbox"/> Type A1 <input checked="" type="checkbox"/> Type A2 <input checked="" type="checkbox"/> Sub-Type 1 <input type="checkbox"/> Sub-Type 2 <input type="checkbox"/> Sub-Type 3 <input type="checkbox"/> Sub-Type 4 <input type="checkbox"/> Type A3				
<input type="checkbox"/> <b>Type B – De-registered CDM Projects:<sup>1</sup></b>					
<input type="checkbox"/> Type B1 <input type="checkbox"/> Type B2					

<sup>1</sup> Owners of Type B projects shall fill in the form provided in Appendix 7.

<p><b>Minimum compliance requirements</b></p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Real and Measurable GHG Reductions</li> <li><input checked="" type="checkbox"/> National Sustainable Development Criteria (if any)</li> <li><input checked="" type="checkbox"/> Apply credible baseline and monitoring methodologies</li> <li><input checked="" type="checkbox"/> Additionality</li> <li><input checked="" type="checkbox"/> Local Stakeholder Consultation Process</li> <li><input checked="" type="checkbox"/> Global Stakeholder Consultation Process</li> <li><input checked="" type="checkbox"/> No GHG Double Counting</li> <li><input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goal 13 (Climate Action)</li> </ul>
<p><b>Choose optional and additional requirements</b> <small>(Tick applicable label categories)</small></p>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Environmental Impacts</li> <li><input checked="" type="checkbox"/> Do-no-net-harm Safeguards to address Social Impacts</li> <li><input checked="" type="checkbox"/> Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)</li> </ul>
<p><b>Applied methodologies including version No.</b> <small>(Shall be approved by the GCC or the CDM)</small></p>	<p>GCCM001 Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers, V3.0</p>
<p><b>GHG Sectoral scope(s) linked to the applied methodology(ies)</b></p>	<p>Scope 1 - energy industries (renewable / non-renewable sources)</p>

Applicable Rules and Requirements for Project Owners (Tick applicable Rules and Requirements)	Rules and Requirements		Version
	<input checked="" type="checkbox"/>	ISO 14064-2	
<input checked="" type="checkbox"/>	Applicable host country legal requirements /rules		
<input checked="" type="checkbox"/>	GCC Rules and Requirements <sup>2</sup>	<input checked="" type="checkbox"/> Project Standard	V3.1
		<input checked="" type="checkbox"/> Approved GCC Methodology (GCCM001)	V3.0
		<input checked="" type="checkbox"/> Program Definitions	V3.1
		<input checked="" type="checkbox"/> Environment and Social Safeguards Standard	V3.0
		<input checked="" type="checkbox"/> Project Sustainability Standard	V3.0
		<input checked="" type="checkbox"/> Instructions in Project Submission Form (PSF)-template	V4.0
		<input type="checkbox"/> Clarification No. 01	
		<input type="checkbox"/> Clarification No. 02	
		<input type="checkbox"/> Clarification No. 03	
		<input type="checkbox"/> Clarification No. 04	
		<input type="checkbox"/> Clarification No. 05	
		<input type="checkbox"/> Standard on avoidance of double counting	
		<input type="checkbox"/> Add rows if required	
		<input checked="" type="checkbox"/>	CDM Rules <sup>3</sup>
<input checked="" type="checkbox"/> TOOL 1- Tool for the demonstration and assessment of additionality	V7.0.0		
<input type="checkbox"/> TOOL 02- Combined tool to identify the baseline scenario and demonstrate additionality			

<sup>2</sup> GCC Program rules and requirements: <http://www.globalcarboncouncil.com/resource-centre/>

<sup>3</sup> CDM Program rules: <https://cdm.unfccc.int/Reference/index.html>

	<input checked="" type="checkbox"/> TOOL 07- Tool to calculate the emission factor for an electricity system	V7.0
	<input type="checkbox"/> TOOL 19- Demonstration of additionality of microscale project activities	
	<input type="checkbox"/> TOOL 21- Demonstration of additionality of small-scale project activities	
	<input type="checkbox"/> TOOL 23- Additionality of first-of-its-kind project activities	
	<input checked="" type="checkbox"/> TOOL 24- Common practice	V3.1
	<input checked="" type="checkbox"/> TOOL 27- Investment analysis	V11.0
	<input type="checkbox"/> TOOL 32- Positive lists of technologies	
	<input type="checkbox"/> Guidelines for objective demonstration and assessment of barriers	
	<input checked="" type="checkbox"/> TOOL 05- baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	V3.0
<input type="checkbox"/> Add rows if required		
<p><b>Choose Third Party Project Verification by approved GCC Verifiers<sup>4</sup></b> (Tick applicable verification categories)</p>	<input checked="" type="checkbox"/> GHG emission reductions (i.e., Approved Carbon Credits <b>(ACCs)</b> ) <input checked="" type="checkbox"/> Environmental No-net-harm Label <b>(E<sup>+</sup>)</b> <input checked="" type="checkbox"/> Social No-net-harm Label <b>(S<sup>+</sup>)</b>  <input checked="" type="checkbox"/> United Nations Sustainable Development Goals <b>(SDG<sup>+</sup>)</b> <input type="checkbox"/> Bronze SDG Label <input type="checkbox"/> Silver SDG Label	

<sup>4</sup> **Note:** GCC Verifiers under the Individual Track are not eligible to conduct verifications for GCC Project Activities whose owners intend to supply carbon credits (ACCs) for use within CORSIA.



	<input checked="" type="checkbox"/> Gold SDG Label <input type="checkbox"/> Platinum SDG Label <input type="checkbox"/> Diamond SDG Label  <input checked="" type="checkbox"/> CORSIA requirements (C+) <input checked="" type="checkbox"/> Host Country Attestation on Double counting
<p><b>Declaration by the 'Authorized Project Owner<sup>5</sup> and focal point'</b></p> <p>(Tick all applicable statements<sup>6</sup>)</p>	<p>The Project Owner(s) declares that:</p> <p><b>Generic Requirements applicable to all Project Types:</b></p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity complies with the eligibility of the applicable project type (A1, A2, A3, B1 or B2) as stipulated by the Project Standard and relevant clarifications.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity shall start or have started operations, and shall start or have started generating emission reductions, on or after 1 January 2016.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity is eligible to be registered under the GCC program.</p> <p>We shall ensure the following for the Project Activity (tick at least one of the two options):</p> <p><input checked="" type="checkbox"/> No outcomes (e.g. emission reductions, environmental attributes) generated by the Project Activity under GCC will be claimed as carbon credits or environmental attributes under any other GHG/non-GHG<sup>7</sup> program, either for compliance or voluntary purposes, during the entire GCC crediting period; or</p> <p><input type="checkbox"/> If the project activity has been issued with carbon credits or environmental attributes of compensating nature<sup>8</sup> by any other GHG/ non-GHG program, either for compliance or voluntary purposes, the ACCs will be claimed only for the remaining crediting period (subject to a maximum of 10 years of crediting period including the periods under other programs and GCC program) for which carbon credits/ environmental attributes of compensating nature have not been issued by any other GHG/ non-GHG program.</p>

<sup>5</sup> The Project Owner means the legal entity or organization that has overall control and responsibility for the Project Activity

<sup>6</sup> **Consequences in case of Non-compliance with declaration statements:**

If at any point of time non-compliance with the declared statements is established as a result of negligence, fraud or wilful misconduct of the GCC Project Owner/s the GCC project activity will be disqualified and the registration of the proposed Project Activity will be rejected.

<sup>7</sup> Non-GHG program could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

<sup>8</sup> The environment attributes of compensating nature are those which are used by captive users (e.g. corporates/industries) for offsetting their GHG emissions

	<p><b>Specific requirements applicable to respective Project Types:</b></p> <p><b><u>For Project Type A1:</u></b></p> <p><input type="checkbox"/> For Project Type A1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program.</p> <p><b><u>For Project Type A2 (Sub-Type 1):</u></b></p> <p><input checked="" type="checkbox"/> For Project Type A2 Sub-Type 1, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program.</p> <p><b><u>For Project Type A2 (Sub-Type 2 or Sub-Type 3):</u></b></p> <p>For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit a proof for deregistration from CDM; or</p> <p><input type="checkbox"/> Submit a signed &amp; stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program.</p> <p><input type="checkbox"/> For Project Type A2 Sub-Type 2 or Project Type A2 Sub-Type 3, we confirm that the Project Activity is NOT included as a component Project Activity (CPA) in any registered GHG Programme of Activities (PoA) or any other functionally equivalent grouped/aggregated activities under any GHG program (such as the CDM or any other voluntary program).</p> <p><b><u>For Project Type A2 (Sub-Type 4):</u></b></p> <p>For Project Type A2 Sub-Type 4, we confirm that the Project Activity has been included in a registered CDM-POA and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or</p> <p><input type="checkbox"/> Submit the proof of exclusion of CPA(s) from the registered CDM-PoA after the request for registration has been submitted to GCC Program but before the final decision is made by the GCC Steering Committee.</p> <p><b><u>For Project Type A3:</u></b></p> <p><input type="checkbox"/> For Project Type A3, we confirm that the Project Activity is NOT registered as a GHG Project Activity in any other GHG/non-GHG program or any other voluntary program and has not issued or will not issue credits under any other program.</p> <p><b><u>For Project Type B1 or B2:</u></b></p>
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	<p>For Project Type B1 or Project Type B2, we confirm that for Project Activity, which has been registered with CDM or any GHG/non-GHG Program and we shall (tick at least one of the two options):</p> <p><input type="checkbox"/> Submit a proof for deregistration from CDM; or</p> <p><input type="checkbox"/> Submit a signed &amp; stamped public undertaking, stating that the Project Owner will never submit any request for Issuance of ACCs or request for renewal of crediting period to CDM-EB or under article 6.4 or any authority after submission to GCC Program and shall formally inform CDM-EB or authority under article 6.4 or any authority after submission to GCC Program.</p> <p><b>Requirements to avoid double counting:</b></p> <p>We intend to submit or have submitted a written attestation<sup>9</sup> (Host Country Letter of Authorisation - HCLOA) from the host country's national focal point or focal point designee for CORSIA eligible units generated beyond 31 December 2020 at the following stages<sup>10</sup> (tick at least one of the three options):</p> <p><input type="checkbox"/> The initial submission for GSC; or</p> <p><input type="checkbox"/> Along with the submission for a request for registration (after Project Verification is completed); or</p> <p><input checked="" type="checkbox"/> Along with the submission for a request for the first or subsequent issuance of ACCs.</p> <p><b>Project specific requirements:</b></p> <p><b><u>CORSIA specific requirements:</u></b></p> <p><input type="checkbox"/> We confirm that bundled projects or grouped projects shall have registered crediting period starting on or after 1 Jan 2016 for the grouped/aggregated project as a whole.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity meets all the requirement of the CORSIA Eligible Emissions Units<sup>11</sup> required for GCC projects and does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes.</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity aims to achieve at least Silver or higher SDG+ label (i.e. positively impact at least 3 or more United Nations Sustainability Development Goals).</p> <p><input checked="" type="checkbox"/> We confirm that the Project Activity will be implemented in a country which is UN member state<sup>12</sup>.</p>
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<sup>9</sup> In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

<sup>10</sup> If the host country attestation is not submitted at the initial submission of GSC, the project can be tagged with an indicative CORSIA flag if its confirmed to be submitted later. If the host country attestation is not submitted at the request for registration, the project can be tagged with an indicative CORSIA flag if at least the PSF and Verification Report confirms to submit this letter, at first issuance. If the host country attestation is not submitted at request for first issuance, the ACCs will not be tagged as CORSIA (C+) compliant if this letter is not submitted.

<sup>11</sup> CORSIA Eligible Emissions Units containing approval and conditions for GCC Program: <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Emissions-Units.aspx>

<sup>12</sup> The list of UN member states countries can be found at <https://www.un.org/en/about-us/member-states>

Project Submission Form

	Provide details (if any) below for the boxes ticked above:
	<p>The Project Owner(s) declares that:</p> <p><input checked="" type="checkbox"/> All of the information provided in this document, including any supporting documents submitted to the GCC or its registry operator IHS Markit at any time, is true and correct;</p> <p><input checked="" type="checkbox"/> They understand that a failure by them to provide accurate information or data, or concealing facts and information, can be considered as negligence, fraud or wilful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions.</p> <p>Provide details below for the boxes ticked above</p>
<b>Appendixes 1-9</b>	Details about the Project Activity are provided in Appendixes 1 through 9 to this document.
<b>Name, designation, date and signature of the Focal point (as per LON/LOA)</b>	On behalf of Shanghai ideacarbon information technology Co., Ltd.
	<p>Mr. Liu Kaicheng, Director</p> 
	07/12/2022

## 1. PROJECT SUBMISSION FORM

### Section A. Description of the Project Activity

#### A.1. Purpose and general description of the Project Activity

>> Tiantangshan 50MW wind power generation project (hereinafter referred to as the proposed project) aims to install a wind farm with total capacity of 49.9MW in Guiyang county, Hunan Province, P.R.China, utilizing wind resources for electricity generation. The electricity generated from the project will be sold to Central China Power Grid (CCPG). The proposed project delivers the renewable energy and achieve greenhouse gas (GHG) emission reductions through displacement of electricity delivered by CCPG which is a fossil-fuel dominated power grid.

With the implementation of the proposed project :

- (a) This is a greenfield project, prior to the start of implementation of the project activity, there is no power generation unit at the site of the proposed project, and the electricity was supplied by the connected power grid which was dominated by fossil fuel-fired power plants.
- (b) The project scenario is the implementation of the proposed project, the installation and operation of 24 x 2MW and 1 x 1.9MW and turbines with a total capacity of 49.9MW which will supply an average annual generation of 111,010 MWh to CCPG and replace the same amount of electricity generated by fossil fuel-fired power plants connected to CCPG. According to GCCM001 applied, the proposed project is a USPP project, it is implemented only for the purpose of producing electricity (using renewable energy) and supplying it to regional grid, without use of electricity for any domestic, commercial or industrial captive purposes.
- (c) The baseline scenario of the proposed project is the same as the scenario prior to the start of the implementation of the project activity.

The project is operational since 16/03/2017, which is the date when the last wind turbine starts supplying electricity to the grid. The project complies with the relevant regulations and laws in China. In line with Chinese environmental regulations, an “Environmental Impact Assessment (EIA) Approval Letter” was approved by Hunan Provincial Department of Environmental Protection.

The project involves the installation of 25 wind turbines (24 x 2MW, and 1 x 1.9MW), which amount to a total installed capacity of 49.9MW. The project located at Guiyang county, Hunan Province, P.R.China. The proposed project is constructed and operated by Chenzhou Xiangshui Tiantangshan Wind Power Co., Ltd. The estimated annual net electricity generation and average annual emission reductions of the proposed project are 111,010MWh and 79,413 tCO<sub>2</sub>e, respectively. The total GHG emissions reductions in the chosen fixed 10 years crediting period amount to 794,130 tCO<sub>2</sub>e.

The project makes contribution to the local sustainable development as follows:

#### 1. GHG emission reduction

The proposed project activity will achieve obvious greenhouse gas (GHG) emission reductions by avoiding CO<sub>2</sub> emissions, as grid-connected fossil fuel-fired power dominates in CCPG.

#### 2. Pollutants emission reduction through replacing fossil fuel combustion

The proposed project is to replace grid-connected fossil fuel-fired power plants in CCPG, and thus reduce fossil fuel consumption and avoid pollutants emission, such as sulfur-dioxide and dust, brought by fossil fuel combustion. Therefore, the proposed project has obvious environmental benefit.

3. Employment opportunities

The conducting of the proposed project will offer job opportunities for local people during both the construction and operational period.

4. Economy development

The region can achieve economic growth and booming of local tourism through the construction and operation of the project. Furthermore, the project will contribute to local government with more tax revenues and poverty eradication.

The project is expected to contribute 4 SDGs which are SDG 7, 8, 9 and 13.

SDG 7 Energy: The project contributes SDG Target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix” by the utilization of wind power as a renewable energy source.

SDG 8 Economic Growth: The project creates direct and indirect employment opportunities during construction and operation phases, so it contributes to SDG Target 8.5 “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value”.

SDG 9 Infrastructure, Industrialization: SDG Target 9.4 requires “By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities”. The project helps the Target 9.4 by implementing a clean, reliable and environmental-friendly infrastructure for clean energy production / up-to-date industrialization.

SDG 13 Climate Change: The project produces clean renewable energy by diminishing CO2 emissions. Therefore, it contributes SDG Target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”.

**A.2. Location of the Project Activity**

>>

Address and geodetic coordinates of the physical site of the Project Activity		
Physical address	Latitude*	Longitude*
Guiyang County, Hunan Province, P.R.China	E 112° 20' 27.9" (E 112.3411)	N 26°9'57.78" (N 26.1660)

Note: Geo-coordinates to presented in degree minute seconds as well in decimal place format (4 decimal places )

GPS coordinates of the wind turbines:

turbine number	Latitude – Decimal degrees	Longitude – Decimal degrees	Latitude – DMS	Longitude – DMS
26	112.6183	26.2578	E112°37'5.88"	N26°15'28.08"
27	112.6189	26.2633	E112°37'8.04"	N26°15'47.88"

28	112.6336	26.2661	E112°38'0.96"	N26°15'57.96"
29	112.6453	26.2519	E112°38'43.08"	N26°15'6.84"
30	112.6353	26.2522	E112°38'7.08"	N26°15'7.92"
31	112.6353	26.2481	E112°38'7.08"	N26°14'53.16"
32	112.6358	26.2389	E112°38'8.88"	N26°14'20.04"
33	112.6353	26.2358	E112°38'7.08"	N26°14'8.88"
34	112.6500	26.2358	E112°39'0"	N26°14'8.88"
35	112.6525	26.2358	E112°39'9"	N26°14'8.88"
36	112.6544	26.2467	E112°39'15.84"	N26°14'48.12"
37	112.6547	26.2503	E112°39'16.92"	N26°15'1.08"
38	112.6358	26.2439	E112°38'8.88"	N26°14'38.04"
39	112.6592	26.2406	E112°39'33.12"	N26°14'26.16"
40	112.6625	26.2475	E112°39'45"	N26°14'51"
41	112.6669	26.2431	E112°40'0.84"	N26°14'35.16"
42	112.6750	26.2461	E112°40'30"	N26°14'45.96"
43	112.6797	26.2500	E112°40'46.92"	N26°15'0"
44	112.6853	26.2356	E112°41'7.08"	N26°14'8.16"
45	112.6833	26.2536	E112°40'59.88"	N26°15'12.96"
46	112.6872	26.2706	E112°41'13.92"	N26°16'14.16"
47	112.6900	26.2519	E112°41'24"	N26°15'6.84"
48	112.6942	26.2642	E112°41'39.12"	N26°15'51.12"
49	112.6997	26.2681	E112°41'58.92"	N26°16'5.16"
50	112.7078	26.2689	E112°42'28.08"	N26°16'8.04"

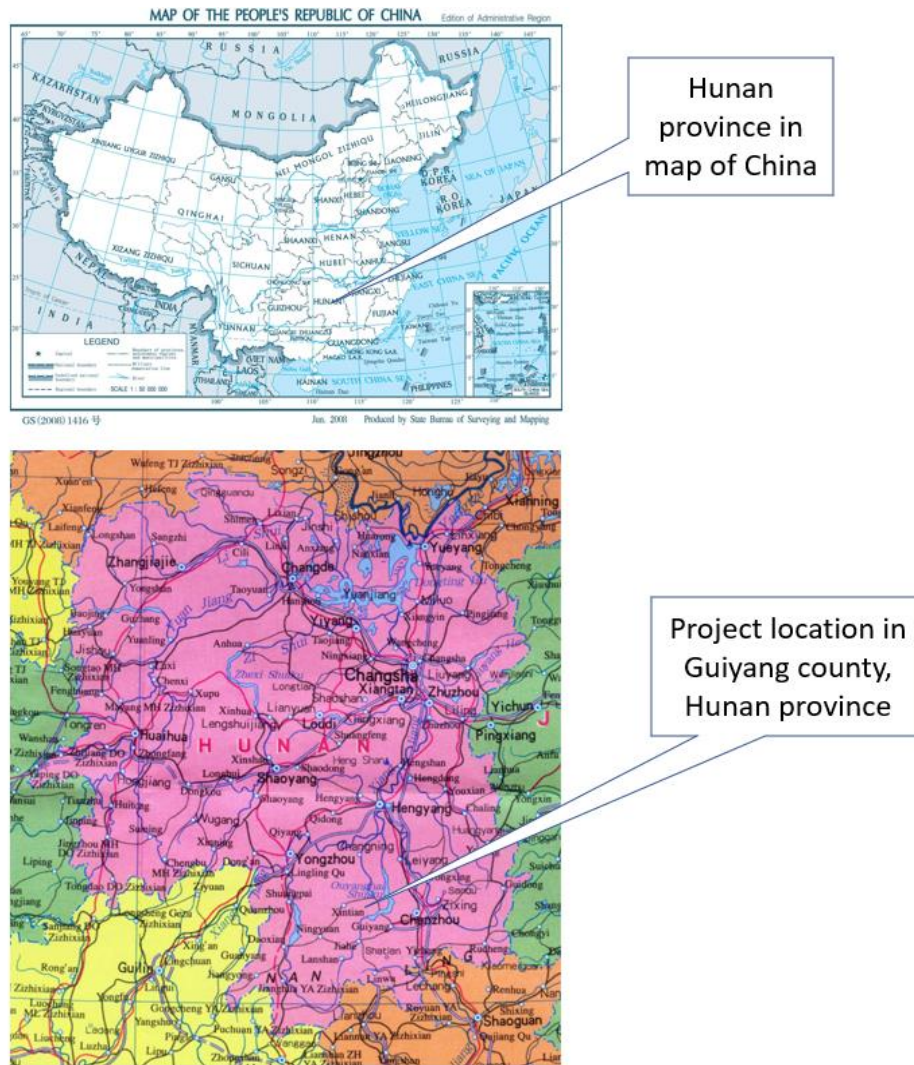


Figure 1. Location of the project.

### A.3. Technologies/measures

>>

The proposed project is to utilize wind resources for electricity generation in Guiyang County, Hunan Province, P. R. China. The proposed project is a grid-connected renewable energy project.

Prior to the start of implementation of the project activity, there is no power generation unit at the site of the proposed project. The baseline scenario of the proposed project is the electricity supply of equivalent amount as the proposed project from CCPG.



The baseline scenario of the proposed project is the same as the scenario prior to the start of the implementation of the project activity.

The proposed project involves the installation of 25 wind turbines (24 x 2MW, and 1 x 1.9MW), which amount to a total installed capacity of 49.9 MW. The estimated power output is 111,010MWh, the annual operational hour is 2,225 hours. The plant load factor (PLF) is calculated to be 25.4% (the annual power supply/the installed capacity/annual hours× 100%: 111,010MWh/49.9MW/8760h × 100% = 25.4%).The main technical specifications of the wind turbine are provided in the following table.

Item	Unit	Heading & Index
Rated capacity	kW	2000* 24 + 1900*1
Number of blades	-	3
Rotor diameter	m	104.8
Start up speed	m/s	3
Rated wind speed	m/s	10
Height of hub	m	80
Rated voltage of generator	V	690

The electricity generated by the project is delivered to the Tiantangshan 110KV substation through 3 35KV-trasmission lines. The proposed project shares the Tiantangshan 110KV substation with another wind power project (Tiantangshan Phase I wind farm). The electricity generated by the two projects is transmitted to the Changning 220KV substation which belongs to the local grid of CCPG.

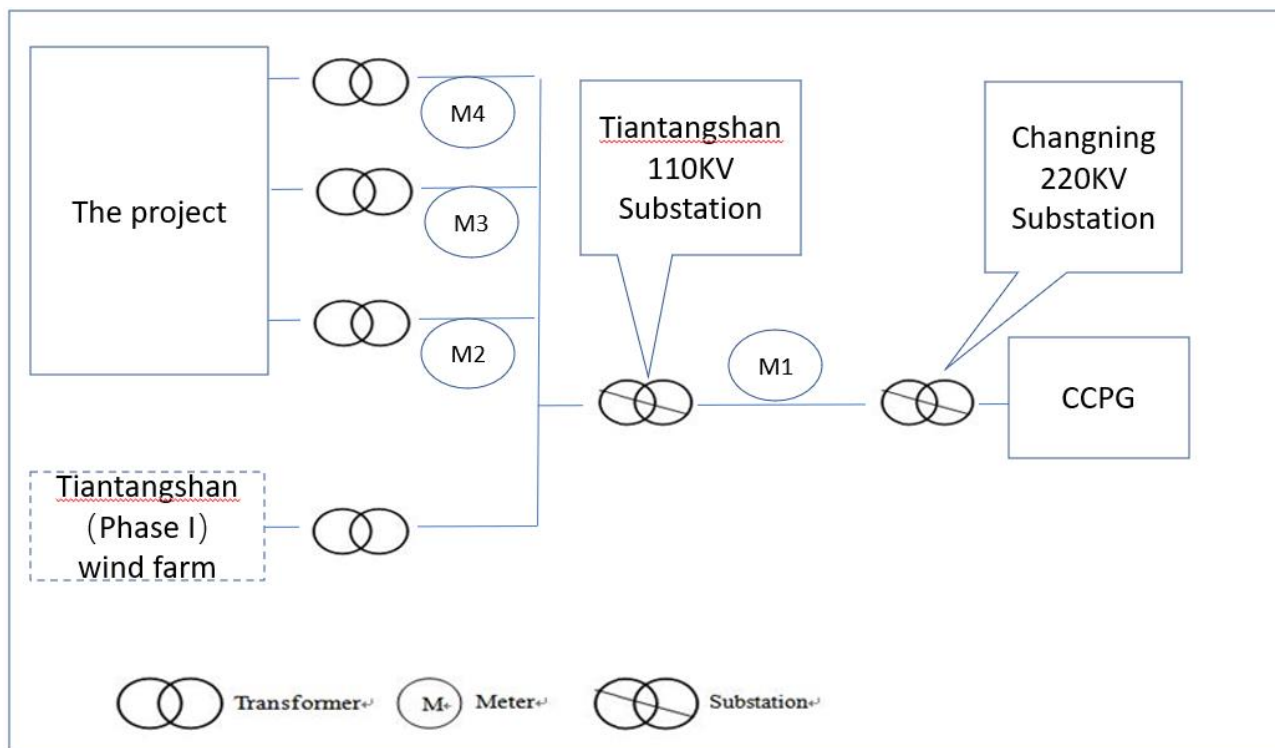


Figure 2 Simplified electrical grid connection diagram

The proposed project will use domestic wind turbines. Hence, it not involves technology transferred to the host parties.

#### A.4. Project Owner(s)

Location/ Country	Project Owner(s)	Where applicable <sup>13</sup> , indicate if the host country has provided approval (Yes/No)
China	Chenzhou Xiangshui Tiantangshan Wind Power Co., Ltd.	No

#### A.5. Declaration of intended use of Approved Carbon Credits (ACCs) generated by the Project Activity

>> The Project Activity is expected to generate ACCs for a full 10-year crediting period and supply the credits to offset the following GHG emissions:

Period		Name of the Entities	Purpose and Quantity of ACCs to be supplied
From	To		
16/03/2017	15/03/2027	GuotaiJunan Securities Co., Ltd	794,130 tCO <sub>2</sub> e to be used for the GHGs off-setting in voluntary carbon market

The project owner (Chenzhou Xiangshui Tiantangshan Wind Power Co., Ltd.) confirm that the carbon credits (ACCs) from the Project Activity shall not be double counted.

#### A.6. Additional requirements for CORSIA

>>

Please see Section E and F.

## Section B. Application of selected methodology(ies)

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<sup>13</sup> For example, *Project Coordination Form* is to be filled-in by Project Owners for projects located in Qatar. A written attestation from the host country's national focal point or the focal point's designee, as required by CORSIA (Refer section A.5 of the PSF guidelines).

### B.1. Reference to methodology(ies) and tools applied in the project

>>The project applied the GCC approved methodology “GCCM001 Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers, V3.0”

The methodology also refers to the latest approved versions of the following tools and guidelines of CDM:

- (a) “Tool to calculate the emission factor for an electricity system-version 7.0”
- (b) “Tool to calculate baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation-version 03.0”;
- (c) “Tool for Demonstration and Assessment of Additionality-version 7.0.0”

### B.2. Applicability of methodology(ies) and tools applied in the project

>>

The proposed project aims to build and operate a new wind power plant (USPP) at a site where no renewable power was operated prior to the implementation of the project activity. It meets all applicability conditions of methodology GCCM001 (version 3.0) which is listed as follows:

Applicable Project Activities and their Eligibility Conditions	Applicability
(a) The renewable energy generation projects shall supply electricity to user(s), either grid or a specific identified user <sup>2</sup> . The project activity will displace electricity from an electricity distribution system that is or would have been supplied by from a national or a regional grid (grid hereafter); the following renewable energy generation technologies qualify under this methodology: (i) Solar Photovoltaic; (ii) On-shore or Off-shore Wind; (iii) Tidal; (iv) Wave.	The project supplies renewable energy to the grid. The project will displace electricity from an electricity distribution system that would have been supplied by a regional grid. The project is an on-shore wind power plant.
(b) The project activities can also involve setting up and implementation of a BESS along with the renewable energy generation plant.	The project does not involve setting battery storage, or battery energy storage systems (BESS).
(c) The project activity wherein a BESS has been deployed, can either be a greenfield installation wherein the BESS had been conceptualised along with the renewable energy generation unit or may be retrofitted into an existing setup of renewable energy project, whether or not registered with GCC.	The project does not involve setting battery storage, or battery energy storage systems (BESS).
(d) In case the Project Owners want to claim carbon credits due to retrofit of BESS into existing renewable energy generation unit, they would need to demonstrate that historically the renewable energy	The project does not involve setting battery storage, or battery energy storage systems (BESS).

unit was subject to curtailed output due to low grid stability or capacity limitation <sup>3</sup> in the grid infrastructure for handling the increased generation. This must be through evidence of existence of technical and regulatory/commercial constraints	
(e) The project activities shall not involve combined heat and power (co-generation) systems.	The project does not involve combining heat and power (co-generation) systems.
(f) The project activities shall not involve co-firing of fossil fuel of any kind.	The project does not involve co-firing of fossil fuel.
(g) The project activities may have consumption of electricity (grid on on-site generation) for site offices.	The project involves electricity consumption for site offices.
(h) DPPs that supply electricity also for domestic, commercial or industrial captive purposes either wholly or in addition to supply to grid, shall demonstrate that grid connection was available on the site before the implementation of project activity.	The project is not a DPPs project.
(i) Under no condition would the battery storage system (BESS) be charged from the grid except in case of emergency situations like deep discharge or exceptional operational situations due to requirements from regulatory authorities in order to safeguard the safety and operational integrity of the connected grid system. BESS which consumes grid power or fossil fuel-based captive power for auxiliary load associated with BESS setup and employ cooling and/or fire suppression systems based on refrigerants or clean agents with the global warming potential (e.g. Hydrofluorocarbon (HFC) or Chlorofluorocarbon (CFC)) are not included under this methodology.	The project does not involve setting battery storage, or battery energy storage systems (BESS).

Applicability of “Tool to calculate the emission factor for an electricity system-version 7.0”:

<b>Applicable Project Activities and their Eligibility Conditions</b>	<b>Applicability</b>
This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project supplies electricity to the grid and applies the tool to estimate the OM, BM and CM of the grid.
Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project	The emission factor for the grid is calculated for grid power plants.

<p>participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 1: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.</p>	
<p>In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.</p>	<p>The project electricity system is located totally in on-Annex I country.</p>
<p>Under this tool, the value applied to the CO2 emission factor of biofuels is zero.</p>	<p>Biofuels is not involved for emission factor calculation.</p>

Applicability of “Tool to calculate baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation-version 03.0”:

<b>Applicable Project Activities and their Eligibility Conditions</b>	<b>Applicability</b>
<p>If emissions are calculated for electricity consumption, the tool is only applicable if one out of the following three scenarios applies to the sources of electricity consumption:</p> <p>(a) Scenario A: Electricity consumption from the grid. The electricity is purchased from the grid only, and either no captive power plant(s) is/are installed at the site of electricity consumption or, if any captive power plant exists on site, it is either not operating or it is not physically able to provide electricity to the electricity consumer;</p> <p>(b) Scenario B: Electricity consumption from (an) off-grid fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants are installed at the site of the electricity consumer and supply the consumer with electricity. The captive power plant(s) is/are not connected to the electricity grid; or</p> <p>(c) Scenario C: Electricity consumption from the grid and (a) fossil fuel fired captive power plant(s). One or more fossil fuel fired captive power plants operate at the site of the electricity consumer. The captive</p>	<p>The project supplies electricity to the grid and, electricity consumption from the grid will be used when applicable.</p> <p>Therefore, scenario A is applied.</p>

<p>power plant(s) can provide electricity to the electricity consumer. The captive power plant(s) is/are also connected to the electricity grid. Hence, the electricity consumer can be provided with electricity from the captive power plant(s) and the grid.</p>	
<p>This tool can be referred to in methodologies to provide procedures to monitor amount of electricity generated in the project scenario, only if one out of the following three project scenarios applies to the recipient of the electricity generated:                  (a) Scenario I: Electricity is supplied to the grid;                  (b) Scenario II: Electricity is supplied to consumers/electricity consuming facilities; or                  (c) Scenario III: Electricity is supplied to the grid and consumers/electricity consuming facilities.</p>	<p>The project supplies electricity to the grid. Therefore, scenario I is applied.</p>
<p>This tool is not applicable in cases where captive renewable power generation technologies are installed to provide electricity in the project activity, in the baseline scenario or to sources of leakage. The tool only accounts for CO2 emissions.</p>	<p>The project does not involve captive renewable power generation technologies installed to provide electricity in the project activity.</p>

Applicability of “Tool for Demonstration and Assessment of Additionality-version 7.0.0”:

<b>Applicable Project Activities and their Eligibility Conditions</b>	<b>Applicability</b>
<p>The use of the “Tool for the demonstration and assessment of additionality” is not mandatory for project participants when proposing new methodologies. Project participants may propose alternative methods to demonstrate additionality for consideration by the Executive Board. They may also submit revisions to approved methodologies using the additionality tool.                  Once the additionally tool is included in an approved methodology, its application by project participants using this methodology is mandatory.</p>	<p>The additionality tool is included in the applied methodology GCCM001 (version 3.0), therefore, it’s mandatory to use it.</p>

### B.3. Project boundary, sources and greenhouse gases (GHGs)

The spatial extent of the proposed project boundary includes the proposed project site and all power plants connected physically to CCPG.

According to the “Tool to calculate the emission factor for an electricity system” (version0.7.0.0), the

delineation of grid boundaries as provided by the DNA of China is used.

The table below provides an overview of the emissions sources included or excluded from the project boundary for determination of baseline and project emissions.

Source		GHG	Included?	Justification/Explanation
Baseline	CO <sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO <sub>2</sub>	Yes	The major source of emissions in the baseline
		CH <sub>4</sub>	No	Excluded for simplification. This emission source is assumed to be very small
		N <sub>2</sub> O	No	Excluded for simplification. This emission source is assumed to be very small
Project Activity	Emissions from on-site electricity use in the project activity or emergency charging of BESS (e.g. in case of deep discharge or exceptional operational situations due to requirements from regulatory authorities)	CO <sub>2</sub>	No	Not applicable. The project is a wind power project without BESS, it does not involve project emission.
		CH <sub>4</sub>	No	Not applicable. The project is a wind power project without BESS, it does not involve project emission.
		N <sub>2</sub> O	No	Not applicable. The project is a wind power project without BESS, it does not involve project emission.

#### B.4. Establishment and description of the baseline scenario

>>

According to GCCM001 (version 03.0), if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline is the following:

the electricity delivered to the grid by the project activity would be generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

Chinese electricity generation is mainly composed of thermal power plants and share of renewable energy power plants is still very low. Since China is an economies in transition country and there is increasing demand for electricity. In the absence of the proposed project, the same amount of electricity is required to be supplied via either the current power plants or by the addition of new generation sources into the grid. Therefore, the baseline scenario of the proposed project is the same as the baseline prescribed in the methodology as indicated above.

A grid emission factor is a reasonable benchmark that provides the proxy performance of the baseline power plant. Parameters used to determine the baseline emission are listed in the following table:

Parameter	Data	Source
$EF_{grid,OM,y}$ (tCO <sub>2</sub> /MWh)	0.8587	China Regional Power Grid Baseline Emission Factors for Emission Reduction Projects-Year 2019 <sup>14</sup>
$EF_{grid,BM,y}$ (tCO <sub>2</sub> /MWh)	0.2854	China Regional Power Grid Baseline Emission Factors for Emission Reduction Projects-Year 2019 <sup>15</sup>
$EF_{grid,CM,y}$ (tCO <sub>2</sub> /MWh)	0.7154	Calculated

Therefore, supply of equivalent annual power output by CCPG is the baseline scenario for the proposed project activity.

## B.5. Demonstration of additionality

>>

The proposed project has taken revenue of carbon credit (Chinese Certified Emission Reduction, CCER) support into account to overcome potential financial barrier since feasibility study. The Feasibility Study Report gave detailed discussions about improving the risk-resistance capability of the proposed project by applying for CCER. However, the CCER program is suspended by the National Development and Reform Commission on 17/03/2017. Since then, the project owner was waiting for reopening of the CCER. Considering that the CCER has been suspended for over five years and there is no exact time of reopening, the project owner seeks to get carbon revenue from other carbon programs to overcome the project financial difficulties. Hence, the project owner applying the registration and issuance of carbon credit from GCC.

Time	Milestone
09/2014	FSR completed by third party
07/04/2015	Environment Impact Assessment (EIA) was approved
11/11/2015	The project construction started
05/01/2016	The first wind turbine put into operation
16/03/2017	The last wind turbine put into operation
17/03/2017	The CCER program is suspended by National Development and Reform Commission
04/2022	The project owner decided to applying for registration of GCC program

### Additionality

The additionality of the proposed project is demonstrated and assessed by the “Tool for Demonstration and Assessment of Additionality” (Version 07.0.0). Following steps include:

<sup>14</sup> [https://www.mee.gov.cn/ywgz/ymqhbh/wsqtzk/202012/t20201229\\_815386.shtml](https://www.mee.gov.cn/ywgz/ymqhbh/wsqtzk/202012/t20201229_815386.shtml)

<sup>15</sup> [https://www.mee.gov.cn/ywgz/ymqhbh/wsqtzk/202012/t20201229\\_815386.shtml](https://www.mee.gov.cn/ywgz/ymqhbh/wsqtzk/202012/t20201229_815386.shtml)



## **Step 1. Identification of alternatives to the project activity consistent with current laws and regulations**

### ***Sub-step 1a - Define alternatives to the project activity:***

The most realistic and reliable alternatives to the project activity are:

1. Proposed project is not undertaken as an ACC project activity
2. Provision of equivalent amount of annual power output by the CCPG which the proposed project is connected to.

### ***Sub-step 1b. Consistency with mandatory laws and regulations:***

Both the continuation of electricity supply from the grid and the project not implemented as a CDM project are in line with current laws and regulations.

Therefore, both alternatives described above are carried forward to Step 2.

## **Step 2. Investment analysis**

The purpose of this step is to determine whether the proposed project activity is economically or financially less attractive than the alternative without an additional funding that may be derived from the project activities. The investment analysis was conducted in the following steps:

### ***Sub-step 2a. Determine appropriate analysis method***

The three analysis methods suggested by *Tools for the demonstration and assessment of additionality* (version 07.0.0) are simple cost analysis (Option I), investment comparison analysis (Option II) and benchmark analysis (Option III). Since the proposed project will earn revenues from not only the carbon revenue but also the electricity output, the simple cost analysis method is not appropriate. Investment comparative analysis method is only applicable to the case that alternative baseline scenario is similar to the proposed projects, so that comparative analysis can be conducted. The baseline scenario of the proposed project is to supply equivalent annual power output from CCPG rather than a new investment project. Therefore, Option II is not an appropriate method either. The proposed project will use benchmark analysis method based on total investment IRR.

### ***Sub-step 2b. Apply benchmark analysis (Option III)***

With reference to “*Interim Rules on Economic Assessment of Electric Engineering Retrofit Projects*”, issued by the State Power Corporation in 2002, the financial benchmark return adopted as a guideline for investments in the electric power industry in China is 8% for the Project IRR and only if the Project IRR is higher than or equivalent to this benchmark, the proposed project is financially feasible. Thus, 8% is adopted as the benchmark of the proposed project.

### ***Sub-step 2c. Calculation and comparison of financial indicators***

Based on the above-mentioned benchmark, the calculation and comparative analysis of financial indicators for the proposed project are carried out in sub-step 2c.

#### **(1) Basic parameters for calculation of financial indicators**

Based on the Feasibility Study Report of the proposed project, basic parameters for calculation of financial indicators are as follows:

Parameter	Data	Data Source
Installed capacity	49.9 MW	Feasibility Study Report
Annual output	111,010MWh	Feasibility Study Report
Project lifetime	21 years (one year for construction and twenty years of operation)	Feasibility Study Report
Total static investment	495.31 million RMB	Feasibility Study Report
Annual O&M cost <sup>16</sup>	15.22 million RMB	Feasibility Study Report
Depreciation period	20 years	Feasibility Study Report
Depreciation rate	4.75%	Feasibility Study Report
Residual value	5%	Feasibility Study Report
Tariff	0.61 RMB/kWh (including VAT)	Feasibility Study Report
Tax rate	17% (Nominal VAT, Real VAT is 8.5% since there is a half return policy)	Feasibility Study Report
	25% (Income tax)	
	5% (Educational surtax)	
	5% (City maintenance and construction surtax)	

## (2) Comparison of IRR for the proposed project and the financial benchmark

In accordance with the benchmark analysis (Option III), the proposed project will not be considered as financially attractive if its financial indicators (such as Project IRR) are lower than the benchmark.

Table 1 shows the IRRs of the proposed project, with and without CDM-related income. Without CDM-related income, the Project IRR is lower than the benchmark and the proposed project is not financially acceptable. With it, the Project IRR is better than the benchmark and therefore, the proposed project is financially acceptable.

**Table 1. Financial indicators of the Proposed Project**

	Project IRR (Total investment, benchmark=8%)
Without carbon-related income	6.94%
With carbon-related income	8.36%

<sup>16</sup> Annual O&M cost include salary and welfare, maintenance cost, material cost and miscellaneous cost.

**Sub-step 2d. Sensitivity analysis (only applicable to options II and III):  
sensitivity analysis**

The purpose of the sensitivity analysis is to examine whether the conclusion regarding the financial viability of the proposed project is sound and tenable with those reasonable variations in the assumptions. The investment analysis provides a valid argument in favour of additionality only if it consistently supports (for a realistic range of assumptions) the conclusion that the project activity is unlikely to be the most financially attractive or is unlikely to be financially attractive.

According to methodological tool “investment analysis” (version 11.0), only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation, and a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and -10%.

Therefore, total static investment is chosen for sensitivity analysis. Annual power supply and tariff are both key parameters to total project revenues. Annual O&M cost is another important parameter to total project costs. Considering installed capacity times annual operating hour equals to annual power output, both parameters are not selected. The tax rates are deemed relatively stable throughout the project lifetime. So they are not included in analysis. Therefore, the parameters (Total static investment, Annual O&M cost, Annual Power supply and Tariff) used in sensitivity analysis constitute more than 20% of either total project costs or total project revenues, and there are no other parameters having significant impact on the sensitivity analysis that are not included in the sensitivity analysis.

The critical factors that influence the Project IRR are mainly as follows:

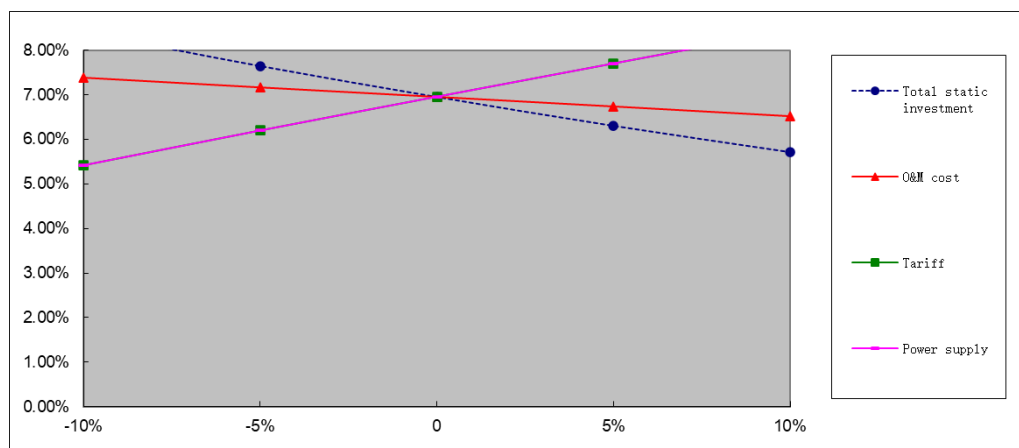
- 1) Total static investment;
- 2) Annual O&M cost;
- 3) Annual Power supply;
- 4) Tariff

They are fluctuated within the range from -10% to +10% in the FSR and the selection is also in accordance with the Guidance from “Tool for demonstration and assessment of additionality” (Version 07.0). Their impacts on Project IRR of the proposed project were presented in Table 2 and Figure 2.

**Table 2. Sensitivity of total investment IRR to different financial parameters**

Parameter	Range					Critical value
	-10%	-5%	0	5%	10%	
Total static investment	8.39%	7.64%	<b>6.94%</b>	6.30%	5.71%	-7.5%
Annual O&M cost	7.37%	7.16%	<b>6.94%</b>	6.72%	6.50%	-25%
Annual Power supply	5.41%	6.18%	<b>6.94%</b>	7.69%	8.42%	+7.2%
Tariff	5.41%	6.18%	<b>6.94%</b>	7.69%	8.42%	+7.2%

**Figure 2. Sensitivity of total investment IRR to different financial parameters**



From Table 2 and Figure 2, if the total static investment decrease for 10 percent, or the tariff and electricity supply increase for 10 percent, the project IRR could exceed the benchmark, this will be further discussed in the Critical value analysis. The O&M cost vary within the reasonable range, the project IRR does not surpass the benchmark under any of the assumptions.

In conclusion of the sensitive analysis, as the financial indicators vary within reasonable range, the proposed project remains financially unacceptable without carbon related support and the proposed project is additional.

### Critical value analysis:

#### Total static investment

If there is a decrease in total static investment by 7.5%, the IRR will reach the benchmark of 8%. However, the project construction has finished till now, the sum of equipment and EPC contracts value amount to 96.83% of the total static investment, and the actual investment is greater than the estimated in the FSR. Therefore, the total static investment could not be decreased for 7.5 percent.

#### Annual O&M cost

If the annual O&M cost decreases by 25%, the project IRR can only reach 8.00%. The annual O&M cost mainly includes maintenance cost, salary and the welfare, insurance cost, material cost and other miscellaneous costs. But according to the Chinese statistic yearbook<sup>17</sup>, there is an increasing tendency for the employee salary and the material price in the recent years. Thus, it is impossible for the operating costs decreasing by 25%.

#### Annual power supply

If the Annual power supply increases by 7.2%, the project IRR could reach 8.00%. However, a large variation of annual power supply is almost impossible. According to the FSR of the Project, the annual power generation is estimated basing on the long term weather statistic data (from 1981 to 2011) provided by local meteorological station and wind resources measurement, and then the data was entered into the professional software WAsP to calculate the annual theoretical electricity output. Considering the impacts of some factors like wake flow, climate, etc. on the annual theoretical electricity output, an effective discount factor was applied to calculate the feed-in electricity from the theoretical electricity output. This method of calculating electricity output is also approved by the

<sup>17</sup> <http://www.stats.gov.cn/tjsj/ndsj/2021/indexch.htm>

government and is widely used in China for wind energy. Therefore it is not credible to improve the economic attraction due to the increase in annual power supply.

#### **Tariff**

When the tariff increases by 7.2%, the project IRR can reach 8.00%. Based on the notification (Fa Gai Jia Ge 2009[1906]) issued by NDRC on July 20th, 2009. A fixed tariff is applied for land-based wind farm<sup>18</sup>. In the notification, NDRC compartmentalized four different wind resource districts. The proposed project belongs to class IV resource area, the fixed tariff is 0.61RMB/kWh which is the same with the FSR. Based on the new tariff notification from the government (Fa Gai Jia Ge 2016[2729])<sup>19</sup> issued by NDRC on 26/12/2016, the tariff is changed to 0.57 RMB/kWh, which is lower than the FSR estimation. Therefore, it is not possible to improve the post-tax project IRR through an increase in the tariff.

In conclusion of the sensitive analysis, as the financial indicators vary within reasonable range, the proposed project remains financially unacceptable without carbon related support and the proposed project is additional.

#### **Step 3. Barrier Analysis**

Not applicable.

#### **Step 4. Common practice analysis**

According to the methodological tool “common practice”(version 03.1), the stepwise approach for common practice is :

##### **Sub-step 4a: Calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity.**

The output range as +/-50% (between 24.95MW to 74.85MW) of the design output or capacity of the proposed project activity is applicable.

##### **Sub-step 4b: identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:**

- (a) The projects are located in the applicable geographical area;
- (b) The projects apply the same measure as the proposed project activity;
- (c) The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- (d) The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- (e) The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- (f) The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

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<sup>18</sup> [http://www.sdpc.gov.cn/zcfb/zcfbtz/2009tz/t20090727\\_292827.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/2009tz/t20090727_292827.htm)

<sup>19</sup> [https://www.ndrc.gov.cn/xxgk/zcfb/tz/201612/t20161228\\_962832.html?code=&state=123](https://www.ndrc.gov.cn/xxgk/zcfb/tz/201612/t20161228_962832.html?code=&state=123)

In China, the general environment of projects of wind power projects such as the wind resources<sup>20</sup>, tariff, and investment climate are only similar and comparable in the same province<sup>21</sup>. Therefore, the common practice region and comparable framework is provincial and the proposed project is compared to other projects in Hunan Province. The proposed project is a wind power projects, and the construction started in 11/2015.

Therefore, the similar projects are wind power plants with installed capacity between 24.95MW to 74.85MW located in Hunan Province, which started commercial operation before 11/2015.

Table 3 similar projects list

Project name	Remark
Hunan Chenzhou Yangtianhu 36.3MW Wind Power Project	CDM project
Hunan Chenzhou Xiangdian Luhejin 48MW Wind Power Project	CDM project
Hunan Huashun Wind Farm Project	CDM project
Hunan Linwu Sanshiliuwan 48MW Wind Power Project	CDM project
Hunan Longhui County Baolian Wind Farm Project	CCER project
Hunan South_Linwu Wind Farm Project	CCER project
Hunan Huarong Taohuashan Wind Farm Project	CCER project
Hunan Guiyang Laixi Wind Farm Project	CCER project

**Sub-step 4c :** within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number  $N_{all}$ .

Since the whole Hunan province is located in “class IV wind resource area” as identified by NDRC, the wind power projects in Hunan province are less financial attractive, and all the project owner invest the wind power projects based on that CCER and other carbon related revenue could be applied to increase the financial availability. Before 2013, all the 4 wind power projects in Hunan Province have been registered as CDM projects. After 2013, all the wind power projects are applying the CCER program. Therefore,  $N_{all} = 0$ .

**Sub-step 4d :** within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number  $N_{diff}$ .

There is no similar projects without applying carbon related revenue, therefore,  $N_{diff}=0$

**Sub-step 4e:** calculate factor  $F=1-N_{diff}/N_{all}$  representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

**The proposed project activity is a “common practice” within a sector in the applicable geographical area if the factor F is greater than 0.2 and  $N_{all}-N_{diff}$  is greater than 3.**

$$F=1- N_{diff}/ N_{all} =0<0.2$$

$$N_{all}- N_{diff}=0<3$$

<sup>20</sup> <http://wenku.baidu.com/view/c6bf7858be23482fb4da4c6c.html>

<sup>21</sup> [http://www.sdpc.gov.cn/nyjt/nyzywx/t20050810\\_41378.htm](http://www.sdpc.gov.cn/nyjt/nyzywx/t20050810_41378.htm)

Hence, it is concluded that the proposed project is not common practice within the region.

Therefore, the proposed project is additional.

## B.6. Estimation of emission reductions

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### B.6.1. Explanation of methodological choices

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**The key methodological steps are as follows:**

1. Calculating the Baseline Emission ( $BE_y$ )
2. Calculating the Project Emission ( $PE_y$ )
3. Calculating the Leakage Emission ( $LE_y$ )
4. Calculating the Emission Reduction ( $ER_y$ )

#### 1. Calculating the Baseline emissions

The baseline emissions ( $BE_y$ ) is the product of the baseline emissions factor ( $EF_{grid,CM,y}$  in tCO<sub>2</sub>e/MWh) calculated, times the electricity supplied by the project activity to the grid ( $EG_{PJ,y}$  in MWh), as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

##### 1.1 Calculation of the baseline emissions factor

Following GCCM001 and “Tool to calculate the emission factor for an electricity system”, the baseline emission factor ( $EF_y$ ) is calculated as a combined margin ( $EF_{grid,CM}$ ), consisting of the combination of operating margin ( $EF_{grid,OM}$ ) and build margin ( $EF_{grid,BM}$ ) factors according to the following seven steps defined in the “Tool to calculate the emission factor for an electricity system” (version 7.0).

Data for the calculations are based on the latest emission factor of the CCPG grid in China as approved by Chinese DNA ([https://www.mee.gov.cn/ywgz/ydqhbh/wsqtzk/202012/t20201229\\_815386.shtml](https://www.mee.gov.cn/ywgz/ydqhbh/wsqtzk/202012/t20201229_815386.shtml) ).

Step1. Identify the relevant electricity systems.

Step2. Choose whether to include off-grid power plants in the project electricity system (optional).

Step3. Select a method to determine the operating margin (OM).

Step4. Calculate the operating margin emission factor according to the selected method.

Step5. Calculate the build margin emission factor.

Step6. Calculate the combined margin (CM) emissions factor.

##### Step 1. Identify the relevant electricity systems

For determining the electricity emission factors, a project electricity system is defined by the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity (e.g. the renewable power plant location or the consumers where electricity is being saved) and that can be dispatched without significant transmission constraints.

Similarly, a connected electricity system, e.g. national or international, is defined as an electricity system that is connected by transmission lines to the project electricity system. Power plants within the connected electricity system can be dispatched without significant transmission constraints but transmission to the project electricity system has significant transmission constraint.

If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used.

The DNA of China has published a delineation of the project electricity system and connected electricity systems, this delineation is used. Following the DNA delineation, the project electricity system is Central China Power Grid (CCPG), which consists of Hunan, Hubei, Henan, Jiangxi, Chongqing and Sichuan provincial Power Grids. The proposed project is located in Hunan Province and covered by CCPG. Therefore, CCPG is chosen as the relevant electric power system.

Electricity transfers from connected electricity systems to the project electricity system are defined as electricity imports and electricity transfers to connected electricity systems are defined as electricity exports.

For the purpose of determining the build margin emission factor, the spatial extent is limited to the project electricity system, except where recent or likely future additions to transmission capacity enable significant increases in imported electricity. In such cases, the transmission capacity may be considered a build margin source.

For the purpose of determining the operating margin emission factor, use one of the following options to determine the CO<sub>2</sub> emission factor(s) for net electricity imports ( $EF_{grid,import,y}$ ) from a connected electricity system within the same host country(ies):

- (a) 0 tCO<sub>2</sub>/MWh, or
- (b) The weighted average operating margin (OM) emission rate of the exporting grid, determined as described in step 4 (d) below; or
- (c) The simple operating margin emission rate of the exporting grid, determined as described in step 4 (a), if the conditions for this method, as described in step 3 below, apply to the exporting grid; or
- (d) The simple adjusted operating margin emission rate of the exporting grid, determined as described in step 4 (b) below.

The option (a) is selected.



**STEP 2. Choose whether to include off-grid power plants in the project electricity system (optional)**

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

**Option I:** Only grid power plants are included in the calculation.

**Option II:** Both grid power plants and off-grid power plants are included in the calculation.

According to the Approval of electricity connection to CCPG, all the power generated by the project activity will be supplied to the power grid company. Thus, the proposed project does not include off-grid power plants in the project electricity system and Option I is chosen.

**Step 3. Select a method to determine the operating margin (OM)**

The calculation of the operating margin emission factor ( $EF_{grid,OM,y}$ ) is based on the following methods:

- (a) Simple OM, or
- (b) Simple adjusted OM, or
- (c) Dispatch Data Analysis OM, or
- (d) Average OM.

Detailed information to carry out a dispatch data analysis is not publicly available; therefore, method (b) and method (c) is not suitable for the proposed project.

According to ACM0002, the Simple OM method is applicable to the project if the low-cost resources constitute less than 50% of total grid generation on average in the five most recent years or based on long-term normals for hydroelectric production.

According to the “China Electricity Yearbook”, the share of low-cost/must-run generation in CCPG is much lower than 50%. The Simple OM method, therefore, is selected to calculate the Operating Margin emission factor of the proposed project.

The Simple OM can be calculated using either of the two following data vintages for years(s)  $y$ :

- (Ex-ante option): If the ex ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. For grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation.
- (Ex-post option): If the ex post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emission factor to be updated annually during monitoring.

Here ex-ante vintage is chosen, and the  $EF_{grid,OM}$  is fixed during the first crediting period.

**Step 4. Calculate the operating margin emission factor according to the selected method**

The Simple OM emission factor is calculated as the generation-weighted average CO<sub>2</sub> emissions per unit net electricity generation (tCO<sub>2</sub>/MWh) of all generating power plants serving the system, not including low-cost / must-run power plants / units. The simple OM may be calculated:

- Option A: Based on the net electricity generation and a CO<sub>2</sub> emission factor of each power unit, or
- Option B: Based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system.

For the proposed project activity, the required data for the exercise of Option A is not available and those of Option B can be obtained from official sources, and off-grid power plants are not included in the calculation, therefore, Option B is chosen to calculate the operating margin emission factor:

For Option B, the Simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost / must-run power plants / units, and based on the fuel type(s) and total fuel consumption of the project electricity system, as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_{i,m} FC_{i,y} \cdot NCV_{i,y} \cdot EF_{CO_2,i,y}}{\sum_m EG_y} \quad (2)$$

Where:

- $EF_{grid,OMsimple,y}$  = Simple operating margin CO<sub>2</sub> emission factor in year  $y$  (tCO<sub>2</sub>e/MWh)
- $FC_{i,y}$  = Amount of fossil fuel type  $i$  consumed in the project electricity system in year  $y$  (mass or volume unit)
- $NCV_{i,y}$  = Net calorific value (energy content) of fossil fuel type  $i$  in year  $y$  (GJ / mass or volume unit)
- $EF_{CO_2,i,y}$  = CO<sub>2</sub> emission factor of fossil fuel type  $i$  in year  $y$  (tCO<sub>2</sub>e/GJ)
- $EG_y$  = Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units, in year  $y$  (MWh)
- $i$  = All fossil fuel types combusted in power sources in the project electricity system in year  $y$
- $y$  = The relevant year as per the data vintage chosen in Step 3

For this approach (simple OM) to calculate the operating margin, the simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost / must-run power plants / units, and including electricity imports to the grid. Electricity imports should be treated as one power plant source.

Regarding parameter selection, local values of  $NCV_{i,y}$  and  $EF_{CO_2,i,y}$  should be used where available. If no such values are available, IPCC world-wide default values are preferable. The Net Calorific Value ( $NCV_{i,y}$ ) of each type of fossil fuel used in the calculation comes from China Energy Statistic Yearbook . Emission factors ( $EF_{CO_2,i,y}$ ) of each type of fossil fuel come from IPCC 2006 default values.

On the basis of the data available, the three-year (from 2015 to 2017) average operating margin emission factor is calculated as a full-generation-weighted average of the emission factors:

$$EF_{grid,OMsimple} = 0.8587 \text{ tCO}_2\text{e/MWh}$$

### Step 5. Calculate the build margin emission factor

In terms of the vintage of the data, two options are given in the tool. In this case Option 1 is chosen: For the first crediting period, the build margin emission factor is calculated ex-ante based on the most recent information available on units already built for sample group  $m$  at the time of CDM-PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

The sample group of power units  $m$  used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

(a) Identify the set of five power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently (SET5-units) and determine their annual electricity generation ( $AEG_{SET-5-units}$ , in MWh);

(b) Determine the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities ( $AEG_{total}$ , in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of  $AEG_{total}$  (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) ( $SET \geq 20\%$ ) and determine their annual electricity generation ( $AEG_{SET \geq 20\%}$ , in MWh);

(c) From SET5-units and  $SET \geq 20\%$  select the set of power units that comprises the larger annual electricity generation ( $SET_{sample}$ );

The build margin emission factor is the generation-weighted average emission factor ( $\text{tCO}_2/\text{MWh}$ ) of all power units  $m$  during the most recent year  $y$  for which power generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (3)$$

Where:

$EF_{grid,BM,y}$	=	Build margin CO <sub>2</sub> emission factor in year $y$ (tCO <sub>2</sub> e/MWh)
$EG_{m,y}$	=	Net quantity of electricity generated and delivered to the grid by power unit $m$ in year $y$ (MWh)
$EF_{EL,m,y}$	=	CO <sub>2</sub> emission factor of power unit $m$ in year $y$ (tCO <sub>2</sub> e/MWh)
$m$	=	Power units included in the build margin
$y$	=	Most recent historical year for which power generation data is available

Currently, it is very difficult to get the capacity margin data of power plants in China, since these data as well as net quantity of electricity generated and delivered to the grid and fuel consumption data in power unit  $m$  are regarded as commercial secrets or only for internal usage. Then the following deviation<sup>22</sup> approved by the EB was adopted to calculate the Build Margin emission factor.

According to the guidance from the CDM Executive Board for a deviation of the baseline methodology of AM0005, which had combined into the baseline methodology of ACM0002, the following deviation was adopted to calculate the Build Margin emission factor.

- 1) Use the efficiency level of the best technologies commercially available in the provincial/regional or national grid of China, as a conservative proxy, for fuel  $i$  consumption estimation to estimate the  $EF_{grid,BM,y}$ .
- 2) Use capacity additions during last several years for estimating the  $EF_{grid,BM,y}$ , i.e. the capacity addition over last several years, whichever results in a capacity addition that is closest to 20% of total installed capacity. For the proposed project, the data from Year 2015 to 2017 is used to calculate  $EF_{grid,BM,y}$ .
- 3) Use installed capacity to replace annual power generation to estimate weights.

The BM emission factor in this PDD is calculated as following sub-steps.

Sub-step 1. Calculation of weights of CO<sub>2</sub> emissions of solid, liquid and gaseous fossil fuels in total emissions for power generation

$$\lambda_{Coal,y} = \frac{\sum_{i \in COAL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}} \quad (4)$$

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<sup>22</sup>Source:[http://cdm.unfccc.int/UserManagement/FileStorage/AM\\_CLAR\\_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ](http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ)

$$\lambda_{Oil,y} = \frac{\sum_{i \in OIL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}} \quad (5)$$

$$\lambda_{Gas,y} = \frac{\sum_{i \in GAS,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO_2,i,y}} \quad (6)$$

Where:

$FC_{i,j,y}$  = Amount of fossil fuel type  $i$  consumed in province  $j$  in year  $y$  (mass or volume unit)

$NCV_{i,y}$  = Net calorific value (energy content) of fossil fuel type  $i$  in year  $y$  (GJ/t or GJ/m<sup>3</sup>)

$EF_{CO_2,i,y}$  = CO<sub>2</sub> emission factor of fossil fuel type  $i$  in year  $y$  (tCO<sub>2</sub>e/GJ)

*Coal, Oil* and *Gas* refer to the group of solid, liquid, and gaseous fossil fuels, respectively.

Sub-step 2: Calculation of Emission Factor of Relevant Thermal Power

$$EF_{Thermal,y} = \lambda_{Coal,y} \times EF_{Coal,Adv,y} + \lambda_{Oil,y} \times EF_{Oil,Adv,y} + \lambda_{Gas,y} \times EF_{Gas,Adv,y} \quad (7)$$

Where:

$EF_{Coal,Adv}$ ,  $EF_{Oil,Adv}$  and  $EF_{Gas,Adv}$  refer to the emission factors representing best technologies commercially available for coal, oil and gas fired power plants, respectively.

Sub-step 3: Calculation of BM of the Grid

Using the share of different type of capacity in total capacity addition as weight, the weighted average of emission factors of different type capacity is calculated as the Build Margin emission factor  $EF_{grid,BM,y}$  of NECPG.

$$EF_{grid,BM,y} = \frac{CAP_{Thermal,y}}{CAP_{Total,y}} \times EF_{Thermal,y} \quad (8)$$

Where:

$CAP_{Total}$  = The total newly added electricity generation capacity (MW)

$CAP_{Thermal}$  = The newly added electricity generation capacity of thermal power (MW)

Following the four steps above, the build margin emission factor  $EF_{grid,BM,y}$  of CCPG is calculated to be: 0.2854 tCO<sub>2</sub>e/MWh.

### Step 6. Calculate the combined margin emission factor

The baseline emissions factor ( $EF_{CM}$ ) is calculated as the weighted average of the Operating Margin emission

factor and Build Margin emission factors following “Tool to calculate the emission factor for an electricity system”. For wind projects, the default weights are as follows:  $w_{OM} = 0.75$  and  $w_{BM} = 0.25$ :

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM} \quad (9)$$

Where:

- $EF_{grid,BM,y}$  = Build margin CO<sub>2</sub> emission for the project electricity system factor in year y (tCO<sub>2</sub>e/MWh)
- $EF_{grid,OM,y}$  = Operating margin CO<sub>2</sub> emission factor for the project electricity system in year y (tCO<sub>2</sub>e/MWh)
- $w_{OM}$  = Weighting of operating margin emissions factor (%)
- $w_{BM}$  = Weighting of build margin emissions factor (%)

On the basis of these weights for the first crediting period, the combined margin emission factor is calculated, and fixed ex-ante:

$$EF_{grid,CM,y} = 0.8587 \text{tCO}_2/\text{MWh} \times 0.75 + 0.2854 \text{tCO}_2/\text{MWh} \times 0.25 = 0.7154 \text{tCO}_2/\text{MWh}$$

Baseline emissions ( $BE_y$ ) now can be calculated as the combined margin CO<sub>2</sub> emission factor ( $EF_{grid,CM,y}$ ) multiplied by the annual net generation of the Proposed Project ( $EG_{PJ,y}$ ).

## 2 Calculating the Project Emission ( $PE_y$ )

According to GCCM001 (version 3.0), for most renewable power generation project activities,  $PE_y = 0$ .

## 3 Calculating the Leakage Emission ( $LE_y$ )

According to GCCM001 (version 3.0), no leakage is considered. The main emissions potentially giving rise to leakage are neglected.

## 4 Calculating the Emission Reduction ( $ER_y$ )

The annual emission reductions  $ER_y$  for the project activity are calculated as the baseline emissions minus the project emissions and minus the leakage emissions. The final GHG emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y \quad (10)$$

where:

$ER_y$  = Emission reductions in year y (t CO<sub>2</sub>e)

$BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>e)

$PE_y$  = Project emissions in year y (t CO<sub>2</sub>e)

## B.6.2 Data and parameters fixed ex ante

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**Data / Parameter Table 1.**

<b>Data / Parameter:</b>	$EF_{grid,y}$
Methodology reference	“Tool to calculate the emission factor for an electricity system” (version 07.0).
Data unit	tCO <sub>2</sub> e/MWh
Description	CO <sub>2</sub> emission factor of the grid electricity in year y
Measured/calculated/default	CO <sub>2</sub> emission factor for grid connected power generation in year y (t CO <sub>2</sub> /MWh) determined by:  Latest available emission factor of the Grid in China as approved by its relevant National Authority or Designated National Authority (DNA)
Data source	The latest grid emission factor approved by the Chinese DNA <a href="https://www.mee.gov.cn/ywqz/ydqhbh/wsqtzk/202012/t20201229_815386.shtml">https://www.mee.gov.cn/ywqz/ydqhbh/wsqtzk/202012/t20201229_815386.shtml</a>
Value(s) of monitored parameter	0.7154
Measurement/Monitoring equipment (if applicable)	Not applicable.
Measuring/reading/recording frequency (if applicable)	Once determined, the emission factor will remain fixed for the entire crediting period
Calculation method (if applicable)	Calculated based on the latest available $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$
QA/QC procedures	N.A
Purpose of data	To calculate the baseline emissions
Additional comments	N.A

**B6.3. Ex-ante calculation of emission reductions**

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**Baseline emissions**

Annual generation (net electricity generation supplied by the project to the Grid) is estimated as 111,010 MWh. Therefore,  
 $EG_{P,y} = 111,010$  MWh

$$EF_{grid,y} = 0.7154 \text{ tCO}_2/\text{MWh}$$

$$BE_y = EG_{PJ,y} * EF_{grid,y} = 111,010 \text{ MWh} \times 0.7154 \text{ tCO}_2/\text{MWh} = 79,413 \text{ tCO}_2\text{e}$$

**Project emissions**

According to GCCM001, for most renewable power generation project activities,  $PE_y = 0$ .

**Leakage**

According to GCCM001, no leakage is considered.

**Project Emission Reductions**

$$ER_y = BE_y - PE_y$$

The total annual baseline emissions are 79,413 tCO<sub>2</sub>e.

The total annual project emissions are 0 tCO<sub>2</sub>e.

The total annual leakage emissions are 0 tCO<sub>2</sub>e.

$$ER_y = BE_y - PE_y = 79,413 \text{ tCO}_2 \text{ e} - 0 \text{ tCO}_2 \text{ e} = 79,413 \text{ tCO}_2\text{e}.$$

The annual emission reductions are estimated to be: 79,413 tCO<sub>2</sub>. The proposed project activity is expected to achieve 794,130 tCO<sub>2</sub>e of net emission reductions during the 10-year crediting period.

**B.6.4. Summary of ex ante estimates of emission reductions**

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Year	Baseline emissions (t CO <sub>2</sub> e)	Project emissions (t CO <sub>2</sub> e)	Leakage (t CO <sub>2</sub> e)	Emission reductions (t CO <sub>2</sub> e)
16/03/2017 - 31/12/2017	63,313	0	0	63,313
01/01/2018 - 31/12/2018	79,413	0	0	79,413
01/01/2019 - 31/12/2019	79,413	0	0	79,413
01/01/2020 - 31/12/2020	79,413	0	0	79,413
01/01/2021 - 31/12/2021	79,413	0	0	79,413
01/01/2022 - 31/12/2022	79,413	0	0	79,413
01/01/2023 - 31/12/2023	79,413	0	0	79,413
01/01/2024 - 31/12/2024	79,413	0	0	79,413
01/01/2025 - 31/12/2025	79,413	0	0	79,413
01/01/2026 - 31/12/2026	79,413	0	0	79,413
01/01/2027 - 15/03/2027	16,100	0	0	16,100



<b>Total</b>	<b>794,130</b>	0	0	<b>794,130</b>
<b>Total number of crediting years</b>	10			
<b>Annual average over the crediting period</b>	79,413	0	0	79,413

## B.7. Monitoring plan

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### B.7.1. Data and parameters to be monitored *ex-post*

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#### Data / Parameter Table 2.

<b>Data / Parameter:</b>	EG <sub>PJ,y</sub>
Methodology reference	GCCM001
Data unit	MWh
Description	Quantity of net electricity generation supplied by the project plant to the grid in year y
Measured/calculated/default	Measured and calculated, This parameter is measured and monitored using a bi-directional energy meter and calculated as the difference between (a) the quantity of electricity supplied by the project plant to the grid, and (b) the quantity of electricity delivered to the project plant from the grid
Data source	Electricity meter(s)
Value(s) of monitored parameter	111,010 MWh

Measurement/ Monitoring equipment			
	M1	M2	
	Type of meter	2000-6E20-1C3E1-141-621-H06	DTZ341
	Location of meter	Tiantangshan 110KV substation	35KV-trasmission lines
	Accuracy of meter	0.2S	0.5S
	Serial number of meter	251201301	2106530931000094
	Calibration frequency	6 years	6 years
	Date of Calibration/ validity		
	Reference No. of Calibration Certificate		
	Calibration Status	Calibrated	Calibrated
	M3	M4	
	Type of meter	DTZ341	DTZ341
	Location of meter	35KV-trasmission lines	35KV-trasmission lines
	Accuracy of meter	0.5S	0.5S
	Serial number of meter	2106530931000095	2106530931000092
	Calibration frequency	6 years	6 years
	Date of Calibration/ validity		
	Reference No. of Calibration Certificate		
	Calibration Status	Calibrated	Calibrated
Measuring/reading/ recording frequency	Continuous monitoring, hourly measurement and at least monthly recording.		
Calculation method (if applicable)	This parameter is measured and monitored using electricity meters and calculated as the difference between (a) the quantity of electricity supplied by the project plant to the grid, and (b) the quantity of electricity delivered to the project plant from the grid		
QA/QC procedures	The electricity meters measuring net electricity export to grid are subject to regular maintenance and testing in accordance with the stipulation of the national standards. The calibration of meters, including the frequency of calibration, will be done in accordance with national standards. The accuracy class of the meters are in accordance with the stipulation of the requirements set by the grid operators or national requirements. The quantity of electricity supplied by the project plant to the grid, and the quantity of electricity delivered to the project plant from the grid will be crossed checked by the electricity transaction notes issued by local grid company.		
Purpose of data	To calculate the baseline emissions;		

	To assess the contribution SDG 7 and 9 and 13.
Additional comments	N.A

**For Parameters to be monitored for E+/S+ assessments and SDG labels ( positive impacts)**

<b>Data / Parameter:</b>	CO <sub>2</sub> emissions	
Purpose:	To assess the Impact of Project Activity on environment-air- CO <sub>2</sub> emissions To assess the contribution SDG 9 & SDG 13	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Reduction of CO <sub>2</sub> emissions due to implementation of project activity that would otherwise be emitted by thermal power plants.	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	CO <sub>2</sub> emissions
	Frequency of monitoring	Monthly
	Legal /regulatory / corporate limits (if any)	/
	QA/QC	The details of CO <sub>2</sub> emissions reduction will be maintained in records for future verification.
Remarks	/	

<b>Data / Parameter:</b>	<b>Number of staff</b>	
Purpose:	To assess the Impact of Project Activity on social-jobs- <i>Long-term jobs (&gt; 1 year) created/ lost</i> To assess the contribution SDG 8	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Number of recruited staff during operation	

Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Number of staff
	Frequency of monitoring	monthly
	Legal /regulatory / corporate limits (if any)	/
	QA/QC	The employment records or the social insurance payment records of employees will be maintained for future verification.
Remarks	/	

<b>Data / Parameter:</b>	<b>Job related training</b>	
Purpose:	To assess the Impact of Project Activity on social-education- Job related training imparted or not	
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Job-related training in order to increase the capability of the employees	
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG		
	Parameter to be monitored	Job related training
	Frequency of monitoring	monthly
	Legal /regulatory / corporate limits (if any)	/
	QA/QC	The job-related training records will be maintained for future verification.
Remarks	/	

<b>Data / Parameter:</b>	Quantity of net electricity supplied
Purpose:	To assess the contribution SDG 7 & SDG 9

Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	The project provides clean & renewables electricity.											
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate “harmless” condition or demonstrate Impact on SDG	<table border="1"> <tr> <td data-bbox="496 520 808 554"></td> <td data-bbox="815 520 1422 554"></td> </tr> <tr> <td data-bbox="496 562 808 617">Parameter to be monitored</td> <td data-bbox="815 562 1422 617">EG<sub>PJ,y</sub></td> </tr> <tr> <td data-bbox="496 625 808 680">Frequency of monitoring</td> <td data-bbox="815 625 1422 680">Monthly</td> </tr> <tr> <td data-bbox="496 688 808 743">Legal /regulatory / corporate limits (if any)</td> <td data-bbox="815 688 1422 743">/</td> </tr> <tr> <td data-bbox="496 751 808 785">QA/QC</td> <td data-bbox="815 751 1422 785">Please refer to the parameter “ EG<sub>PJ,y</sub>”.</td> </tr> </table>				Parameter to be monitored	EG <sub>PJ,y</sub>	Frequency of monitoring	Monthly	Legal /regulatory / corporate limits (if any)	/	QA/QC	Please refer to the parameter “ EG <sub>PJ,y</sub> ”.
Parameter to be monitored	EG <sub>PJ,y</sub>											
Frequency of monitoring	Monthly											
Legal /regulatory / corporate limits (if any)	/											
QA/QC	Please refer to the parameter “ EG <sub>PJ,y</sub> ”.											
Remarks	Check the project operation logs to confirm the project implementation continues.											

**B.7.2. Data and parameters to be monitored for E+/S+ assessments (negative impacts)**

>>  
There is no parameter evaluated as “Harmful” in Section E.

**B.7.3. Sampling plan**

>>N.A.

**B.7.4. Other elements of the monitoring plan**

>>  
The proposed project adopts the approved methodology GCCM001 version 3.0 to determine the emission reductions from the net electricity generation from the wind farm. This plan describes in more detail the process.

**1. Monitoring Object**

The monitoring is to justify the realistic amount of emission reduction from the project. The monitoring plan will provide credible, accurate, transparent and conservative monitoring data and ensure the real, measurable, long-term GHG emission reduction from this project.

**2. Management Structure**

The project owner will use this document as guideline in monitoring of the project emission reduction performance and will adhere to the guidelines set out in this monitoring plan to ensure that the monitoring is credible, transparent and conservative.

The responsibilities of the project staff are as follow:

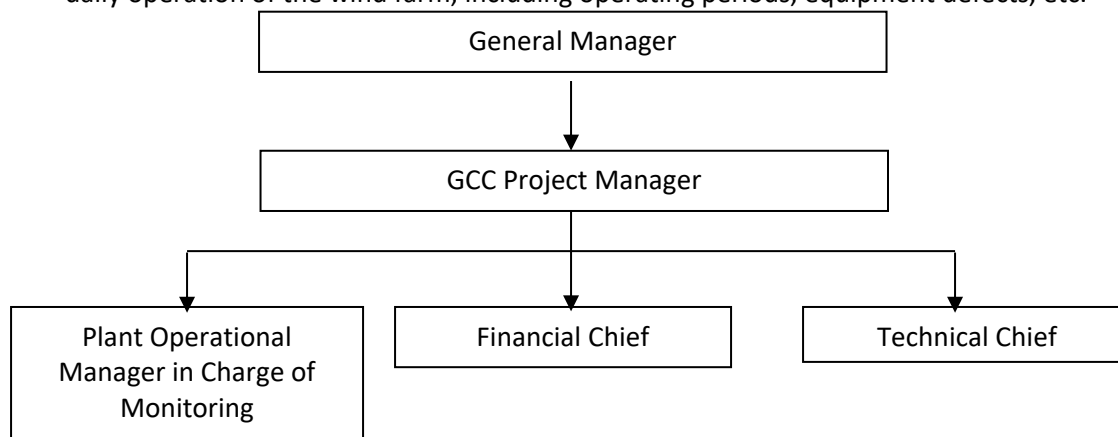
General Manager: To be responsible for supervising the whole monitoring procedure.

GCC Project Manager: To be responsible for data management and compiling monitoring report.

Operational and monitoring manager: To be responsible for collecting data.

Financial chief: To be responsible for collection of sales receipts.

Technical chief: To be responsible for preparing operational reports of the project activity, recording the daily operation of the wind farm, including operating periods, equipment defects, etc.



### 3. Monitoring Equipments

Meter(s) will be installed in accordance with “Technology and Management Regulations for Power Metering Devices”. The meter(s) will be installed in the project site to measure the electricity supply to the grid by the Project.

The electricity generated by the project is delivered to the Tiantangshan 110KV substation through three 35KV-transmission lines. The proposed project shares the Tiantangshan 110KV substation with another wind power project (Tiantangshan Phase I wind farm). The electricity generated by the two projects is transmitted to the Changning 220KV substation which belongs to the local grid of CCPG.

The quantity of electricity supplied by the project plant to the grid is monitored by three meters installed at the 35-KV transmission lines, i.e. M2, M3 and M4.

The quantity of electricity delivered to the project plant from the grid is monitored by one meter installed at the Tiantangshan 110KV substation, i.e M1, which measured the imported electricity for both the proposed project and Tiantangshn (Phase I) project. For conservative consideration, the imported electricity of these two projects is applied as the quantity of electricity delivered to the project.

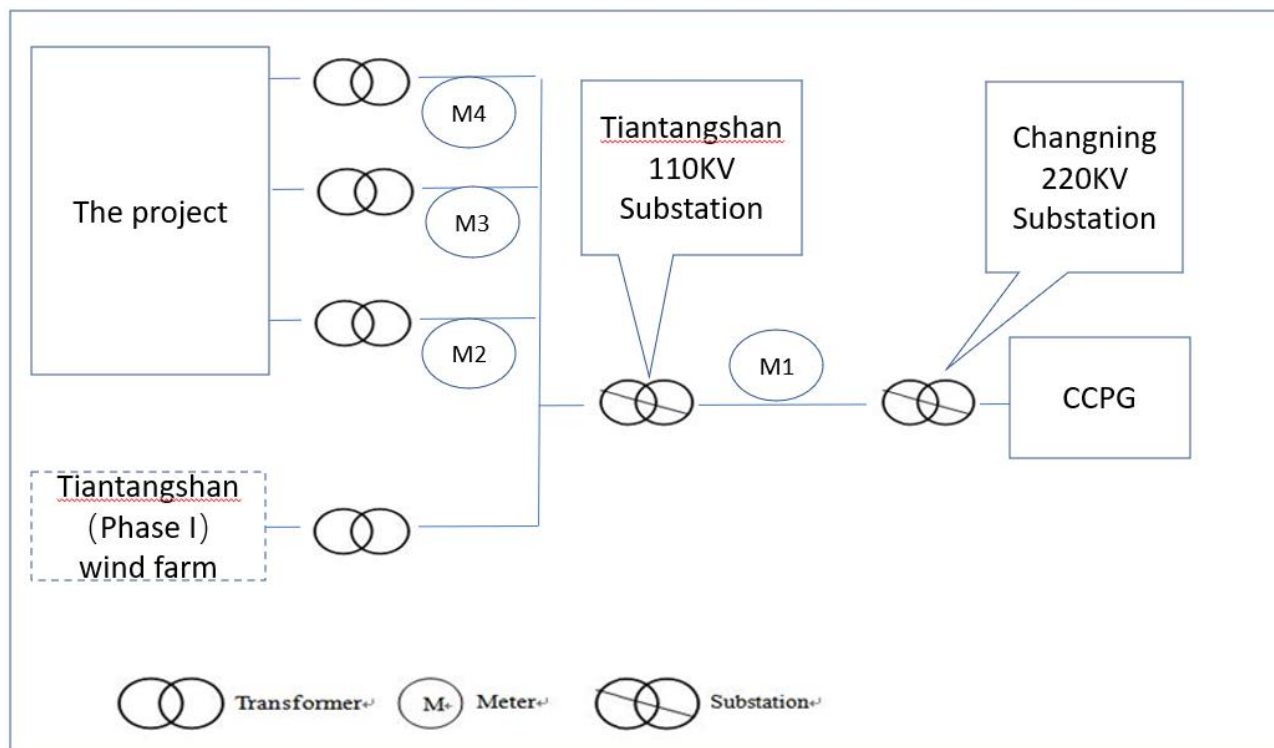


Figure 3 Simplified electrical grid connection diagram

#### 4. Data Collection

The readings of meters installed in the project activity site will be used for calculating the emission reductions. The monitoring process is as follows:

- The data is measured continuously and recorded monthly;
- The project owner provides the grid company with sales records and keeps the copies of these sales records. The power grid company provides the project owner with the data of power imported from the power grid;
- The developer carries out an internal audit and reports the readings and records of sales and purchases and relevant commercial data and will be approved and signed off by GCC manager before it is accepted and stored.
- The project owner will provide DOE with record of net power generation data and copies of sales records.

#### 5. Quality Assurances and Quality Control

Net electricity supplied to the grid will be cross-checked with records of sales and purchases and relevant commercial data and will be approved and signed off by GCC manager before it is accepted and stored. The quality assurance and quality control procedures for recording, maintaining and archiving data shall be improved as part of this project activity.

#### 6. Calibration of Meters

The metering equipment will be properly calibrated and checked periodically according to the relative rules

(for example JIG596-2012). Calibration is carried out by qualified third party according to relevant regulations of electric industry. Calibration is carried out with the records being provided to the developer, and these records will be maintained by the developer.

### **7. Data Management System**

To keep safely the record of the data collected during monitoring, this project will set up a complete data management system.

At the end of each month, the monitoring data will be collected and archived by the designated staff of the project owner. Furthermore, the project owner collects the sales receipts as a cross-check, and compiled the monitoring report including the monitoring data and relevant evidence at the end of each crediting year.

All the data will be kept for two years following the end of the last crediting period.

## **Section C. Start date, crediting period type and duration**

### **C.1. Start date of the Project Activity**

>>

Start date of project activity is 16/03/2017, when the last wind turbine put into operation.

### **C.2. Expected operational lifetime of the Project Activity**

>>

20 years.

### **C.3. Crediting period of the Project Activity**

>>

#### **C.3.1. Start and end date of the crediting period**

>>

The crediting period is fixed as 10 years.

The start date of the crediting period is 16/03/2017 and the end date of the crediting period is 15/03/2027.

#### **C.3.2. Duration of crediting period**

>>

Start date of the crediting period is 16/03/2017, when the last wind turbine put into operation.



Duration of the crediting period: 16/03/2017 – 15/03/2027.

## **Section D. Environmental impacts**

### **D.1. Analysis of environmental impacts**

>>

The environmental impact assessment was prepared in 02/2015 approved by Hunan Environmental Protection Bureau on 07/04/2015. A summary of the report is illustrated as below:

#### **Ambient air**

The impact on ambient air quality of the proposed project is mainly from dust during construction stage, by sprinkling water frequently and timely clearing can reduce the dust pollution. When the project is in operational period, there will be no air pollutions. In conclusion, the proposed project will not pose any threat on the quality of ambient air.

#### **Impact from Wastewater**

Wastewater is mainly domestic wastewater. Wastewater quantity is fairly small and treatment methods will be applied for on-site primary treatment, and then the wastewater will be treated together with the local wastewater. Small-scale septic tanks should be built on the site, through which the discharging wastewater will be used as virescence water. Therefore, the impact of wastewater is limited and mitigated.

#### **Impact from noise**

There is some noise during the operation of wind turbines. The equipment and techniques with lower noise will be chosen to apply. Improvement on construction process and strengthening of equipment maintenance is emphasized. *Environmental quality standard for noise (GB3096-2009) Level I* and *Emission standard for industrial enterprise noise at boundary (GB12348-2009) Level I* noise standard would be fulfilled during the construction and operational period. Consequently, the noise of operation has little impact to the surrounding environment. Hence, the noise will not impact the work and daily life of local residents.

#### **Impact from Solid waste**

Solid wastes generated from the proposed project activity are excavated earth material and municipal solid waste. Part of the excavated earth material will be backfilled, and the rest will be used for land levelling and road construction near the project site. The municipal solid waste will be collected and treated together with the waste from local residents. As the report indicates, solid waste is handled properly.

#### **Electromagnetic impact**

The operation of the wind farm will generate electromagnetic pollution, whereas the pollution is slight. In

addition, the wind turbines are very far from local residents and village. Therefore, the electronic magnetic pollution to the surrounding environment is insignificant.

### **Ecological impact**

There is some birds and little animals live in the area of the proposed project, there will be little impact resulted from the wind farm construction on the birds. In the operation time, there will be a little impact as well, but it won't be serious .

## **D.2. Environmental impact assessment and management action plans**

>>

An environmental impact assessment was prepared in order to assess the environmental effects of the project activity. The report has been prepared in accordance with Chinese national laws/standards, and has been approved by Hunan Environmental Protection Bureau on 07/04/2015.

## **Section E. Environmental and social safeguards**

>>

## E.1. Environmental safeguards

>>

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion			
		Description of Impact ( positive or negative)	Legal/ voluntary corporate requirement / regulatory/ voluntary corporate threshold Limits	Do-No-Harm Risk Assessment (choose which ever is applicable)			Risk Mitigation Action Plans for aspects marked as Harmful		Performance indicator for monitoring of impact		Ex-ante scoring of environmental impact	Explanation of the Conclusion
				Not Applica ble	Harmless	Harmful	Operational Controls	Program of Risk Management Actions	Monitoring parameter frequency and of	Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)		
<b>Environmental Aspects on the identified categories<sup>23</sup> indicated below.</b>	Indicators for environmental impacts	Describe and identify anticipated and actual significant environmental impacts, both positive and negative from all sources (stationary and mobile) during normal and abnormal/emergency conditions, that may result from the construction and operations of the Project Activity, within and outside the project boundary, over which the Project Owner(s) has/have control.	Describe the applicable national regulatory requirements /legal limits / voluntary corporate limits related to the identified risks of environmental impacts.	If no environmental impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Not Applicable</b>	If environmental impacts exist, but are expected to be in compliance with applicable national regulatory /stricter voluntary corporate requirements and will be within legal/voluntary corporate limits by way of plant design and operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Harmless</b> /if	If negative environmental impacts exist that will not be in compliance with the applicable national legal/regulatory requirements or are likely to exceed legal limits, then the Project Activity is likely to cause harm (may be un-safe) and shall be indicated as <b>Harmful</b>	Describe the operational controls and best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as <b>'Harmful'</b> at least to a level that is in compliance with applicable legal/regulator requirements or industry best practice or stricter voluntary corporate requirements	Describe the Program of Risk Management Actions (refer to Table 3), focusing on additional actions (e.g., installation of pollution control equipment) that will be adopted to reduce or eliminate the risk of impacts that have been identified as <b>Harmful</b> .	Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless of harmful. The frequency of monitoring to be specified as well including the data source.	-1 0 +1	Confirm the score of environmental impact of the project with respect to the aspect and its monitored value in relation to legal /regulatory limits (if any) including basis of conclusion.	

<sup>23</sup> sourced from the CDM SD Tool and the sample reports are available ( <https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx> )

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					<i>the project has an positive impact on the environment mark it as "harmless" as well.</i>						
<b>Reference to paragraphs of Environmental and Social Safeguards Standard</b>		Paragraph 12 (a)	Paragraph 13 (c)	Paragraph 13 (d) (i)	Paragraph 13 (d) (ii)	Paragraph 13 (d) (iii)	Paragraph 13 (e) (i)	Paragraph 13 (e) (ii)	Paragraph 12 (c) and Paragraph 13 (f)	Paragraph 22	
<b>Environment - Air</b>	SO <sub>x</sub> emissions (EA01)	N.A									
	NO <sub>x</sub> emissions (EA02)	N.A									
	CO <sub>2</sub> emissions (EA03)	The project reduces CO <sub>2</sub> emissions since it reduces the amount of fossil fuel used. In case of "no project", stated amount of electricity would likely be generated from fossil and cause CO <sub>2</sub> emissions .	N.A	N.A.	The project will not cause any harm in this regard	N.A.	N.A	N.A	Continuous measuring for electricity generation will be done by using electricity meters. Emission reduction calculations will be done according to the generation values.	+1	The project reduces CO <sub>2</sub> emissions by providing renewable electricity to the grid which is dominated by fossil fuel power plants.
	CO emissions (EA04)	N.A									
	Suspended particulate matter (SPM) emissions (EA05)	N.A									
	Fly ash generation (EA06)	N.A									

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	<i>Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)</i>	N.A.									
	<i>Odor (EA08)</i>	N.A.									
	<i>Noise Pollution (EA09)</i>	The turbines may cause noise pollutions depending on the technology used and also the closest settlement to the project area. the project follows the requirements in the EIA report.	Regulation on the Ambient Noise Evaluation and Control has the limit of 60 DB.	N.A.	Harmless According to the <i>Environmental acceptance test report</i> , the noise impact from the project is below the legal limit.	N.A.	N.A.	N.A.	The assessment of potential impact through noise pollution concluded that no further monitoring is required (harmless).	0 The project will be unlike to impact negatively to the environment regarding noise pollution.	According to the assessment report (noise modelling) the impact is below the legal limit and therefore qualified as harmless.
	<i>Others (EA10)</i>	N.A.									
	<i>Add more rows if required and corresponding notation with EA as prefix)</i>	N.A.									
<b>Environment - Land</b>	<i>Solid waste Pollution from Plastics (EL-01)</i>	There may be plastic wastes generated at the end of domestic use at the project site. Those wastes are properly stored and disposed.	According to the Solid Waste Regulation , domestic solid wastes	N.A.	Harmless The amount of waste is expected to be very little, and	N.A.	N.A.	N.A.	The domestic waste from the employees are collected in closed trashes and disposed by the municipality. Thus no further	0 The project will be unlike to impact negatively to the environment	The domestic waste from the employees are collected in closed trashes and disposed by the municipality, the project is unlikely

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			shall be collected in closed trashes and disposed by the municipality		solid wastes shall be collected in closed trashes and disposed by the municipality, thus the impact is assessed as harmless.				monitoring required (harmless).	is regarding <i>Solid waste Pollution from Plastics</i> .	to cause any harm realted to the Solid waste Pollution from Plastics
<i>Solid waste Pollution from Hazardous wastes(EL 02)</i>	There may be oil wastes generated at the project site. Waste oil is disposed via licenced recycling firms.	According to "hazardous wastes handling management regulations", waste oil should be disposed via licenced recycling firms.	N.A.	Harmless  The amount of waste is expected to be very little, and the hazardous waste (lubricating oil) will be disposed via licenced recycling firms, thus the impact is assessed as harmless.	N.A.	N.A.	N.A.	The amount of waste is expected to be very little, and the hazardous waste will be disposed via licenced recycling firms according to the law. Thus no further monitoring is required (harmless).	0  The project will be unlike to impact negatively to the environment regarding <i>Solid waste Pollution from Hazardous wastes</i>	The amount of hazardous waste (lubricating oil) would be very little and would be disposed via licenced recycling firms according to the law, the project is unlikely to cause any harm realted to the Solid waste Pollution from Hazardous wastes.	
<i>Solid waste Pollution from Bio-medical wastes (EL03)</i>	N.A										
<i>Solid waste Pollution from E-wastes (EL04)</i>	N.A										

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	<i>Solid waste Pollution from Batteries (EL05)</i>	N.A									
	<i>Solid waste Pollution from end of life products/ equipment (EL06)</i>	N.A									
	<i>Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)</i>	N.A									
	<i>land use change ( change from cropland /forest land to project land) (EL08)</i>	N.A									
	<i>Others (EL09)</i>	N.A									
	<i>Add more rows if required</i>										
	<i>Reliability/ accessibility of water</i>	N.A									

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<b>Environment - Water</b>	<i>supply (EW01)</i>										
	<i>Water Consumption from ground and other sources (EW02)</i>	N.A.									
	<i>Generation of wastewater (EW03)</i>	Project generates wastewater caused by the domestic use, the amount is very little and the project has built a buried integrated sewage treatment equipment, and the domestic sewage will be reused as green water after treatment, and will not be discharged outside.	No waste water discharged outside the project site.	N.A.	Harmless. The project has built a buried integrated sewage treatment equipment, and the domestic sewage will be reused as green water after treatment, and will not be discharged outside.	N.A.	N.A.	N.A.	The project has built a buried integrated sewage treatment equipment, and the domestic sewage will be reused as green water after treatment, and will not be discharged outside.  Thus no further monitoring is required (harmless).	0 The project will be unlikely to impact negatively to the environment regarding <i>Generation of wastewater</i> .	Project generates wastewater caused by the domestic use, the amount is very little and the project has built a buried integrated sewage treatment equipment, and the domestic sewage will be reused as green water after treatment, and will not be discharged outside. The project is unlikely to cause any harm due to the generation of wastewater.
	<i>Wastewater discharge without/with insufficient treatment (EW04)</i>	N.A. The project does not cause any wastewater discharge without treatment.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	<i>Pollution of Surface, Ground and/or Bodies of water (EW05)</i>	N.A. The project does not cause water pollution of surface and groundwater and water bodies since it is a wind power plant.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	<i>Discharge of harmful chemicals</i>	N.A.									



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	<i>like marine pollutants / toxic waste (EW06)</i>										
	<i>Others (EW07)</i>	N.A.									
	<i>Add more rows if required</i>										
<b>Environment – Natural Resources</b>	<i>Conserving mineral resources (ENR01)</i>	N.A.									
	<i>Protecting/enhancing plant life (ENR02)</i>	There are no nationally protected plants or plant areas within the site boundary.  Floras existing in the project area was determined and protected.	"Three Simultaneous" System for Environmental Protection of Construction Projects	N.A							
	<i>Protecting/enhancing species diversity (ENR03)</i>	There may be harmful effects for birds due to turbine operation.  The project are not in the migration path of birds	N.A		Harmless.  The wind farm is not located at migratory passage for birds, and there is no large area of wetlands around the wind farm. Therefore, the operation of wind farms has no impact on	N.A	N.A	N.A	The wind farm is not located at migratory passage for birds, and there is no large area of wetlands around the wind farm. Therefore, the operation of wind farms has no impact on migrating wild migratory birds. Thus no further monitoring is required.	0  The project will be unlike to impact negatively to the environment regarding <i>Protecting/enhancing species diversity</i> .	The wind farm is not located at migratory passage for birds, and there is no large area of wetlands around the wind farm. Therefore, the operation of wind farms has no impact on migrating wild migratory birds. The project is unlike to cause any harm to the <i>species diversity</i> .

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					migrating wild migratory birds.						
	<i>Protecting/enhancing forests (ENR04)</i>	N.A									
	<i>Protecting/enhancing other depletable natural resources (ENR05)</i>	N.A									
	<i>Conserving energy (ENR06)</i>	N.A									
	<i>Replacing fossil fuels with renewable sources of energy (ENR07)</i>	N.A									
	<i>Replacing ODS with non-ODS refrigerants (ENR08)</i>	N.A									
	<i>Others (ENR09)</i>	N.A									
	<i>Add more rows if required</i>										
<b>Net Score:</b>			<b>+1</b>								
<b>Project Owner's Conclusion in PSF:</b>			The Project Owner confirms that the Project Activity will not cause any net harm to Environment.								

<b>GCC Project Verifier's Opinion:</b>	
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## E.2. Social Safeguards

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Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion	
		Description of Impact <i>(positive or negative)</i>	Legal requirement /Limit, Corporate policies / Industry best practice	Do-No-Harm Risk Assessment <i>(choose which ever is applicable)</i>			Risk Mitigation Action Plans (for aspects marked as Harmful)	Performance indicator for monitoring of impact.	Ex-ante scoring of environmental impact	Explanation of the Conclusion
				Not Applicable	Harmless	Harmful	Operational / Management Controls	Monitoring parameter and frequency of monitoring (as per scoring matrix Appendix-02)	Ex- Ante scoring of social impact of the project	Ex- Ante description and justification/explanation of the scoring of social impact of the project
<b>Social Aspects on the identified</b>	<i>Indicators for social impacts</i>	<i>Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all source during normal and abnormal/emergency conditions that may result from constructing and operating of the Project Activity within or outside the project boundary, over which the project Owner(s) has/have control</i>	<i>Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts</i>	<i>If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as <b>Not Applicable</b></i>	<i>If social impacts exist, but are expected to be in compliance with applicable national regulatory requirements/ stricter voluntary corporate limits by way of plant design and operating principles then the Project Activity is unlikely to cause any harm (is safe)</i>	<i>If negative social impacts exist that will not be in compliance with the applicable national legal/ regulatory requirements or are likely to exceed legal limits then the Project Activity is likely to cause harm and shall be</i>	<i>Describe the operational or management controls that can be implemented as well as best practices, focusing on how to implement and operate the Project Activity, to reduce the risk of impacts that have been identified as <b>Harmful.</b></i>	<i>Describe the monitoring approach and the parameters (KPI) to be monitored for each impact irrespective of whether it is harmless or harmful. The frequency of monitoring to be specified as well. Monitoring parameters can be quantitative or qualitative in nature along with the data source</i>	-1 0 +1	<i>Confirm the score of the social impacts of the project with respect to the aspect and its monitored value in relation to legal/regulatory limits (if any) including basis of conclusion</i>

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<i>categories<sup>24</sup> indicated below.</i>					<i>and shall be indicated as Harmless), project having positive impact on society wrt. To the BAU / baseline scenario must also mark their aspect as "harmless"</i>	<i>indicated as Harmful</i>				
<b>Reference to paragraphs of Environmental and Social Safeguards Standard</b>		Paragraph 12 (a)	Paragraph 13 (c)	Paragraph 13 (d) (i)	Paragraph 13 (d) (ii)	Paragraph 13 (d) (iii)	Paragraph 13 (e) (i)	Paragraph 12 (c) and Paragraph 13 (f)	Paragraph 23	
<b>Social - Jobs</b>	<i>Long-term jobs (&gt; 10 year) created/ lost (SJ01)</i>	<i>The project creates long term job opportunities during operation.</i>	All employments are done according to the national employment regulations.	N.A	Harmless.  Long-term jobs provided by the project is benefit to society and no harm will be caused.	N.A	N.A	Employment records could prove the positive impact of the project.	+1	12 people have been employed as long terms employee.
	<i>New short-term jobs (&lt; 1 year) created/ lost (SJ02)</i>	N.A.								
	<i>Sources of income generation increased / reduced (SJ03)</i>	N.A.								

<sup>24</sup> sourced from the CDM SD Tool and the sample reports are available ( <https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx> )

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	<p><i>Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04)</i></p> <p><i>( human rights)</i></p>	N.A.								
<b>Social - Health &amp; Safety</b>	<p><i>Disease prevention (SHS01)</i></p>	N.A.								
	<p><i>Occupational health hazards (SHS02)</i></p>	N.A.								
	<p><i>Reducing / increasing accidents /incidents/fatality (SHS03)</i></p>	N.A.								
	<p><i>Reducing / increasing crime (SHS04)</i></p>	N.A.								
	<p><i>Reducing / increasing</i></p>	N.A.								

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	<i>g food wastage (SHS05)</i>									
	<i>Reducing / increasing indoor air pollution (SHS06)</i>	N.A.								
	<i>Efficiency of health services (SHS07)</i>	N.A.								
	<i>Sanitation and waste management (SHS08)</i>	N.A.								
	<i>Other health and safety issues (SHS09)</i>	N.A.								
	<i>Add more rows if required</i>									
<b>Social - Education</b>	<i>specialized training / education to local personnel (SE01)</i>	<i>The project owner provides job related training for the special positions.</i>	No legal requirement on training for such project.	harmless	The training will help the staffs familiar with the project operation and increasing the capability. No harm will be caused.			Check training records	+1	The training will improve the employee's skills and create positive impact.
	<i>Educational services improved or not (SE02)</i>	N.A.								

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	<i>Project-related knowledge dissemination effective or not (SE03)</i>	N.A.								
	<i>Other educational issues (SE03)</i>	N.A.								
	<i>Add more rows if required (SE04)</i>	N.A.								
<b>Social - Welfare</b>	<i>Improving/deteriorating working conditions (SW01)</i>	N.A.								
	<i>Community and rural welfare (indigenous people and communities) (SW02)</i>	N.A.								
	<i>Poverty alleviation (more people above poverty level) (SW03)</i>	N.A.								

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	<i>Improving / deteriorating wealth distribution/ generation of income and assets (SW04)</i>	N.A.								
	<i>Increase d or / deteriorating municipal revenues (SW05)</i>	N.A.								
	<i>Women's empowerment (SW06)</i> <i>(human rights)</i>	N.A.								
	<i>Reduced / increased traffic congestion (SW07)</i>	N.A.								
	<i>Exploitation of Child labour (human rights)</i> <i>(SW08)</i>	N.A.								
	<i>Minimum wage protection</i>	N.A.								



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	(human rights) (SW09)									
	Abuse at work place.(with specific reference to women and people with special disabilities / challenges )  (human rights) (SW10)	N.A.								
	Other social welfare issues (SW11)	N.A.								
	Avoidance of human trafficking and forced labour  (human rights) (SW12)	N.A.								
	Avoidance of forced eviction and/or partial physical or economic	N.A.								

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	<i>c displacement of IPLCs (human rights) (CW13)</i>									
	<i>Provisions of resettlement and human settlement displacement (human rights) (CW14)</i>	N.A.								
	<i>Add more rows if required</i>	N.A.								
<b>Net Score:</b>			+2							
<b>Project Owner's Conclusion in PSF:</b>			The Project Owner confirms that the Project Activity will not cause any net harm to society.							
<b>GCC Project Verifier's Opinion:</b>										

**Section F. United Nations Sustainable Development Goals (SDG)**

>>

The project is expected to contribute 4 SDGs which are SDG 7, 8, 9 and 13.

**SDG 7 Energy:** The project contributes SDG Target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix” by the utilization of hydropower as a renewable energy source.

Related indicator: 7.2.1 Renewable energy share in the total final energy consumption

**SDG 8 Economic Growth:** The project creates direct and indirect employment opportunities during construction and operation phases, so it contributes to SDG Target 8.5 “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value”.

Related indicator: 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

**SDG 9 Infrastructure, Industrialization:** SDG Target 9.4 requires “By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities”. The project helps the Target 9.4 by implementing a clean, reliable and environmental-friendly infrastructure for clean energy production / up-to-date industrialization.

Related indicator: 9.4.1 CO2 emission per unit of value added

**SDG 13 Climate Change:** The project produces clean renewable energy by diminishing CO2 emissions. Therefore, it contributes SDG Target 13.2.2 Total greenhouse gas emissions per year.

Related indicator: 13.2.2 Total greenhouse gas emissions per year.

UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs			
			Project-level SDGs	Project-level Targets/Actions	Contribution of Project-level Actions to SDG Targets	Monitoring

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<p><b>Describe UN SDG targets and indicators</b></p> <p>See:  <a href="https://unstats.un.org/sdgs/indicators/indicators-list/">https://unstats.un.org/sdgs/indicators/indicators-list/</a></p>	<p>Describe the UN-level target(s) and corresponding indicator no(s)</p>	<p>Has the host country declared the SDG to be a national priority? Indicate Yes or No</p>	<p>Define project-level SDGs by suitably modifying and customizing UN/ Country-level SDGs to the project scope or creating a new indicator(s). Refer to previous column of guidance.</p>	<p>Define project-level targets/actions in line with need project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).</p>		<p>Describe and justify how actions taken under the Project Activity are likely to result in a direct positive effect that contributes to achieving the defined project-level SDG targets</p>	<p>Describe the monitoring approach and the monitoring parameters to be applied for each project-level SDG indicator and its corresponding target, frequency of monitoring and data source</p>
<p><b>Goal 1: End poverty in all its forms everywhere</b></p>	<p>N.A.</p>						
<p><b>Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b></p>	<p>N.A.</p>						
<p><b>Goal 3. Ensure healthy lives and promote well-being for all at all ages</b></p>	<p>N.A.</p>						
<p><b>Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b></p>	<p>N.A.</p>						
<p><b>Goal 5. Achieve gender equality and empower all women and girls</b></p>	<p>N.A.</p>						

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<b>Goal 6. Ensure availability and sustainable management of water and sanitation for all</b>	N.A.						
<b>Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all</b>	SDG Target 7.2 “By 2030, increase substantially the share of renewable energy in the global energy mix” by the utilization of biomass as a renewable energy source.” Indicator 7.2.1 Renewable energy share in the total final energy consumption	Yes	Increase the share of renewables in the total installed power capacity connected to the national grid.	Provide 111,010 MWh clean energy annually.	Enhance the share of installed electricity generation capacity from renewable energy sources.	The project increases the renewable energy share in Chinese energy production mix. It provides 111,010 MWh annual clean energy to the grid.	Monitor the quantity of net electricity supplied by the project during the project lifetime.
<b>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b>	SDG Target 8.5 “By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities and equal pay for work of equal value”. Indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	Yes	Generated job opportunities and income	Provide a minimum number of 12 employment opportunity.	Minimum 12 people to be recruited including all levels.	The project created job opportunity for both construction and operation period. It created long term employment for Minimum 12 people who are directly working at the site.	employment records
<b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b>	SDG Target 9.4 requires “By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities”.	Yes	Provides one clean and resilient energy generation facility	Project implementation is a 111,010 MWh resilient energy generation facility.	Project provides clean energy avoding 79,413 tCO2 annually.	The project helps adaptation of clean energy technologies by implementation of wind power plant	Check project implementation continues.

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	Indicator: 9.4.1 CO2 emission per unit of value added							
<b>Goal 10. Reduce inequality within and among countries</b>	N.A.							
<b>Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable</b>	N.A.							
<b>Goal 12. Ensure sustainable consumption and production patterns</b>	N.A.							
<b>Goal 13. Take urgent action to combat climate change and its impacts</b>	SDG Target 13.2 Integrate climate change measures into national policies, strategies and planning. Indicator 13.2.2: Total greenhouse gas emissions per year.	Yes	Eliminates annually	79,413 tCO2	Commission 111,010 MWh renewable energy plant.	Reduce greenhouse gas emissions by 79,413 tonnes annually.	Since the project uses wind energy, there is no GHG emissions related to the project activity. It eliminates 79,413 tCO2 annually.	Calculate avoided GHG emissions every year.
<b>Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</b>	N.A.							
<b>Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse</b>	N.A.							

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land degradation and halt biodiversity loss							
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels							
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development							
<b>SUMMARY</b>						<b>Targeted</b>	
<b>Total Number of SDGs</b>						<b>4</b>	
<b>Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF</b>						<b>Gold</b>	

## Section G. Local stakeholder consultation

### G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

>>

The proposed project has taken revenue of carbon credit (Chinese Certified Emission Reduction, CCER, which is a Chinese domestic GHG program incorporated the rules and requirements from CDM) support into account to overcome potential financial barrier since feasibility study stage. However, the CCER program is suspended by the government in 2017. Considering that the CCER has been suspended for over five years and there is no exact time of reopening, the project owner seeks to get carbon revenue from GCC to overcome the project financial difficulties. The local stakeholder consultation was conducted according to the environment impact assessment law and the CCER/CDM.

On 09/10/2015, the project owner carried out a survey of the local residents around the project location. The local stakeholder consultation survey announcements was posted on local neighborhood committees.



Figure 4 Local stakeholder consultation survey announcement

The staff introduced the background of the proposed project and then sent out 25 copies of questionnaire in a random way. Among the interviewees, 20 of them are local residents, 5 are governmental officials from local villages to represent the opinions from local villages.

The survey questions are shown as below:

1. Have there been any environmental pollution incidents or disturbance incidents during the construction period of the project?
2. Do you think there is any environmental impact or possible environmental problems during the construction and operation of the project?
3. Do you think this project will have any impact on your life during the construction period and operation period?
4. Are you satisfied with the effect of environmental protection and ecological restoration measures taken during the construction and operation of the project?
5. Do you support the construction and formal operation of this project?



Totally 25 questionnaires were returned. The information of the participants is shown in table below.

Item		Number	percentage	
Questionnaires in total		25	100%	
Questionnaires from the representative of local villages		5	20%	
Questionnaires from local residents		20	80%	
Information of the 20 local residents	Gender	Male	15	75%
		Female	5	25%
	Occupation	Farmer	18	90%
		Official	2	10%
	Age	18-40	4	20%
		40-60	14	70%
		>60	2	10%
	Education	Primary school	4	20%
		Junior high school	13	65%
		High school	2	10%
University		1	5%	

An invitation notice for stakeholder comments was later issued by the project developer, 25 representatives of local stakeholders, including governmental officials of local village and local residents attended the meeting to discuss the questionnaires collected and further introduce the project. No negative opinion on construction of the project is heard and environmental considerations expressed by stakeholders are discussed on the meeting.

## G.2. SUMMARY OF COMMENTS RECEIVED

>>

According to the survey results, 90% of the surveyed public are satisfied with the overall attitude of the project's environmental protection work, 5% are aware it, and 5% are not satisfied. 95% of the surveyed public support the construction and operation of the project, 5% of the public said it doesn't matter.

The results of the survey from local residents are shown as below:

1. 85% think that there was no environmental pollution incidents or disturbance incidents during the construction period of the project, 15% think it's unclear.
2. 60% think the project has no environmental impact or possible environmental problems during the construction and operation of the project, 20% think may has impact in solid waste, 5% think may has impact in noise, and 5% think it's unclear.
3. 70% think this project will not have any impact on their life during the construction period and operation period, 30% think it will have little impact.

4. 90% are satisfied with the effect of environmental protection and ecological restoration measures taken during the construction and operation of the project, 5% is not satisfied and 5% is not clear.
5. 95% support the construction and formal operation of the project, and 5% think it doesn't matter.

The comments received are listed below.

- The implementation of the project will promote the local economic development.
- During the construction period, the project owner should take proper measures to mitigate the impacts of, dust, wastewater and municipal solid waste.
- During operation period, the project owner should properly treat municipal solid waste.

Most of the participants support the implementation of the project. They believe these impacts can be well managed by the project owner and cause no harm to their living standards. Instead, the project will promote local renewable energy use and enhance the productivity of local industries to make a better economy for local people.

The mitigation measures on environmental impacts have been well addressed in the EIA report and the project owner strictly implemented these measures during the construction and operation periods. The project attained EIA acceptance approval from the local environmental protection bureau since it was put into operation. Therefore, the project has little negative impacts to the local environment and communities.

### G.3. CONSIDERATION OF COMMENTS RECEIVED

>>

According to the questionnaire survey of the comments received, local stakeholders are mostly supportive of the proposed project. A few of local residents were concerned about the environmental impact such as solid waste. As discussed in the EIA report, these issues are well illuminated and specific instructions were given to mitigate the potential impacts of these issues. Solid wastes generated from the proposed project activity are excavated earth material and municipal solid waste. Part of the excavated earth material will be backfilled, and the rest will be used for land levelling and road construction near the project site. The municipal solid waste will be collected and treated together with the waste from local residents. As the report indicates, solid waste is handled properly. The environmental impacts can be avoided, controlled or mitigated via thorough implementation of the mitigation measures. Therefore, the proposed project can be carried out as planned.

## Section H. Approval and authorization

>>

N.A.

## APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

<b>Organization name</b>	Chenzhou Xiangshui Tiantangshan Wind Power Co., Ltd.
<b>Country</b>	China
<b>Address</b>	Room 104, Unit 2, Building 6, Chengling International, No. 96, Ouyang Hai Road, Longtan Street, Guiyang County, Hunan Province, P.R. China
<b>Telephone</b>	0086-0735-4452560
<b>Fax</b>	0086-0735-4452560
<b>E-mail</b>	GCC_czxs@163.com
<b>Website</b>	<a href="https://www.czxsstts.cn/">https://www.czxsstts.cn/</a>
<b>Contact person</b>	QING Sujuan

<b>Organization name</b>	Shanghai ideacarbon information technology Co., Ltd
<b>Country</b>	China
<b>Address</b>	Room 508, No. 680, Guiping Road, Xuhui District, Shanghai, P.R. China
<b>Telephone</b>	0086 13916276975
<b>Fax</b>	0086-0735-4452560
<b>E-mail</b>	liukc@ideacarbon.org
<b>Website</b>	<a href="http://www.ideacarbon.org/">http://www.ideacarbon.org/</a>
<b>Contact person</b>	Liu Kaicheng

## APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

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There is no public funding for the Tiantangshan 50MW wind power generation project.

## APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)

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No further information, this section has been left blank intentionally

## APPENDIX 4. FURTHER BACKGROUND INFORMATION ON EX ANTE CALCULATION OF EMISSION REDUCTIONS

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No further information, this section has been left blank intentionally.

## APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

&gt;&gt;

No further information, this section has been left blank intentionally.

## APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

&gt;&gt;

Summary of local stakeholders survey comments:

调查内容 Survey content	调查结果 Survey results	人数 Number of people	统计百分比 (%) Percent (%)
1. 本项目施工期是否发生过环境污染事件或扰民事件? 1. Have there been any environmental pollution incidents or disturbance incidents during the construction period of the project?	有 Yes	0	0
	无 No	17	85
	不清楚 Not clear	3	15
2. 您认为本项目在施工期、试运行期是否存在环境影响或存在哪些环境问题? 2. Do you think there is any environmental impact or possible environmental problems during the construction and operation of the project?	水污染 Water	1	5
	大气污染 Air	0	0
	噪声 Noise	1	5
	固体废物 Solid waste	4	20
	生态破坏 destruction of ecology	0	0
	电磁辐射 Electromagnetic radiation	0	0
	其他 Other	0	0
	无影响 No impact	12	60
	不清楚 Not clear	1	5
3. 您认为本项目在施工期、试运行期对您的生活是否有影响? 3. Do you think this project will	影响较大 Great impact	0	0
	影响较小	6	30

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have any impact on your life during the construction period and operation period?	Less impact		
	无影响 No impact	14	70
4. 您对本项目施工期、试运行期采取的环境保护和生态恢复措施效果是否满意? 4. Are you satisfied with the effect of environmental protection and ecological restoration measures taken during the construction and operation of the project?	满意 Satisfied	18	90
	不满意 Not satisfied	1	5
	不清楚 Not clear	1	5
5. 您是否支持本项目建设和正式投入运行? 5. Do you support the construction and formal operation of this project?	支持 Support	19	95
	不支持 Not support	0	0
	无所谓 No matter	1	5

**APPENDIX 7. SUMMARY OF DE-REGISTERED CDM PROJECT OR PROJECTS FROM OTHER GHG / NON-GHG PROGRAMS (TYPE B)**

>> Not applicable, this section has been left blank intentionally

**Appendix 8. FURTHER INFORMATION ON DETERMINATION OF BUNDLE IN PROJECT ACTIVITY.**

>> The project is not a bundled project.

**Appendix 9. PUBLIC DECLARATION FOR A2 ( Sub Type 2 and 3), B1 & B2 PROJECTS ON NON CONTINUATION FROM CDM/GHG/NON-GHG PROGRAMS.**

>> The project is not a A2 (Sub Type 2 and 3) or B1 & B2 project.

## DOCUMENT HISTORY

Version	Date	Comment
V 4.0	27/09/2022	<ul style="list-style-type: none"> <li>▪ Revised version released on approval by Steering Committee as per GCC Program Process;</li> <li>▪ Revised version contains following changes:               <ul style="list-style-type: none"> <li>○ Introduced A3 type projects A2 project sub-types;</li> <li>○ Included revised Declaration by the 'Authorized Project Owner and focal point' on GCC requirements;</li> <li>○ Included modified format for E+/S+/ SDG assessment;</li> <li>○ Revised instructions for filling in the PSF;</li> <li>○ Editorial changes to the document.</li> </ul> </li> </ul>
V 3.2	31/12/2020	<ul style="list-style-type: none"> <li>▪ The name of GCC Program's emission units has been changed from "Approved Carbon Reductions" or ACRs to "Approved Carbon Credits" or ACCs.</li> </ul>
V 3.1	17/08/2020	<ul style="list-style-type: none"> <li>▪ Editorial revisions made               <ul style="list-style-type: none"> <li>○ Revised Table in section B.7.2 on Monitoring-program of risk management actions</li> <li>○ Revised Table in section E.1 on Environmental Safeguards</li> <li>○ Revised Table in section E.1 on Social Safeguards</li> <li>○ Revised Table in section F on United Nations Sustainable Development Goals (SDG)</li> </ul> </li> </ul>
V 3.0	05/07/2020	<ul style="list-style-type: none"> <li>▪ Revised version released on approval by Steering Committee as per GCC Program Process;</li> <li>▪ Revised version contains following changes:               <ul style="list-style-type: none"> <li>○ Change of name from Global Carbon Trust (GCT) to Global Carbon Council (GCC);</li> <li>○ Considered and addressed comments raised by Steering Committee:                   <ul style="list-style-type: none"> <li>➤ during physical meeting (SCM 01, dated 29 Oct 2019, Doha Qatar); and</li> <li>➤ electronic consultations EC01-Round 01 (15.09.2019 – 25.09.2019), EC01-Round 02 (27.03.2020 – 27.06.2020).</li> </ul> </li> <li>○ Feedback from Technical Advisory Board (TAB) of ICAO on GCC submission for</li> </ul> </li> </ul>

		approval under CORSIA <sup>25</sup> ;
V 2.0	25/06/2019	<ul style="list-style-type: none"> <li>▪ Revised version released for approval by the GCC Steering Committee.</li> <li>▪ Revised version includes additional details and instructions on the information to be provided, consequent to the latest developments world-wide (e.g., CORSIA EUC).</li> </ul>
V 1.0	01/11/2016	Initial version released under the GCC Program Version 1

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<sup>25</sup>See ICAO recommendation for conditional approval of GCC at [https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt\\_TAB\\_Report\\_Jan\\_2020\\_final.pdf](https://www.icao.int/environmental-protection/CORSIA/Documents/TAB/Excerpt_TAB_Report_Jan_2020_final.pdf)



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