المجلس العالمي للبصمة الكربونية
GLOBAL CARBON COUNCIL

Project Submission Form

V4.0- 2022

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COVER PAGE- Project Submission Form (PSF)	
Complete this form in accordance with the instructions attached at the end of this form.	
BASIC INFORMATION	
Title of the Project Activity as per LON/LOA	**Hunshuitang 30MW Grid-connected Solar Power Generation Project**
PSF version number	2.1
Date of completion / Updating of this form	12/11/2022
Project Owner(s) as per LON/LOA (Shall be consistent with De-registered CDM Type B Projects)	Sichuan Yanyuan Jiamihe Hydropower Development Co., Ltd. Carbon Road Limited.
Country where the Project Activity is located	The People's Republic of China
GPS coordinates of the project site(s)	The central geographical coordinates of the project is: Latitude (N): 27°29'02" / 27.4839° Longitude (E): 101°37'35" / 101.6264°
Eligible GCC Project Type as per the Project Standard (Tick applicable project type)	☒ **Type A:** ☐ Type A1 ☒ Type A2 ☒ Sub-Type 1 ☐ Sub-Type 2 ☐ Sub-Type 3 ☐ Sub-Type 4 ☐ Type A3 ☐ **Type B – De-registered CDM Projects:**[1] ☐ Type B1

[1] Owners of Type B projects shall fill in the form provided in Appendix 7.

	☐ Type B2
Minimum compliance requirements	☒ Real and Measurable GHG Reductions ☒ National Sustainable Development Criteria (if any) ☒ Apply credible baseline and monitoring methodologies ☒ Additionality ☒ Local Stakeholder Consultation Process ☒ Global Stakeholder Consultation Process ☒ No GHG Double Counting ☒ Contributes to United Nations Sustainable Development Goal 13 (Climate Action)
Choose optional and additional requirements (Tick applicable label categories)	☒ Do-no-net-harm Safeguards to address Environmental Impacts ☒ Do-no-net-harm Safeguards to address Social Impacts ☒ Contributes to United Nations Sustainable Development Goals (in addition to Goal 13)
Applied methodologies including version No. (Shall be approved by the GCC or the CDM)	GCCM001 Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers (Version 3.0)
GHG Sectoral scope(s) linked to the applied methodology(ies)	GHG-SS#1: Energy industries (renewable - / non-renewable sources)

Applicable Rules and Requirements for Project Owners

(Tick applicable Rules and Requirements)

Rules and Requirements		Version
☒ ISO 14064-2		
☒ Applicable host country legal requirements /rules		
☒ GCC Rules and Requirements[2]	☒ Project Standard	V3.1
	☒ Approved GCC Methodology (GCCM001)	V3.0
	☒ Program Definitions	V3.1
	☒ Environment and Social Safeguards Standard	V3.0
	☒ Project Sustainability Standard	V3.0
	☒ Instructions in Project Submission Form (PSF)-template	V4.0
	☒ Clarification No. 01	V1.3
	☐ Clarification No. 02	
	☒ Clarification No. 03	V1.0
	☒ Clarification No. 04	V1.0
	☐ Clarification No. 05	
	☒ Standard on avoidance of double counting	V1.0
	☐ Add rows if required	
☒ CDM Rules[3]	☐ Approved CDM Methodology (XXXXX)	
	☒ TOOL 1- Tool for the demonstration and assessment of additionality	V7.0.0
	☐ TOOL 02- Combined tool to identify the baseline scenario and demonstrate additionality	

[2] GCC Program rules and requirements: http://www.globalcarboncouncil.com/resource-centre/

[3] CDM Program rules: https://cdm.unfccc.int/Reference/index.html

		☒ TOOL 07- Tool to calculate the emission factor for an electricity system	V7.0
		☐ TOOL 19- Demonstration of additionality of microscale project activities	
		☐ TOOL 21- Demonstration of additionality of small-scale project activities	
		☐ TOOL 23- Additionality of first-of-its-kind project activities	
		☒ TOOL 24- Common practice	V3.1
		☒ TOOL 27- Investment analysis	V11.0
		☐ TOOL 32- Positive lists of technologies	
		☐ Guidelines for objective demonstration and assessment of barriers	
		☐ Add rows if required	

Choose Third Party Project Verification by approved GCC Verifiers[4] (Tick applicable verification categories)	☒ GHG emission reductions (i.e., Approved Carbon Credits **(ACCs)**) ☒ Environmental No-net-harm Label (**E+**) ☒ Social No-net-harm Label (**S+**) ☒ United Nations Sustainable Development Goals (**SDG+**) ☐ Bronze SDG Label ☒ Silver SDG Label ☐ Gold SDG Label ☐ Platinum SDG Label ☐ Diamond SDG Label ☒ CORSIA requirements (**C+**)

[4] **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.

	☐ Host Country Attestation on Double counting
Declaration by the 'Authorized Project Owner[5] and focal point' (Tick all applicable statements[6])	The Project Owner(s) declares that: **Generic Requirements applicable to all Project Types:** ☒ 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. ☒ 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. ☒ We confirm that the Project Activity is eligible to be registered under the GCC program. We shall ensure the following for the Project Activity (tick at least one of the two options): ☒ 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[7] program, either for compliance or voluntary purposes, during the entire GCC crediting period; or ☐ If the project activity has been issued with carbon credits or environmental attributes of compensating nature[8] 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. **Specific requirements applicable to respective Project Types:** ***For Project Type A1:*** ☐ 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

[5] The Project Owner means the legal entity or organization that has overall control and responsibility for the Project Activity

[6] **Consequences in case of Non-compliance with declaration statements:**
If at any point in 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.

[7] Non-GHG programs could be such as I-REC facilitating reliable energy claims with Renewable Energy Certificate (REC) schemes

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

	voluntary program and has not issued or will not issue credits under any other program. ***For Project Type A2 (Sub-Type 1):*** ☒ 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. ***For Project Type A2 (Sub-Type 2 or Sub-Type 3):*** 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): ☐ Submit a proof for deregistration from CDM; or ☐ Submit a signed & 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. ☐ 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). ***For Project Type A2 (Sub-Type 4):*** 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): ☐ Submit the proof for exclusion of CPA(s) from registered CDM-POA prior to the date of initial submission to the GCC Program; or ☐ 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. ***For Project Type A3:*** ☐ 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. ***For Project Type B1 or B2:***

	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): ☐ Submit a proof for deregistration from CDM; or ☐ Submit a signed & 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. **Requirements to avoid double counting:** We intend to submit or have submitted a written attestation[9] (Host Country Letter of Authorization - 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[10] (tick at least one of the three options): ☐ The initial submission for GSC; or ☐ Along with the submission for a request for registration (after Project Verification is completed); or ☐ Along with the submission for a request for the first or subsequent issuance of ACCs. **Project specific requirements:** ***CORSIA specific requirements:*** ☐ 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. ☒ We confirm that the Project Activity meets all the requirement of the CORSIA Eligible Emissions Units[11] required for GCC projects and does not fall under the excluded unit types, methodologies, programme elements, and/or procedural classes. ☒ 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). ☒ We confirm that the Project Activity will be implemented in a country which is UN member state[12].

9 In case of any change of Host Country Letter of Authorisation (HCLOA) the project owner shall inform the GCC operations team immediately

10 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 it's 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.

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

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

	Provide details (if any) below for the boxes ticked above:
	The Project Owner(s) declares that: ☒ All 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. ☒ 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 willful misconduct. Therefore, they are aware that they are fully responsible for any liability that arises as a result of such actions. Provide details below for the boxes ticked above
Appendixes 1-9	Details about the Project Activity are provided in Appendixes 1 through 9 to this document.
Name, designation, date and signature of the Focal point (as per LON/LOA)	**On behalf of Carbon Road Limited.** **Qiwei Ren, Project Manager**  **12/11/2022**

1. PROJECT SUBMISSION FORM

Section A. Description of the Project Activity

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

>>
Hunshuitang 30MW Grid-connected Solar Power Generation Project (hereafter referred to as "the project") is located in Weicheng Town, Yanyuan County, Liangshan Prefecture, Sichuan Province, the People's Republic of China.

The purpose of the project is to utilize the solar energy at the project site to generate and supply electricity to the Central China Power Grid (CCPG).

The spatial extent of the project boundary includes the project solar power plant and all other power plants connected physically to the CCPG which the project is also connected to.

Prior to the implementation of the project, 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 CCPG.

The project is a renewable energy project and is expected to supply an annual average of 41,568 MWh of zero-emission electricity to the CCPG during the fixed 10-year crediting period, which replace the power generation of those fossil fuel-fired power plants delivered to the CCPG under the baseline scenario. The project is expected to achieve greenhouse gas emission reductions of 29,737 tCO_2e annually. The total emission reductions during the fixed 10-year crediting period are 297,370 tCO_2e.

The project is expected to contribute to SDG 7, 8 and 13.

SDG 7 Energy: The project contributes to SDG Target 7.2 "By 2030, increase substantially the share of renewable energy in the global energy mix" by the utilization of solar 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 13 Climate Change: The project produces clean renewable energy by diminishing CO_2 emissions. Therefore, it contributes to 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 (N)**	**Longitude (E)**
Weicheng Town, Yanyuan County, Liangshan Prefecture, Shichuan Province of the People's Republic of China	27°29'02" (27.4839°)	101°37'35" (101.6264°)

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

Figure 1. Project Location

A.3. Technologies/measures

>>
Grid-connected solar PV power generation project mainly consists of solar PV arrays, inverters, transformers and substation.

The project involves the installation of a capacity of 30MW solar power plant, connecting to the CCPG through the substation installed at Xiadagou power plant. The electricity meter installed at the substation is to monitor electricity supplied to the CCPG and also electricity imported from the CCPG.

The technical parameters of the main equipment are listed in the table below.

Table 1: Technical specifications of main equipment

PV Module	**Values**
Type	YL260P-29b
Rated maximum power at STC (W)	260
Open circuit voltage (V_{oc}/V)	37.2
Short circuit current (I_{sc}/A)	8.37

A.4. Project Owner(s)

Location/ Country	**Project Owner(s)**	**Where applicable[13], indicate if the host country has provided approval (Yes/No)**
The People's Republic of China	Sichuan Yanyuan Jiamihe Hydropower Development Co., Ltd.	N/A
The People's Republic of China	Carbon Road Limited.	N/A

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**		

[13] 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).

14/03/2016	13/03/2026	To be confirmed during issuance	To be confirmed during issuance

ACCs from the project activity is used to create an additional revenue stream for the investment and for reducing the project financial risks and thus enabling the sustainability of the project. No double counting occurs in the scope of this project since GCC is the only program applied.

A.6. Additional requirements for CORSIA

>>
Please see Section H.

Section B. Application of selected methodology(ies)

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

>>
GCCM001: Methodology for Renewable Energy Generation Projects Supplying Electricity to Grid or Captive Consumers (V3.0).

Applied CDM tools:

- TOOL01: Tool for the demonstration and assessment of additionality (Version 7.0.0)
- TOOL07: Tool to calculate the emission factor for an electricity system (Version 7.0)
- TOOL24: Common practice (Version 3.1)
- TOOL27: Investment analysis (Version 11.0)

Please refer to the following link for applied methodology and tools:
https://www.globalcarboncouncil.com/standards/baseline-monitoring-methodologies/
https://cdm.unfccc.int/methodologies/PAmethodologies/approved

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

>>
The project activities eligible under this methodology aim to build and operate a new USPP, which are subject to following eligibility conditions set in para.9 of GCCM001:
(a) The project activities shall employ solar PV generation technologies and supply generated electricity to a national or a regional grid.
(e) The project activities shall not involve combined heat and power (co-generation) systems.
(f) The project activities shall not involve co-firing of fossil fuel of any kind.
(g) The project activities may have consumption of electricity (grid or on-site generation) for site offices.

The applicability conditions of TOOL01 include:

- 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 approve methodologies using the additionality tool.
- Once the additionality tool is included in an approved methodology, its application by project participants using this methodology is mandatory.

Since the project is using approved methodology instead of proposing a new one, this TOOL01 can be used directly.

The applicability conditions of TOOL07 include:

- 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).
- 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 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 the 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.
- 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.
- Under this tool, the value applied to the CO_2 emission factor of biofuels is zero.

The project activity is to use solar power to generate electricity and delivered to the public power grid (CCPG is a part of national grid, including Sichuan, Henan, Hubei, Hunan, Jiangxi and Chongqing provincial grids), and import electricity from the same grid in case of shutdown or emergency. The project electricity system is connected to Chinese national power grid, and no biofuel is used. Therefore, this tool is applied to the project activity to calculate OM, BM and CM of the CCPG.

The applicability conditions of TOOL24 include:

- This methodological tool is applicable to project activities that apply the methodological tool "Tool for the demonstration and assessment of additionality", the methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality", or baseline and monitoring methodologies that use the common practice test for the demonstration of additionality.
- In case the applied approved baseline and monitoring methodology defines approaches for the conduction of the common practice test that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.

Since the project activity applies "Tool for the demonstration and assessment of additionality", and the applied GCCM001 contains no different approaches for the conduction of the common practice test, this tool is applicable to the project.

The applicability conditions of TOOL27 include:

- This methodological tool is applicable to project activities that apply the methodological tool "Tool for the demonstration and assessment of additionality", the methodological tool "Combined tool

to identify the baseline scenario and demonstrate additionality", the guidelines "Non-binding best practice examples to demonstrate additionality for SSC project activities", or baseline and monitoring methodologies that use the investment analysis for the demonstration of additionality and/or the identification of the baseline scenario.

– In case the applied approved baseline and monitoring methodology contains requirements for the investment analysis that are different from those described in this methodological tool, the requirements contained in the methodology shall prevail.

Since the project activity applies "Tool for the demonstration and assessment of additionality", and the applied GCCM001 contains no different requirements for the investment analysis, this tool is applicable to the project.

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

>>

For the project, the spatial extent of the project boundary includes the proposed project and all power plants connected physically to the CCPG that the project is connected to. According to GCCM001 (V3.0), the greenhouse gases (GHG) and emission sources included in or excluded from the project boundary are shown in the following table:

Source		GHG	Included ?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO_2	Yes	The major source of emissions in the baseline.
		CH_4	No	Excluded for simplification. This emission source is assumed to be very small.
		N_2O	No	Excluded for simplification. This emission source is assumed to be very small.
Project Activity	This project activity	CO_2	No	According to the requirements of the methodology, the production and operation of solar PV projects do not produce significant greenhouse gas emissions. Thus, the project emissions can be ignored.
		CH_4	No	
		N_2O	No	

The project boundary is shown in the following figure.

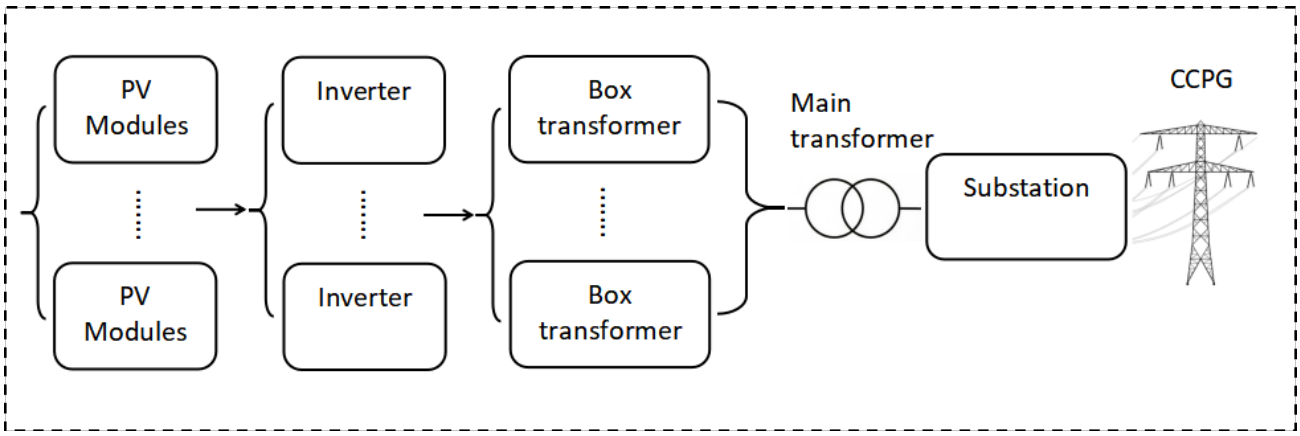

Figure 2. Project Boundary

B.4. Establishment and description of the baseline scenario

>>
The relevant national and/or sectoral policies, regulations and circumstances are taken into account for the implementation of the project activity.

Implementation of solar PV power generation project is not enforced by any laws and regulations in China. There are no enforced laws, regulations, court orders, environmental-mitigation agreements, permitting conditions of other legally binding mandates requiring its implementation. The project activity is a voluntary action.

The project is connected to the CCPG. As per the latest version of China Electric Power Yearbook, the CCPG is still dominated by fossil fuels fired power plant. The fossil fuels fired power plants generated over 50% of the total electricity provided by the CCPG. Despite the gradual increase in renewable energy sources in power sector, the CCPG is still a CO_2-intensive power grid.

According to the methodology GCCM001 (V3.0), if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline is the following: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

The generation from the proposed project is delivered to the CCPG, so the baseline scenario is the following: Generation to meet demand is supplied by the existing generation mix that makes up the CCPG, and any new future additions.

B.5. Demonstration of additionality

>>

As per GCC Project Standard, the GCC applies the following approach for demonstrating additionality, consisting of two components:

(a) A Legal Requirement Test; and
(b) An Additionality Test either based on a Positive List test or a project-specific additionality test.

The project is not enforced by law. The project passes the legal requirement test since there are no enforced laws, statues, regulations, court orders, environmental-mitigation agreements, permitting conditions of other legally-binding mandates requiring its implementation. Furthermore, as per para. 46 of Project Standard, voluntary commitments/agreements within a sector or by an entity do not constitute the legal requirement. An Additionality Test is further applied as follows.

Additionality of the project is demonstrated by using the approved CDM tool: Tool for the demonstration and assessment of additionality (Version 7.0.0).

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

Sub-step 1a: Define alternatives to the project activity
Alternatives available to the project participant or similar project developers that provide outputs or services comparable with the project activity are identified below:

Alternative (a) Implementing the proposed project, but not as a GCC project;
Alternative (b) Continuation of the current situation (no project activity or other alternatives undertaken).

Sub-step 1b: Consistency with mandatory laws and regulations
Both alternatives (a) and (b) are realistic and credible alternatives to the project which are consistent with mandatory laws and regulations.

Step 2. Investment analysis

Sub-step 2a: Determine appropriate analysis method
"Tool for the Demonstration and Assessment of Additionality" recommends three analysis methods: simple cost analysis (Option I), investment comparison analysis (Option II) or benchmark analysis (Option III).

Other than income from the sale of ACCs, the project generates revenue from the sale of electricity. Therefore, the simple cost analysis (Option I) cannot be used. The investment comparison analysis (Option II) is not applicable either because one of the remaining alternatives, "Generation to meet demand is supplied by the existing generation mix that makes up CCPG, and any new future additions", cannot be considered as an isolated investment. Therefore, the benchmark analysis (Option III) is selected.

Sub-step 2b: Option III. Apply benchmark analysis
According to the "Economical assessment and parameters for construction project, 3rd edition" jointly published by National Development and Reform Commission and Ministry of Housing and

Urban-Rural Development of China, a project will be financially acceptable when the project Internal Return Rate is higher than the sectoral benchmark IRR, which is 8% for electric power industry.

Sub-step 2c: Calculation and comparison of financial indicators

The following parameters and values in Table 2 below are applied for calculation and comparison of financial indicator, IRR.

Table 2: Parameters to determine the project IRR

Items	Unit	Value
Installed capacity	MW	30
Annual electricity delivered to the grid	MWh	41,568
Investment	Million CNY	277.66
Electricity tariff (excl. VAT)	CNY/kWh	0.812 (first 20 years) 0.2137 (last 5 years)
Value Added Tax (VAT)	%	17
Income tax	%	25
City construction and maintenance tax	%	5
Educational surcharge	%	5
Project operational lifetime	year	25
Annual operational and maintenance costs (O&M costs)	Million CNY	5.99
Depreciation year	year	18
Annual depreciation rate	%	5.5

Data source: Feasibility Study Report, national and local regulations.

The input values of all financial analysis are derived from Feasibility Study Report (FSR) of the project, which was officially approved by the Development and Reform Commission of Sichuan Province.

The calculated IRR value of the project with and without carbon credits are compared. Please see below table.

Table 3: Financial analysis results of the project

	IRR (after tax)
Without carbon credits revenue	6.90
With carbon credits revenue	8.03

Sub-step 2d: Sensitivity analysis

The sensitivity analysis is to show whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.

According to CDM TOOL27 Investment analysis, 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. For this project, the total static investment constitutes more than

20% of the total project costs; the product of electricity tariff and annual electricity delivered to the grid constitute more than 20% of the total revenue of the project; and the total O&M throughout the project lifetime also accounts for more than 20% of the project cost.

Therefore, considering the reasonable variations in the critical assumptions, the sensitivity analysis is made regarding four key factors of investment, O&M costs, electricity delivered to the grid and electricity tariff, as shown in Table 4.

Table 4: Sensitivity Analysis

	−10%	0	+10%
Investment	8.24	6.90	5.77
O&M costs	7.16	6.90	6.63
Electricity delivered to the grid	5.46	6.90	8.27
Electricity tariff	5.43	6.90	8.30

The actual data of the project shows that neither decrease in investment and O&M costs nor increase in electricity delivered to the grid and tariff occurred, therefore, the project undertaken without carbon credit revenue is not financially attractive and the ACC revenue will improve the financial indicators of the project.

Step 3. Barrier analysis

The proposed project is additional in terms of financial attractiveness and is applicable to Step 2. Therefore, Step 3 is not developed.

Step 4. Common practice analysis

As the project applies power generation based on renewable energy which is one of the measure(s) listed in the definition section above, proceed to Sub-step 4a.

Sub-step 4a: The proposed project activity(ies) applies measure(s) that are listed in the definitions section above
Common practice analysis is carried out as per CDM TOOL24 Common Practice.

Sub-step 4a-1: calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity
The installed capacity of the project is 30MW, so the applicable capacity range as +/-50% of the total design capacity is 15MW~45 MW.

Sub-step 4a-2: identify similar projects which fulfill all of the following conditions:

a. The projects are located in the applicable geographical area.

Considering the geographical difference (e.g. access to natural resources, climate, terrain) as well as social-economic differences (e.g. regulatory framework, infrastructure, economic development levels, economic structure, access to technology, access to financing, tariff levels) between the provinces in China, see below, Sichuan province instead of entire China is selected for analysis.

According to “National Standard of the People’s Republic of China: Solar Resource Measurement - Global Radiation”, solar energy resources vary greatly at different latitudes, especially in countries with large latitudes.

According to “Notice of the National Development and Reform Commission on Improving the Benchmark Electricity Price Policy for Onshore Wind and Photovoltaic Power Generation”, there are also large differences in the photovoltaic on-grid electricity price in different regions.

According to the Statistical Yearbook, the level of economic development in different regions is also quite different.

b. The projects apply the same measure as the proposed project activity.

The applicable measure is power generation based on renewable energy, same as the project.

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 project activity.

The energy source is the renewable solar energy, same as the project.

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.

The applicable project is to produce electricity power, same as the project.

e. The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1.

As defined in Step 4a-1, the applicable capacity range is from 15MW to 45MW.

f. The projects started commercial operation before the PSF is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity.

For common practice analysis, the start date should be as per CDM terminology. According to the “Glossary CDM terms”, start date is defined that “for the CDM project activity, where a contract is signed for such expenditures, it is the date on which the contract is signed. In other cases, it is the date on which such expenditures are incurred. If the CDM project activity or CPA involves more than one of such contracts or incurred expenditures, it is the first of the respective dates.” Therefore, the start date of project is the signing date of the construction contract, which the earliest contract signed for the project.

The earliest contract signed date for the project is 12/11/2015. Thus, for the common practice analysis of the project, only projects which started commercial operation before 12/11/2015 are considered.

Therefore, the solar power projects with the installed capacity of 15MW~45MW starting commercial operation before 12/11/2015 in Sichuan province are chosen for this analysis.

According to the publicly available information, there is no solar power projects which are not applied or applying CDM or other carbon revenues within this range identified.

Sub-step 4a-3: within the projects identified in Step 2, identify those that are neither registered project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all}.

According to sub-step 4a-2, therefore, $N_{all} = 0$.

Sub-step 4a-4: 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}.

Similar as above, $N_{diff}=0$.

Sub-step 4a-5: 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.

Since $N_{all}=0$ and $N_{diff}=0$, F does not exist, and the difference between N_{all} and N_{diff} is less than 3, therefore the project is NOT a common practice within a sector in the applicable geographical area.

B.6. Estimation of emission reductions

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B.6.1. Explanation of methodological choices

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GCCM001 and 2019 Baseline Emission Factors for Regional Power Grids in China are applied as the following steps, and the data are from China Electric Power Yearbook, Public Organization Energy Consumption Statistic System, Electric Power Industry Statistic Data Collection and China Energy Statistical Yearbook.

Baseline Emissions

Baseline emissions include only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

Where:

BE_y = baseline emissions in year y (tCO_2e).
$EG_{PJ,y}$ = electricity supplied by the project activity to the grid (MWh).
$EF_{grid,CM,y}$ = combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the Tool to calculated the emission factor for an electricity system (tCO_2e/MWh).

The project is a greenfield solar power plant, then:

$$EG_{PJ,y} = EG_{facility,y} \quad (2)$$

Where:

$EG_{facility,y}$ = quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr).

According to Tool to calculate the emission factor for an electricity system (V7.0), six steps are applied to calculate the baseline emission factor.
Step 1: Identify the relevant electricity systems;
Step 2: Choose whether to include off-grid power plants in the project electricity system (optional);
Step 3: Select a method to determine the operating margin (OM);
Step 4: Calculate the operating margin emission factor according to the selected method ($EF_{grid,OM,y}$);
Step 5: Calculate the build margin (BM) emission factor ($EF_{grid,BM,y}$);
Step 6: Calculate the combined margin (CM) emission factor ($EF_{grid,CM,y}$).

As China DNA has published the calculation method for emission factor of grid, the published data and method have been applied for this project to calculate operating margin (OM) and build margin, as following steps.

Step 1: Identify the relevant electricity systems

The project is connected to the CCPG, which covers Henan province, Hubei province, Hunan province, Jiangxi province, Sichuan province and Chongqing city. Therefore, the CCPG is identified as the relevant electric power system.

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

The **Option I** (only grid power plants are included in the calculation) is chosen.

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

Calculation of Operating Margin should be based on one of the four following methods according to the tool:

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

As the low-cost/must run resources constituted less than 50% of total power generation of the CCPG in recent five years. The method (a) Simple OM is selected and the following data vintage is chosen to calculate the emission factor.

Under method (a), ex ante option is selected, the emission factor is determined once at the validation stage, thus no monitoring and recalculate 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.

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_2 emissions per unit net electricity generation (tCO_2e/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants. It may be calculated:

Option A: Based on data on the net electricity generation and a CO_2 emission factor of each power plant / 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.

The project adopts Option B due to,

The necessary data for option A is not available;
Only nuclear and renewable power generation is considered as low-cost/must-run power sources; the quantity of electricity supplied to the grid by above sources is known; and
Off-grid power plants are not included in the calculation.

Where Option B is used, the simple OM emission factor is calculated as follows:

$$EF_{grid,OMsimple,y} = \frac{\sum_i (FC_{i,y} \times NCV_{i,y} \times EF_{CO2i,y})}{EG_y} \quad (3)$$

Where:

$EF_{grid,OMsimple,y}$	= Simple operating margin CO_2 emission factor in year *y* (tCO_2/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 fuel i in year *y* (GJ/ mass or volume unit);
$EF_{CO2,i,y}$	= CO_2 emission factor of fossil fuel type i in year *y* (tCO_2/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.

Based on the most recent three years (2015-2017) where the data are the latest and available at

the time of this PSF submission, the calculation result of $EF_{grid,OM,y}$ is 0.8587 tCO_2e/MWh. The data is published by Ministry of Ecology and Environment of the People's Republic of China.

Step 5: Calculate the build margin (BM) emission factor

As per Section 6.5 of TOOL07 (Version 7.0), in terms of vintage of data, project participants can choose between one of the following two options:

(a) Option 1 – For the first crediting period, calculate the build margin emission factor *ex-ante* based on the most recent information available on units already built for sample group m at the time of PSF submission to the GCC verifier 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 crediting period renewal request to the GCC verifier. 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.

(b) Option 2 – For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emission factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

In line with 2019 Baseline Emission Factors for Regional Power Grids in China published by DNA, Option 1 is chosen for the project; the BM 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 this project description submission.

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 GCC project activities, that started to supply electricity to the grid most recently ($SET_{5\text{-units}}$) and determine their annual electricity generation ($AEG_{SET\text{-}5\text{-}units}$, in MWh);

(b) Determine the annual electricity generation of the proposed project electricity system, excluding power units registered as GCC project activities (AEG_{total}, in MWh). Identify the set of power units, excluding power units registered as GCC 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 $SET_{5\text{-units}}$ and $SET_{\geq 20\%}$ select the set of power units that comprises the larger annual electricity generation (SET_{sample});

Identify the date when the power units in SET_{sample} started to supply electricity to the grid. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then use SET_{sample} to calculate the build margin. In this case ignore Steps (d), (e) and (f).

Otherwise:

(d) Exclude from SET_{sample} the power units which started to supply electricity to the grid more than 10 years ago. Include in that set the power units registered as GCC project activities, starting with power units that started to supply electricity to the grid most recently, until the electricity generation of the net set comprises 20% of the annual electricity generation of the proposed project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) to the extent is possible. Determine for the resulting set ($SET_{sample-GCC}$) the annual electricity generation ($AEG_{SET-sample-GCC}$, in MWh); If the annual electricity generation of that set comprises at least 20% of the annual electricity generation of the proposed project electricity system (i.e. $AEG_{SET-sample-GCC \geq 20\%} * AEG_{total}$), then use the sample group $SET_{sample-GCC}$ to calculate the build margin Ignore steps (e) and (f).

Otherwise:

(e) Include in the sample group $SET_{sample-GCC}$ the power units that started to supply electricity to the grid more than 10 years ago until the electricity generation of the new set comprises 20% of the annual electricity generation of the proposed project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation);

(f) The sample group of power units m used to calculate the build margin is the resulting set ($SET_{sample-GCC \geq 10yrs}$).

The BM emissions factor is the generation-weighted average emission factor (tCO_2/MWh) of all power units m during the most recent year y for which electricity generation data is available, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (4)$$

Where:

$EF_{grid,BM,y}$	= Build margin CO_2 emission factor of the CCPG in year *y* (tCO_2/MWh).
$EG_{m,y}$	= Net quantity of electricity generated and delivered to the grid by power unit m in year *y* (MWh).
$FE_{EL,m,y}$	= CO_2 emission factor of power unit m in year *y* (tCO_2/MWh).
m	= Power units included in the build margin.
y	= The most recent year for which power generation data is available.

As it is difficult to obtain the detailed data on the power generation, fuel consumption and thermal efficiency of each newly built power unit from public documents, a deviation of TOOL07 (Version 7.0) is adopted following the clarifications given by the CDM EB concerning the BM emission factor

calculation:

(1) The CDM EB suggested using the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy, for each fuel type in estimating the fuel consumption to estimate the build margin.
(2) The EB agreed the use of capacity additions during last 1-3 years for estimating the build margin emission factor for grid electricity.
(3) The EB also agreed to use of weights estimated using installed capacity in place of annual electricity generation.

The newly built power plants in the past few years are bundled into “grouped new power plant” according to their construction year, their province and their fuel type. The annual net electricity generation in the year y of each “grouped new power plant” $EG_{m,y}$ is estimated according to their total capacity and the average utilization hours, as the following equation:

$$EG_{m,y} = CAP_m \times H_{m,y} \quad (5)$$

Where:
$EG_{m,y}$ = Annual net electricity generation the unit m in year y (MWh)
CAP_m = Installed capacity of the unit m (MW)
$H_{m,y}$ = Utilization hour of the unit m in the year y (h), determined according to the average utilization hour of the same type of unit in the same province
y = The most recent year for which the generation data is available. For the calculation of BM in 2019, y =2017
m = Grouped new power plant

Since the newly built power plants in the same province (A), in the same year (t) and using the same fuel type (k) are grouped into “a grouped new power plant”, CAP_m represents the total installed capacity of fuel type k power plants located in the provinces A and in the year t:

$$CAP_m = CAP_{A,t,k} \quad (6)$$

CAP_m = Installed capacity of the unit m (MW), with m representing the specified combination of A, t, and k
$CAP_{A,t,k}$ = Total installed capacity of fuel type k power plants located in the province A and in the year t
A = Provinces covered by the CCPG, namely, Henan province, Hubei province, Hunan province, Jiangxi province, Sichuan province and Chongqing city.
t = Years related to the grouped new power plants, for the 2019 calculation, t represents 2017, 2016, 2015…. until the aggregated electricity generation of the grouped new plants reaches 20% of the total electricity generation of the CCPG
k = Fuel type of the grouped new power plants, including solar, thermal (coal, gas, oil, waste incineration, other thermal), nuclear, wind, solar and others

The emission factors of each fuel type $EF_{EL,m,y}$ are determined according to the Option A2 in the TOOL07, as the following equation:

$$EF_{EL,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{m,y}} \quad (7)$$

Where:

$EF_{EL,m,y}$ = CO_2 emission factor of power unit m in year y (tCO_2/MWh)
$EF_{CO2,m,i,y}$ = Average CO_2 emission factor of fuel type i used in power unit m in year y (tCO_2/GJ)
$\eta_{m,y}$ = Average net energy conversion efficiency of power unit m in year y (ratio)
m = All power units serving the grid in year y except low-cost/must-run power units
3.6 = Conversion factor (GJ/MWh)

Among the fuel types, the emission factors of solar, nuclear, wind, solar, other thermal and others are 0. Concerning the emission factors of coal, gas, oil and waste incineration, equation takes the following form due to conservativeness:

$$EF_{best,m,y} = \frac{EF_{CO2,m,i,y} \times 3.6}{\eta_{best,y}} \quad (8)$$

Where:

$EF_{best,m,y}$ = Emission factor of power unit m with the best technology commercially available in year y (tCO_2/MWh)
$\eta_{best,y}$ = Power generation efficiency of the best technology commercially available in year y
m = Power units serving the grid with coal, gas, oil or waste incineration in year y

According to the latest and available data at the time of this PSF submission, $EF_{grid,BM,y}$ is calculated to be 0.2854 tCO_2/MWh. The data is published by Ministry of Ecology and Environment of the People's Republic of China.

Step 6: Calculate the combined margin (CM) emission factor

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

(a) Weighted average CM; or
(b) Simplified CM.

The weighted average CM method (option a) should be used as the preferred option.

The simplified CM method (option b) can only be used if:

a) The project activity is located in: (i) a Least Developed Country (LDC); or in (ii) a country with less than 10 registered CDM projects at the starting date of validation; or (iii) a Small Island Developing States (SIDS); and
b) The data requirements for the application of step 5 above cannot be met.

This PSF choose option A.

The combined margin emission factor is calculated as follows:

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

Where:

$EF_{grid,OM,y}$	= operating margin emission factor of the CCPG (tCO_2e/MWh)
$EF_{grid,BM,y}$	= build margin CO_2 emission factor of the CCPG (tCO_2e/MWh)
w_{OM}	= the weighting of operating margin emission factor (%)
w_{BM}	= the weighting of build margin emission factor (%)

According to the tool, as a solar power generation project, w_{OM} =0.75 and w_{BM}=0.25 for the full 10-year crediting period.

$EF_{grid,CM,y}$ = 0.8587×0.75 + 0.2854×0.25 = 0.7154 tCO_2e/MWh

Project Emissions

There is no diesel power plant on the project site and the baseline emission has been considered the imported power from the grid. According to GCCM001, there are no other expected project emissions for a solar power project.

Therefore, PE_y=0

Leakage

According to GCCM001, no leakage emissions are considered.

Net GHG Emission Reductions

Net GHG emission reductions are calculated as follows:

$$ER_y = BE_y - LE_y - PE_y \quad (12)$$

Where:

ER_y	= Emission reductions in year y (tCO_2e)
BE_y	= Baseline emissions in year y (tCO_2e)
PE_y	= Project emissions in year y (tCO_2e)
LE_y	= Leakage emissions in year y (tCO_2e)

Since PE_y=0 and Leakage is not considered, ER_y=BE_y.

B.6.2. Data and parameters fixed *ex ante*

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Data / Parameter Table 1.

Data / Parameter:	$EF_{grid,y}$ ($EF_{grid,CM,y}$)
Methodology reference	GCCM001
Data unit	tCO_2/MWh
Description	Combined margin emission factor of the CCPG
Measured/calculated /default	Calculated
Data source	2019 Baseline Emission Factors for Regional Power Grids in China, published by China DNA.
Value(s) of monitored parameter	0.7154
Measurement/ Monitoring equipment (if applicable)	-
Calculation method (if applicable)	Calculated as per TOOL07: Tool to calculate the emission factor for an electricity system
QA/QC procedures	Official data from DNA
Purpose of data	Baseline emission calculation
Additional comments	The detailed calculation process of $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ can be found at the following link: http://www.mee.gov.cn/ywgz/ydqhbh/wsqtkz/202012/t20201229_815386.shtml

B.6.3. Ex-ante calculation of emission reductions

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The project is expected to produce and deliver 41,568MWh of electricity in the 10-year crediting period to the CCPG.

The Emission Reductions for the project is calculated below:

$ER_y = 41,568 \times 0.7154 = 29,737tCO_2e/year$

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

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Year	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage (tCO_2e)	Emission reductions (tCO_2e)
14/03/2016 - 13/03/2017	29,737	0	0	29,737
14/03/2017 - 13/03/2018	29,737	0	0	29,737

14/03/2018 - 13/03/2019	29,737	0	0	29,737
14/03/2019 - 13/03/2020	29,737	0	0	29,737
14/03/2020 - 13/03/2021	29,737	0	0	29,737
14/03/2021 - 13/03/2022	29,737	0	0	29,737
14/03/2022 - 13/03/2023	29,737	0	0	29,737
14/03/2023 - 13/03/2024	29,737	0	0	29,737
14/03/2024 - 13/03/2025	29,737	0	0	29,737
14/03/2025 - 13/03/2026	29,737	0	0	29,737
Total	**297,370**	**0**	**0**	**297,370**
Total number of crediting years	**10**			
Annual average over the crediting period	**29,737**	**0**	**0**	**29,737**

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.

Data / Parameter:	**$EG_{facility,y}$**
Methodology reference	As per TOOL05 (Version 3.0)
Data unit	MWh
Description	Quantity of electricity generated and supplied by the project power plant to the grid in year y
Measured/calculated /default	Monitored
Data source	Electricity meters
Value(s) of monitored parameter applied with basis	41,568

Measurement/ Monitoring equipment	<table><tr><td colspan="2"></td></tr><tr><td>Type of meter(s)</td><td>Electricity meter</td></tr><tr><td>Location of meter(s)</td><td>Xiadagou substation</td></tr><tr><td>Accuracy of meter(s)</td><td>0.2S</td></tr></table>
Frequency of Measuring/reading	Measure continuously
Recording frequency	Record monthly
Calculation method (if applicable)	Calculated based on the electricity delivered to the grid by the project ($EG_{out,y}$) and the electricity consumed by the project which is imported from the grid ($EG_{in,y}$) $EG_{facility,y} = EG_{out,y} - EG_{in,y}$
QA/QC procedures	The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier or requirements set by the grid operators. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier and/or as per the requirements set by the grid operators or national requirements.
Purpose of data	Calculation of baseline emissions
Additional comments	-

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

Data / Parameter:	**Number of people employed by the project**
Purpose:	This parameter is monitored to demonstrate the project's contribution to S+ and SDG labels.
Describe the related environment /social/ SDG risk or SDG impact as a function of likelihood of occurrence and severity of impact.	Not applicable since the project will bring benefits to local communities.
Describe the parameters to be monitored to demonstrate compliance with requirements to demonstrate "harmless" condition or demonstrate Impact on SDG	The number of employees during the project operation is to be monitored. The implementation of the project will not only produce the renewable energy for local communities but also create job opportunities for local residents, which has a positive effect in terms of social safeguard and SDG.

Remarks	During the project operation, about 20 long-term job positions are to be created. In addition, the project also creates short-term job opportunities for local communities during the construction period.

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

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

B.7.3. Sampling plan

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N/A

B.7.4. Other elements of the monitoring plan

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The methodology GCCM001 is used for developing the monitoring plan. This monitoring plan is established to ensure the completion, coherence and accuracy of monitoring and calculation of the emission reductions from the project during the entire crediting period.

Management organization

To ensure all data are reliable and transparent, the project owner has established Quality Assurance and Quality Control (QA&QC) measures to effectively control and manage data reading, recording, auditing as well as archiving data and all relevant documents. This monitoring plan is carried out by a team, designated by the project owner, which consists of a team leader, an assistant and operators who are responsible for recording the metering readings (Figure 3).

The team leader has the overall responsibility for the monitoring and verification process, training and managing all team members, and acts as the focal point for the project related to the verifications.

The assistant helps the team leader to supervise the operation of the project, including data monitoring, negotiations with the grid company, and to collect the electricity settlement receipts.

The operators are responsible for inspecting and maintaining the equipment, measuring and recording relevant readings, collecting, checking, archiving and managing data, and making summary according to the project’s requirements in a regular basis, and so on.

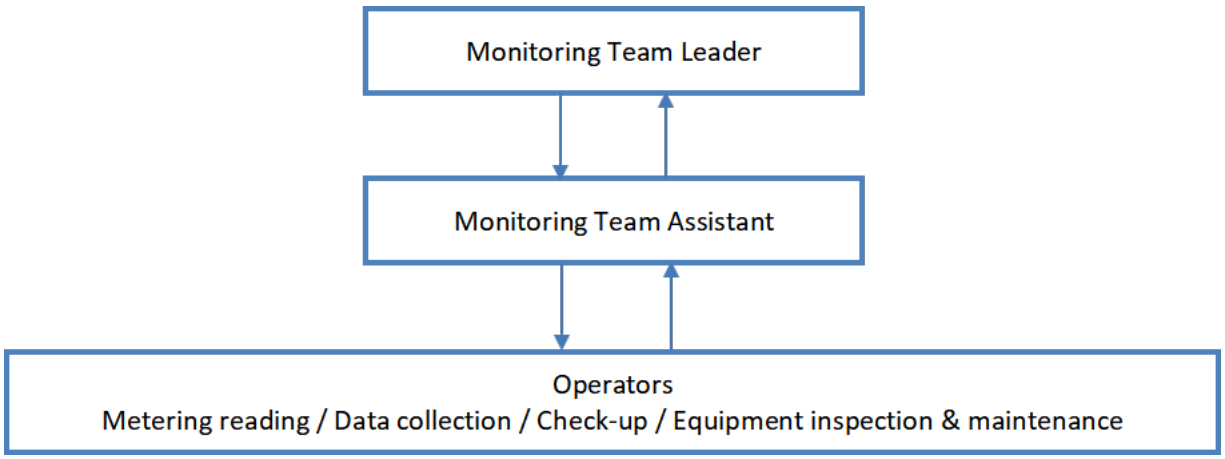

Figure 3: Organization Structure of Monitoring Team

Installation of Metering Devices

A revenue meter monitoring the electricity delivered to the grid and electricity imported from the grid with bidirectional function of reading data is installed at the substation. Another bidirectional meter is installed at the project site as a backup. The meters are installed in accordance with the national standard. The accuracy of the meters is 0.2S.

Quality assurance and quality control (QA/QC)

The metering equipment is subject to periodical calibration carried out by qualified entities or the grid company in line with the national standards.

All data collected as part of monitoring is archived electronically. All information should be stored properly with backups. All data including records is kept until 2 years after the end of the crediting period.

Section C. Start date, crediting period type and duration

C.1. Start date of the Project Activity

>>

14/03/2016, the date when the project started operation.

C.2. Expected operational lifetime of the Project Activity

>>

25 years

C.3. Crediting period of the Project Activity

>>

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

>>

The start date of the crediting period is 14/03/2016 when the project started operation.

The end date is 13/03/2026 after 10 years of operation.

C.3.2. Duration of crediting period

>>
10 years and 0 month (14/03/2016 – 13/03/2026)

Section D. Environmental impacts

D.1. Analysis of environmental impacts

>>
The potential environmental impacts during the operation of the project are analyzed below.

Air pollution
This project is a clean energy utilization project, and no waste gas is generated during the operation period.

Water pollution
The wastewater during the operation period mainly comes from the solar panel cleaning wastewater and small quantity of sewage from the operators. Wastewater is treated in the underground wastewater treatment facility then reused for irrigation of the plants at the project site, without discharging to the surrounding environment.

Noise
The noise during the operation period comes from the equipment such as the booster, inverter, etc. By housing the equipment and soundproofed, the noise can be lowered down under the limit set in the national Emission standard for industrial enterprises noise at boundary.

Solid waste
The main solid waste during operation is waste generated by operating staff, which is collected and disposed of at waste bins, and finally be disposed in local landfill.

Ecological environment
Greenbelt is constructed at the project site, which is capable to prevent and control water and soil erosion, and improve local ecological environment and landscaping.

By applying the above-mentioned protection measures, the negative impact on local environment by the project will be mitigated to satisfy the requirements of laws and regulations during the

construction and operation periods. In addition, the project will bring benefits by replacing fossil fuel consumption and reducing GHG emissions.

D.2. Environmental impact assessment and management action plans

>>
The Environmental Impact Assessment (EIA) of the project was approved by Environment Protection Bureau of Sichuan Province in November 2014.

The EIA approval states that all environmental protection measures recommended in the EIA report will be adopted by the project to ensure that all environmental impacts and pollutants emissions comply with national standards and regulations.

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		GCC Project Verifier's Conclusion (To be included in Project Verification Report only)
		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***	**3rd Party Audit**
				Not Applicable	**Harmless**	**Harmful**	**Operational Controls**	**Program of Risk Management Actions**	**Monitoring parameter and frequency of monitoring**	**Ex- Ante scoring of the environmental impact (as per scoring matrix Appendix-02)**	**Ex- Ante description and justification/explanation of the scoring of the environmental impact**	**Verification Process**
Environmental Aspects on the identified categories [14] ***indicated below.***	*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* ***Not Applicable***	*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*	*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*	*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 '****Harmful*** *at least to a level that is in compliance with applicable legal/regulatory 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* ***Harmful****.*	*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.*	*Describe how the GCC Verifier has assessed that the impact of the Project Activity against the particular aspect and in case of "harmful impacts" how has the project adopted Risk Mitigation Action Plans to mitigate the risks of negative environmental impacts to levels that are unlikely to cause any harm as well as the net positive impacts of the project with respect to the most likely baseline alternative.* .

[14] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

					operating principles, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as ***Harmless*** */If the project has a positive impact on the environment mark it as "harmless" as well.*	*(may be un-safe) and shall be indicated as* ***Harmful***						
Reference to paragraphs of Environmental and Social Safeguards Standard		*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*		*Paragraph 24 and Paragraph 26 (a) (i)*
Environment - *Air*	*SO_x emissions (EA01)*											
	NO_x emissions (EA02)											
	CO_2 emissions (EA03)	The project reduces CO_2 emissions by generating electricity from solar power which would have been otherwise generated from the fossil fuel-based power plants in the absence of project activity.	N/A		This impact is positive and this KPI can be monitored, thus it will be deemed as harmless.				The electricity generated will be monitored and CO_2 emission reductions will be calculated accordingly.	+1	The project is expected to result in lower CO_2 emission than the baseline throughout the crediting period.	

	CO emissions (EA04)											
	Suspended particulate matter (SPM) emissions (EA05)											
	Fly ash generation (EA06)											
	Non-Methane Volatile Organic Compounds (NMVOCs) (EA07)											
	Odor (EA08)											
	Noise Pollution (EA09)	The equipment may cause noise pollution in operation. The low noise equipment have been chosen for the project.	<Emission standard for industrial enterprises noise at boundary> (GB12348-2008) Class 2.		The noise by the project is expected to be lower than legal limits, hence it is negligible.				The maximum noise would be 40.7dB(A) within the project boundary during the operation which is lower the regulatory limits of 60dB(A) in the daytime and 50dB(A) in the nighttime. Therefore, the noise would be monitored when it beyond the limits in case the equipment is malfunctioning.	0	The noise at the project boundary meets the national standard. Furthermore, there is no residents settlement within 500m of the project boundary, so the noise pollution has no impact on local surroundings.	
	Others (EA10)											
	Add more rows if required and											

	corresponding notation with EA as prefix)											
Environment - *Land*	*Solid waste Pollution from Plastics (EL-01)*											
	Solid waste Pollution from Hazardous wastes (EL02)											
	Solid waste Pollution from Bio-medical wastes (EL03)											
	Solid waste Pollution from E-wastes (EL04)											
	Solid waste Pollution from Batteries (EL05)											
	Solid waste Pollution from end-of-life products/	The wasted PV modules or electric equipment are generated during the operation	N/A		The wasted PV module or electric equipme				The repair and recycle of the wasted PV module or electric equipment will be recorded in the operating log.	+1	The wasted PV module or electric equipment will be sent to the producer to	

	equipment (EL06)				nt will be sent to the producer to repair or recycle. Hence the project is deemed harmless .						repair or recycle accordingly.	
	Soil Pollution from Chemicals (including Pesticides, heavy metals, lead, mercury) (EL07)											
	land use change (change from cropland /forest land to project land) (EL08)											
	Others (EL09)											
	Add more rows if required											
Environment - *Water*	*Reliability/ accessibility of water supply (EW01)*											

	Water Consumption from ground and other sources (EW02)											
	Generation of wastewater (EW03)	The project generates wastewater mainly due to cleaning solar panels and from sewage of operators . Wastewater is properly treated according to national regulations.	Class 2 of <Integrated Wastewater Discharge Standard> (GB8978-1996)		The sewage produced by operators and panel cleaning wastewater will be treated in wastewater treatment facility on site. Then it will be used for green irrigation. Hence it is deemed negligible.				The wastewater treated will be monitored by the flow meters to the on-site wastewater treatment facility.	+1	The wastewater will be treated in the wastewater treatment facility on site and then reused for green irrigation.	
	Wastewater discharge without/with insufficient treatment (EW04)											
	Pollution of Surface, Ground and/or Bodies of water (EW05)											

	Discharge of harmful chemicals like marine pollutants / toxic waste (EW06)											
	Others (EW07)											
	Add more rows if required											
Environment – *Natural Resources*	*Conserving mineral resources (ENR01)*											
	Protecting/ enhancing plant life (ENR02)											
	Protecting/ enhancing species diversity (ENR03)											
	Protecting/ enhancing forests (ENR04)											
	Protecting/ enhancing other depletable natural resources (ENR05)											
	Conserving energy (ENR06)											
	Replacing fossil fuels	The project replaces fossil fuels with		The project					The electricity generated and	+1	The project is expected to	

	with renewable sources of energy (ENR07)	renewable sources of energy since it is a solar power station.		brings benefits to the environment by replacing the fossil fuels with the renewable energy sources.					delivered to the grid by the project will be monitored by the electric meters. The monthly settlement notes will be available for the double check of the data.		supply an average of 41568MWh renewable electricity to the CCPG annually in the crediting period.	
	Replacing ODS with non-ODS refrigerants (ENR08)											
	Others (ENR09)											
	Add more rows if required											
Net Score:			**4**									
Project Owner's Conclusion in PSF:			The Project Owner confirms that the Project Activity will not cause any net harm to Environment.									
GCC Project Verifier's Opinion:			The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to the environment...									

E.2. Social Safeguards

>>

Impact of Project Activity on		Information on Impacts, Do-No-Harm Risk Assessment and Establishing Safeguards							Project Owner's Conclusion		GCC project Verifier's Conclusion (To be included in Project Verification Report only)
		Description of Impact (*positive or negative*)	**Legal requirement /Limit, Corporate policies / Industry best practice**	**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**	**3rd Party Audit**
				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**	**Verification Process** **Will the Project Activity cause any harm?**
Social Aspects on the identified	*Indicators for social impacts*	*Describe and identify actual and anticipated impacts on society and stakeholders, both positive or negative, from all sources 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*	*Describe the applicable national regulatory requirements / legal limits or organizational policies or industry best practices related to the identified risks of social impacts*	*If no social impacts are anticipated, then the Project Activity is unlikely to cause any harm (is safe) and shall be indicated as* ***Not Applicable***	*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)*	*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*	*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* ***Harmful****.*	*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. Monitoring parameters can be quantitative or qualitative in nature along with the data source*	*-1* *0* *+1*	*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*	*Describe how the GCC Verifier has assessed that the impact of Project Activity on social aspects (based on monitored parameters, quantitative or qualitative) and in case of "harmful aspects how has the project owner adopted Risk Mitigation Action / management actions plans and policies to mitigate the risks of*

categories[15] indicated below.					*and shall be indicated as **Harmless**), project having positive impact on society. To the BAU / baseline scenario must also mark their aspect as **"harmless"***	*indicated as **Harmful***					*negative social impacts to levels that are unlikely to cause any harm.* *Also describe the positive impacts of the project on the society as compared to the baseline alternative or BAU scenario.*
Reference to paragraphs of Environmental and Social Safeguards Standard		*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*		*Paragraph 24 and Paragraph 26 (a) (ii)*
Social - *Jobs*	*Long-term jobs (> 10 year) created/ lost (SJ01)*	The project creates long-term jobs during operation.			The social impact of the project is expected to increase employment; This impact is positive.			It will be monitored through employment records. It will be monitored annually.	+1	The social impact of the project is expected to increase employment, which can be confirmed by records of payrolls etc.	
	New short-term jobs (< 1 year) created/ lost (SJ02)	The project creates short-term jobs during construction period.			The social impact of the project is expected to increase employment, which is positive. Hence it is harmless.			Construction of the project was implemented by a third company. Hence the short-term jobs were not recorded by the project owner but by the construction contractor.	+1	The project owner has no access to the employment records done by the construction contractor.	

[15] sourced from the CDM SD Tool and the sample reports are available (https://www4.unfccc.int/sites/sdcmicrosite/Pages/SD-Reports.aspx)

	Sources of income generation increased / reduced (SJ03)										
	Avoiding discrimination when hiring people from different race, gender, ethnics, religion, marginalized groups, people with disabilities (SJ04) *(Human rights)*										
Social - *Health & Safety*	*Disease prevention (SHS01)*										
	Occupational health hazards (SHS02)										
	Reducing / increasing accidents /Incidents/fatality (SHS03)										

	Reducing / increasing crime (SHS04)										
	Reducing / increasing food wastage (SHS05)										
	Reducing / increasing indoor air pollution (SHS06)										
	Efficiency of health services (SHS07)										
	Sanitation and waste management (SHS08)										
	Other health and safety issues (SHS09)										
	Add more rows if required										
Social - *Education*	*specialized training / education to local*										

	personnel (SE01)										
	Educational services improved or not (SE02)										
	Project-related knowledge dissemination effective or not (SE03)										
	Other educational issues (SE03)										
	Add more rows if required (SE04)										
Social - *Welfare*	*Improving/ deteriorating working conditions (SW01)*										
	Community and rural welfare (indigenous people and communities) *(SW02)*										

	Poverty alleviation (more people above poverty level) (SW03)										
	Improving / deteriorating wealth distribution/ generation of income and assets (SW04)										
	Increased or / deteriorating municipal revenues (SW05)										
	Women's empowerment (SW06) *(Human rights)*										
	Reduced / increased traffic congestion (SW07)										
	Exploitation of Child labour										

	(Human rights) *(SW08)*										
	Minimum wage protection *(Human rights) (SW09)*										
	Abuse at workplace. (With specific reference to women and people with special disabilities / challenges) *(Human rights) (SW10)*										
	Other social welfare issues (SW11)										
	Avoidance of human trafficking and forced labour *(Human rights)* *(SW12)*										

	Avoidance of forced eviction and/or partial physical or economic displacement of IPLCs *(Human rights)* *(CW13)*										
	Provisions of resettlement and human settlement displacement *(Human rights)* *(CW14)*										
	Add more rows if required										
Net Score:		2									
Project Owner's Conclusion in PSF:		The Project Owner confirms that the Project Activity will not cause any net harm to society.									
GCC Project Verifier's Opinion:		The GCC Verifier certifies that the Project Activity [is not likely to cause any] or [is likely to cause] net harm to society.									

Section F. United Nations Sustainable Development Goals (SDG)

>>

UN-level SDGs	UN-level Target	Declared Country-level SDG	Defining Project-level SDGs				GCC Project Verifier's Conclusion (To be included in Project Verification Report only)	
			Project-level SDGs	Project-level Targets/Actions	Contribution of Project-level Actions to SDG Targets	Monitoring	Verification Process	Are Goal/ Targets Likely to be Achieved?
Describe UN SDG targets and indicators *See: https://unstats.un.org/sdgs/indicators/indicators-list/*	*Describe the UN-level target(s) and corresponding indicator no(s)*	*Has the host country declared the SDG to be a national priority? Indicate Yes or No*	*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 for guidance.*	*Define project-level targets/actions in line with nee project level indicators chosen. Define the target date by which the project Activity is expected to achieve the project-level SDG target(s).*	*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*	*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*	*Describe how the GCC Verifier has verified the claims that the project is likely to achieve the identified Project level SDGs target(s).*	*Describe whether the project-level SDG target(s) is likely to be achieved by the target date (Yes or no)*
Goal 1: End poverty in all its forms everywhere								
Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture								

Goal 3. Ensure healthy lives and promote well-being for all at all ages									
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all									
Goal 5. Achieve gender equality and empower all women and girls									
Goal 6. Ensure availability and sustainable management of water and sanitation for all									
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all	SDG Target 7.2	Yes	The project generates electricity from the sustainable and renewable solar source and contributes to increase the share of renewable energy mix in the global energy mix. By using advanced solar power technology which is cleaner source of energy, the implementation of the project avoids the equivalent amount of fossil fuel consumption for the power generation in the absence of the project, thus promotes investment into the cleaner technology-based power generation projects. By installing advanced solar power technology the project also promotes upgraded cleaner	The project is to deliver annual 41,568MWh of solar based electricity in the crediting period into the Chinese national grid. The project has already started contributing to the SDG 7 since its start date 14/03/2016.	Enhance the share of installed electricity generation capacity from renewable energy sources. The project is to deliver annual 41,568MWh solar based electricity in the crediting period into Chinese national grid.	The project increases the renewable energy share in Chinese energy production mix. It provides annual 41,568MWh clean energy to the grid.	The quantity of electricity generation and delivered to the power grid will be monitored by electric meters installed at the substation. The monthly settlement notes from the grid company will be available for double check of the		

			technology solutions and infrastructure in the power generation sector in the host country.				monitored data.		
Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all	SDG Target 8.5	Yes	The project creates long-term job positions for local people including men and women during the operation, and provides fair salary and job trainings for the employees, protects labour rights and promotes safe and secure working environment, supports a transition to a low carbon society, etc.	The project provides about 20 long-term jobs during its operation period. By implementation of the project, the economic development has also been achieved in the project location by creating opportunities to the other allied services and indirect employment to local people.	20 people to be recruited including men and women.	The project creates job opportunities in both construction and operation periods. It creates long-term employment for 20 people who are directly working at the site.	The annual number of employment, salary and welfare, job training and other public benefit activities to the employees and local communities will be monitored and recorded to evaluate the project's contribution to the SDG.		
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation									
Goal 10. Reduce inequality within and among countries									
Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable									
Goal 12. Ensure sustainable									

consumption and production patterns									
Goal 13. Take urgent action to combat climate change and its impacts	SDG Target 13.3	Yes	The project generates renewable energy-based electricity and mitigates CO_2 emissions which would have been generated from the fossil fuel-based power plants.	The project involves the installation of 30MW solar power in China.	The project will reduce 29,737 tCO_2 per annum and total 297,370 tCO_2 during the 10-year crediting period.	Ensure optimum generation from the project to the grid.	The electricity generated and delivered to the grid will be monitored by the electric meters installed at the substation. Then the annual CO_2 emission reductions can be calculated by multiplying the emission factor of the connected grid.		
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development									
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse 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									

SUMMARY	**Targeted**	**Likely to be Achieved**
Total Number of SDGs	**3**	**3**
Certification label (Bronze, Silver, Gold, Platinum, or Diamond) for the ACCs as defined in the PSF	**Silver**	**Silver**

Section G. Local stakeholder consultation

G.1. MODALITIES FOR LOCAL STAKEHOLDER CONSULTATION

>>

To ensure the sustainability of the project which is one of the key requirements, the project owner carried out the stakeholder consultation in several ways.

On May 2, 2014, the project owner published the summary of EIA of the project on local bulletin board, and invited the local people to submit their opinions within the following 10 working days.

The survey questions are shown below.

1. Do you know the project?
2. What do you think of the impact of the project on the local environment?
3. What do you think of the impact of the project on local economy?
4. What impact the project will have on local transportation?
5. Do you support the implementation of the project?

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

Item		Number	Percentage
Total participants		20	100%
Gender	Male	17	85%
	Female	3	15%
Occupation	Farmer	19	95%
	Worker	1	5%
	Official	0	0%
Age	18~40	8	40%
	41~60	10	50%
	Above 60	2	10%

In addition, the project owner conducted a stakeholder consultation meeting on January 12, 2015 by directly inviting the representatives of the local official departments, village committees and villagers, in order to introduce the design of the project including key technical parameters, the environmental protection measures to be taken, the benefits to the local communities, etc.

G.2. SUMMARY OF COMMENTS RECEIVED

>>
The results of this survey are shown below:

20 questionnaires had been delivered and 20 of them had been collected.

- 95% participants know the project.
- 90% think no severe environment impact will be caused by the project.
- 95% think the project will promote the development of local economy.
- 50% think there is no impact on local transportation, 45% think the project will improve the current road conditions, 5% not sure.
- 100% are supportive to the implementation of the project.

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 exhaust gas, dust, wastewater and municipal solid waste. As for the impact on ecologic environment, the project owner should pay more attention on the soil and water loss.
- During operation period, the project owner should properly treat municipal solid waste.

  All 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

>>
The participants are all very supportive to the project. No negative comments are received.

For the problems of noise, wastewater, vegetation damage, which the public is mainly concerned about as mentioned in Section D.1 and Section E.1, the project owner will take effective measures to avoid these impacts accordingly as mentioned above.

Section H. Approval and authorization

>>
As per GCC requirements, if GCC Program receives the approval to issue CORSIA eligible units beyond 31 December 2020, the project owner shall ensure that there is no double counting for Emission units generated after 31 December 2020. Hence, a written attestation, expressing the intention, from host country's national focal point or focal point designee shall be provided prior to submission of request for registration to the GCC Program. This authorization is not required if

ACCs are requested to be issued for monitoring period ending on or prior to 31 December 2020 and this is not a requirement for C+ label. A written attestation from the host country's national focal point or focal point designee will be provided at the earliest opportunity, but prior to submission of requesting issuance to the GCC Program for the relevant monitoring period from 01/01/2021 onwards, for the issuance of ACCs with CORSIA-market eligibility flag (C+).

APPENDIX 1. CONTACT INFORMATION OF PROJECT OWNERS

Project Owner name (as per LON/LOA)	Sichuan Yanyuan Jiamihe Hydropower Development Co., Ltd.
Country	The People's Republic of China
Address	18/F, Hydropower Building, Tianfu Second Street, High tech Zone, Chengdu, Sichuan Province, China
Telephone	+86-13564138565
Fax	-
E-mail	2593116898@qq.com
Website	-
Contact person	Huiru Kong

Project Owner name (as per LON/LOA)	Carbon Road Limited.
Country	The People's Republic of China
Address	Room 1805, No.1699 Gubei Road, Minhang District, Shanghai, China
Telephone	+86 13701243659
Fax	+86 21 60900112
E-mail	haochenwang@carbonroad.com
Website	www.carbonroad.com
Contact person	Haochen Wang

APPENDIX 2. AFFIRMATION REGARDING PUBLIC FUNDING

>>
No public funding for the project activity.

APPENDIX 3. APPLICABILITY OF METHODOLOGY(IES)

>>
Applicability of methodology has been discussed in section B.2. No further information.

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

>>
Ex-ante calculation of emission reductions has been detailed in section B.6. No further information.

APPENDIX 5. FURTHER BACKGROUND INFORMATION ON MONITORING PLAN

>>
Monitoring plant has been described in section B.7. No further information.

APPENDIX 6. SUMMARY REPORT OF COMMENTS RECEIVED FROM LOCAL STAKEHOLDERS

>>
Summary of the comments from the stakeholders has been detailed in G.2. No further information.

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

>>
Not applicable as this project activity is not a De-Registered CDM project activity.

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

>>
Not applicable as this project activity 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.

>>
Not applicable as this project activity is Sub Type 1 of A2.

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