

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG)

VALIDATION REPORT Renewal of the Crediting Period

Dongdongtan 9MWp Solar PV Project

GS ID No.: GS 2680
Report No.: CTI/NB-2020-0610
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Project title:	Dongdongtan 9MWp Solar PV Project (Project ID: GS 2680)	
Project Owner (Host Country):	Three Gorges New Energy Jiuquan Power Generation Co., Ltd.	
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Host Country:	P.R.China	
Methodology:	AMS-I.D (version 18.0) - Grid connected renewable electricity generation	☐ Large Scale ☒ Small Scale
Tools, Principles and Requirements:	GS4GG Principles & Requirements, Version 1.2; GS4GG Activity Requirements: RE Activity Requirements, Version 1.2; Gold Standard for the Global Goals Requirements & Guidelines for Transition of Projects from Previous Versions of the Standard, Version 1.1; Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 03.0.1; Tool to calculate the emission factor for an electricity system, Version 07.0 (EB 100, Annex 04).	
Scope:	UNFCCC CDM Sectoral Scope: 1 GS4GG Scope: 2 Technical Area: 1.2	
GS4GG PDD Version and Date:	Version 01 dated 19/12/2020 Version 02 dated 22/02/2021 Version 2.1 dated 07/05/2022	
GHG reducing measure/technology:	Displacing fossil fuel based electricity generation with renewable solar energy	
Annual average emission reductions (estimate):	11,253 tCO ₂ e/yr (SDG 13)	
Estimated impact:	SDG 7: 14,440 MWh/year SDG 8: - Number (employees): 8 persons - Number (Trainings): Periodically, minimum 1 training every year - training on the technology and the monitoring of the plant operation, and the emergency and safety procedures - The average income of employees is higher than local average salary level SDG 13: 11,253 tCO ₂ e/yr	
Selected Sustainable Development Goals (SDGs):	7; 8; 13	
Name, position and signature of the approver of the validation and certification report:	Wang Guolian Technical Reviewer/Approver 	

ABBREVIATIONS

BM	Build Margin
CDM	Clean Development Mechanism
CME	Coordinating/managing entity
CER	Certified Emission Reduction
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
EB	Executive Board
GHG	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for the Global Goals
GS-VERs	Gold Standard Voluntary Emission Reductions
GS-VER-PDD	Gold Standard Voluntary Emission Reduction Project Design Document
GS4GG PDD	Gold Standard for the Global Goals Key Project Information & project Design Document (PDD)
GS-TAC	Gold Standard Technical Advisory Committee
GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PP	Project Participant
UNFCCC	United Nations Framework Convention on Climate Change

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REVIEWED DOCUMENTATION

The following table outlines the documentation reviewed during the validation:

- /1/ Gold Standard PDD for renewal of crediting period, Version 01 dated 11/05/2020
- /2/ GS4GG PDD for renewal of crediting period, Version 01 dated 19/12/2020, Version 02 dated 22/02/2021, Version 2.1 dated 07/05/2022
- /3/ CER calculation spreadsheet
- /4/ Registered GS-VER-PDD, Version 05 dated 08/05/2014
- /5/ Registered GS-VER-Passport, Version 05 dated 08/05/2014
- /6/ Gs Validation Report issued by TÜV Rheinland dated 12/05/2014 Version 04 Report No. 01 997 9105077913
- /7/ The monitoring reports and corresponding verification report for the 1st crediting period
- /8/ Feasibility Study Report completed in 02/2012 and approved by Gansu Development and Reform Commission on 28/12/2012.
- /9/ Environmental Impact Assessment (EIA) completed in 02/2012 and approved by Gansu Environmental Protection Agency (EPA) on 30/03/2012.
- /10/ 2019 Baseline Emission Factors for Regional Power Grid in China
- /11/ The approved consolidated baseline and monitoring methodology AMS-I.D (version 17.0) "Grid connected renewable electricity generation"
- /12/ The approved consolidated baseline and monitoring methodology AMS-I.D (version 18.0) "Grid connected renewable electricity generation"
- /13/ CDM project standard for project activities Version 02.0
- /14/ CDM project cycle procedure for project activities Version 02.0
- /15/ CDM validation and verification standard for project activities Version 02.0
- /16/ The Gold Standard toolkit Version 2.2
- /17/ GS4GG Principles & Requirements, Version 1.2
- /18/ GS4GG Activity Requirements: RE Activity Requirements, Version 1.2
- /19/ Gold Standard for the Global Goals Requirements & Guidelines for Transition of Projects from Previous Versions of the Standard, Version 1.1
- /20/ Annex Z Gold standard procedure for the renewal of a crediting period
- /21/ Tool to calculate the emission factor for an electricity system Version 07.0
- /22/ Assessment of the validity of the current/original baseline and update of the baseline at the renewal of the crediting period, version 03.0.1
- /23/ Mail provided by the Goldchina Consultancy International Co., Ltd.
- /24/ Photos of announcement posted on bulletin boards
- /25/ <http://cdm.unfccc.int>
- /26/ <http://www.terra.org/>
- /27/ <http://www.mee.gov.cn/>
- /28/ <http://www.markit.com/>
- /29/ <http://www.irecstandard.org/>
- /30/ <http://www.greenenergy.org.cn/>
- /31/ Labor Contract Law
- /32/ Women's Rights Protection Law
- /33/ Prohibition of Child Labor Regulations

1 Introduction

1.1 Objective

The validation for renewal of the crediting period serves as assessment of validity of the baseline of project that has opted for renewal of the crediting period. The validation is an independent 3rd party assessment of the project baseline. In particular, the project's baseline and the monitoring plan are validated in order to confirm that the project baseline, as documented, is sound and reasonable and meet the stated requirements and identified criteria. Assessment of validation of baseline is a requirement for all Gold Standard projects seeking for renewal of the crediting period and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

For projects transit from previous versions of the Standard to Gold Standard for the Global Goals (GS4GG), the validation for renewal of the crediting period also serves as assessment on updated Safeguarding Principles, updated SDG contribution, any updates to monitoring plan, updated baseline information, demonstration of OFN compliance to latest version of applied methodology and other relevant documents under GS4GG.

Gold Standard criteria refer to the Kyoto Protocol criteria and the CDM rules and Modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

As per para. 4.2 of Gold Standard for the Global Goals Requirements & Guidelines for Transition of Projects from Previous Versions of the Standard Version 1.1 issued on March 2018, transition projects during the renewal of crediting period shall submit entire project information in new templates issued by VVB for review. The documents shall essentially contain information on updated Safeguarding Principles assessment, updated SDG contribution assessment, any updates to monitoring plan, updated baseline information, demonstration of OFN compliance to latest version of applied methodology etc. If project is looking to stack new Impact Statement and/or Products over GSVERs the required information to demonstrate compliance to the relevant methodology, product specification and additionality shall also be presented.

As per para. 5.1.47 of GS4GG Principles & Requirements Version 1.2 issued on October 2019, Design Certification Renewal follows the same process as Validation and Design Review (Design Certification) though the scope of assessment is limited to: (a) Changes in the Project as related to the General Eligibility Criteria; (b) Incorporation of any relevant updates to the Gold Standard Requirements; (c) Re-definition of Baseline Scenario and any impact of change on the Eligibility Principles, Criteria and Requirements; (d) Any Gold Standard activity, product and methodology-specific Requirements; (e) Demonstration of Ongoing Financial Need, where relevant – see Ongoing Financial Need.

Based on the above GS rules and requirements, the validation scope is defined as an independent and objective review of the GS4GG PDD, the project's baseline study, updated baseline information, the updated Safeguarding Principles, updated SDG contribution, any updates to monitoring plan, demonstration of OFN compliance to latest version of applied methodology and other relevant documents. The information in these documents is reviewed against GS4GG Principles & Requirements, GS4GG RE Activity Requirements, Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

CTI validation team has employed a risk-based and step-wise approach when conducting the validation, focusing on the identification of significant risks for project implementation and the generation of VERs.

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

2 Validation Method

2.1 Appointment of validation team

The validation was conducted by a validation team which was designated by CTI in accordance with its internal procedures. The competence and impartiality of CTI validation team are the key elements that have been taken into account by CTI when appointing CTI validation team. The details of CTI validation team are as follows:

Validation Team		Role									
Full name	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Li Ziqi	TA1.2, TA5.1, TA5.2, TA11.1, TA11.2, TA12.1	x		x		x					
Wang Guolian	TA1.2, TA3.1, TA5.1, TA5.2, TA11.1, TA11.2, TA12.1								x	x	

Collectively, the above validation team is competent for conducting the validation and the impartiality is well guaranteed. Meanwhile, the Certificates of Competence for validators and experts of CTI validation team are enclosed in Appendix B to this report.

2.2 Desk review

The validation is performed primarily as a document review as below:

The GS4GG PDD and additional background documents related to the project design and baseline, i.e., country area laws, Gold Standard Procedures for the Renewal of a Crediting Period, GS4GG Principles & Requirements, GS4GG RE Activity Requirements, Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (Version 03.0.1), approved methodology – AMS-I.D Grid connected renewable electricity generation (version 18.0), CDM project standard for project activities (PS Version 02.0), CDM project cycle procedure for project activities (PCP Version 02.0), CDM validation and verification standard for project activities (VVS Version 02.0), Glossary of CDM terms and Kyoto Protocol were reviewed.

All reviewed documents and information sources used during desk review are listed in Appendix B to this report.

2.3 FOLLOW-UP site visit and interviews with project stakeholders

During the desk-review phase, the relevant documents include the GS4GG PDD and the corresponding validation report, the previous monitoring reports and corresponding verification reports for the 1st crediting period and other relevant background documents were submitted and assessed.

CTI validation team from Shenzhen CTI International Certification Co., Ltd (CTI) applies standard auditing techniques to assess the renewal of crediting period of the Dongdongtan 9MWp Solar PV

Project. On 08/01/2021, CTI validation team of CTI has performed on-site visit and personal interviews with representatives of the project owner and local authorities.

The issues discussed during the follow-up interview were provided in the table below:

No .	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Wang	Hongye	Three Gorges New Energy Jiuquan Power Generation Co., Ltd.	08/01/2021	1. Status of the project and any modifications (including PPs) with respect to the registered GS-VER-PDD; 2. Applicability of selected methodology; 3. Baseline of the project and its updates; 4. Emission factors and their updates; 5. Monitoring plan and changes; 6. Stakeholder consultation process and its outcomes; 7. Sustainable indicators change assessment; 8. Sustainable Development Monitoring Plan; 9. Safeguarding principle assessment.	Li Ziqi
2	Li	Lei				
3	Sun	Jia	Villager	08/01/2021	1. The process and participation of the stakeholder consultation; 2. The impact of the project activity in the 1 st crediting period; 3. The complaint by local stakeholders and the implementation of the mitigation measures; 4. Revisions of the Sustainable Development Monitoring Plan to accommodate the comments from local stakeholder; 5. Revisions of the the Safeguarding principles to accommodate the comments from local stakeholder.	
4	Jia	Weimin				
5	Wang	Xiaoping				
6	Li	Weiqiang				
7	Wang	Junren	Jiuquan Farm of Dongtando ng Area			
8	Zhang	Li				

3 Resolution of findings and REPORTING

During the validation of a project activity, to identify issues that need to be further elaborated upon, researched or added to in order to confirm that the project activity meets the GS requirements and can achieve credible emission reductions, CTI validation team will issue a Corrective Action Request (CAR), a Clarification Request (CL) or a Forward Action Request (FAR) depending on different situations.

A CAR will be raised if one of the following occurs,

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The requirements have not been met;

(c) There is a risk that emission reductions cannot be monitored or calculated.

A CL will be raised if information is insufficient or not clear enough to determine whether the applicable requirements have been met.

A FAR will be raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. However, FARs shall not relate to the requirements for registration.

After checking Verification Report of previous monitoring period, CTI Validation Team identified no FARs. In the course of the validation, 1 Clarification Requests (CLs), 1 Corrective Action Request (CAR) or Forward Action Request (FAR) were raised. To address them, the PP responded by providing additional information or evidence, and/or by revising the GS4GG PDD. The GS4GG PDD was resubmitted by PP to CTI validation team for further review. Documents reviewed and information sources used are also listed in Appendix B to this report.

The final validation conclusion presented in this report is based on the project information as described in the GS4GG PDD (Version 2.1 dated 07/05/2022). CTI validation team compiled the validation report and submitted it for technical review, decision making and final approval.

4 Summary of Validation Findings

4.1 Participation

CTI validation team checked the names of the project participants included in the request for renewal of the crediting period against the registered GS-VER-PDD. Based on desk review and site visit, it is confirmed that the project participant from host Party is Three Gorges New Energy Jiuquan Power Generation Co., Ltd. and the project participant is Climate Bridge (Shanghai) Ltd. Therefore, CTI validation team confirmed that the project participants indicated in the updated GS-VER-PDD are consistent with the names of the registered project participants for the project activity in the GS website.

4.2 Project description

The proposed project - Dongdongtan 9MWp Solar PV Project was registered as a GS-VER project. The installed capacity is 9.009MWp which consists of 136,036 pieces of the polycrystalline silicon solar cell modules with unit capacity of 250 Wp. The annually 14,440 MWh power supplied to the Northwest China Power Grid (NWPG), which is mainly dominated by fossil fuel power output. By displacing part of the power generated by thermal power plants, the project is therefore expected to reduce CO₂ emissions with an estimated 11,253 tCO₂e per year during the second crediting period. Based on the site visit, CTI validation team assessed project operating-related parameters, which confirmed that the project activity is consistent with the design of GS4GG PDD for the renewal of a crediting period. The geographical coordinates of the project is East longitude 98°32'09" and North latitude 39°36'10", which was confirmed through GPS equipment by validation team during on-site visit. The Major technical parameters of the key equipments of the Project.

	Item	Unit	Data
Solar Sell module	type		YL250P-29b
	Number		36036
	Rated Max. Power	kW	250
	Rated Voltage number	V	30.4
	Rated Current	A	8.24

	Open Circuit voltage	V	38.4
	Short Circuit current	A	8.79
	Lifetime	year	25
Inverter	Type		SG500MX
	Number		18
	Rated Output power	kW	500
	Rated Output voltage	V	3~315
	Rated Output frequency	HZ	50

According to the monitoring report and verification reports on GS website (<https://registry.goldstandard.org/projects/details/1332>), the first 7-year renewable crediting period is from 08/12/2013 to 07/12/2020. As per 5.1.46 of GS4GG PRINCIPLES & REQUIREMENTS, delay in the completion of re-validation beyond the last date of current certification cycle shall result in a reduction of any issuance of Certified Products and/or Impact Statements available during following certification cycle (for example, a delay of 1 year beyond the first cycle shall mean that no Certified Impact Statements shall be issued for the period of delay). And PP is applying for a second crediting period which started from 08/12/2020.

4.3 Changes in the Project as related to the General Eligibility Criteria

Project eligibility and any change in the project as related to the general eligibility criteria defined in the GS4GG Principles & Requirements Version 1.2 and GS4GG RE Activity Requirements Version 1.2 is justified according to GS Requirements under GS4GG as below:

General Eligibility Criteria	Means of Validation	Criteria fulfilled
3.1.1 of GS4GG Principles & Requirements Version 1.2, (a) Types of Project	As described in the registered GS-VER-PDD, the project makes use of renewable solar resources to generate electricity to the regional grid. Thus, the project type is Renewable Energy Supply, which satisfied with 2.1.2 (a) and (b) of GS4GG RE Activity Requirements, Version 1.2.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (b) Location of Project	As per FSR, the project is located at Dongdongtan Area, Suzhou District, Jiuquan City, Gansu Province, P. R. of China. China is eligible state for Gold Standard VER projects as defined by the GS.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (c) Project Area, Project Boundary and Scale	As per AMS-I.D version 18.0 (Latest methodology applied as available on CDM web site) - "The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the GS project power plant is connected to". The project boundary includes the project site, substations, grid and all power plants connected to grid. The project activity will evacuate power to the Northwest China Power Grid (NWPG). Therefore, the entire Northwest China Power Grid (NWPG) and all connected power plants have been considered in the project boundary for the project activity. The same is checked by CTI validation team during the validation site visit and found correct. As described in the registered GS-VER-PDD, the spatial extent of the project boundary includes the project activity and all power plants/units connected physically to the	☒ Yes ☐ No

	electricity system that the project activity is connected to. The estimated annual emission reductions of the project activity is 11,253 tCO₂e in the second crediting period, which is greater than 10,000 tCO₂eq, the microscale threshold as defined in 3.1.3 (a) of GS4GG RE Activity Requirements, Version 1.2. As per 3.1.3 (b) of GS4GG RE Activity Requirements, Version 1.2, the project activity above microscale threshold are considered as Non microscale project. As described in the registered GS-VER-PDD, the total installed capacity of the project is 9.009MWp, it satisfies the requirement of UNFCCC rules that the capacity of the project less than 15 MW for a small-scale CDM project.	
3.1.1 of GS4GG Principles & Requirements Version 1.2, (d) Host Country Requirements	The host country of the project activity is China which is validated from the registered GS-VER-PDD. The GS4GG allows the states defined as 'Non-Annex I Parties to the Convention' on UNFCCC website as the host country for GS projects. China is a Non Annex I Party and therefore eligible state for Gold Standard Projects. As per the registered GS-VER-PDD and validation report, the EIA Form the project was approved by Gansu Environmental Protection Agency (EPA) on 30/03/2012. And the project was approved by Gansu Development and Reform Commission on 28/12/2012. Therefore, CTI validation team confirms that the project activity is in compliance with applicable Host Country's legal, environmental, ecological and social regulations.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (e) Contact Details	CTI validation team checked the names of the project participants included in Appendix 2 of GS4GG PDD requested for renewal of the crediting period against the registered GS-VER-PDD. Based on desk review and site visit, it is confirmed that the project participant from host Party is Three Gorges New Energy Jiuquan Power Generation Co., Ltd. and the project participant is Climate Bridge (Shanghai) Ltd. Therefore, CTI validation team confirmed that the project participants indicated in the GS4GG PDD are consistent with the names of the registered project participants for the project activity in the GS website.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (f) Legal Ownership	By checking Power Purchase Agreement (PPA) and Electricity Transaction Notes issued by the grid company, CTI validation team confirms that the project owner has the full legal ownership of emission reductions that are generated under Gold Standard Certification.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (g) Other Rights	The project makes use of renewable solar resources to generate electricity. No other resources except solar are used. As per the Project Approval and EIA approval, the project activity has legal right to make use of solar resources. No disputes or contested rights were identified for the project activity.	☒ Yes ☐ No
3.1.1 of GS4GG Principles & Requirements Version 1.2, (h) Official Development Assistance (ODA) Declaration	The project does not receive any public funding as per the registered GS-VER-passport. An ODA declaration is presented in the Annex 1 of registered GS-VER-passport based on the ODA Declaration Template in the Annex D of Toolkit version 2.2, in which the project developer has declared the project's non-use of ODA.	☒ Yes ☐ No

	Also, it is stated in section A.5 of GS4GG-PDD that “There is no public funding from Annex 1 countries and no Official Development Assistance (ODA) involved in the project activity”.	
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4.4 Incorporation of any relevant updates to the gold standard requirements

Any relevant updates of the project activity to the gold standard requirements is justified according to GS4GG Principles & Requirements Version 1.2 and GS4GG RE Activity Requirements Version 1.2, and relevant GS requirements under GS4GG as below:

▪ Principle 1 – Contribution to Climate Security & Sustainable Development

By checking the registered GS-VER-PDD, site visit and interviewing local stakeholders, CTI validation team confirmed that the project activity would contribute sustainable development in the region in following aspects:

▪ GHG emission reduction

The project activity achieves obvious greenhouse gas (GHG) emission reductions by avoiding CO₂ emissions, as grid-connected fossil fuel-fired power dominates in the Northwest China Power Grid.

▪ Pollutants emission reduction through replacing fossil fuel combustion

The project is to replace grid-connected fossil fuel-fired power plants in the Northwest China Power Grid (NWPG), and thus reduce fossil fuel consumption and avoid pollutants emission, such as SO₂, and NO_x, brought by fossil fuel combustion. Therefore, the project has obvious environmental benefit.

▪ Employment opportunities

The project activity created local employment opportunities during the assembly and installation of power generation equipment during project construction period. Also, the project activity provided long-term working positions during the operation period.

▪ RE industry development

The installation of the project activity helps to stimulate the development of local solar power industry. Also, it encourages and promotes the technological progress and commercial promotion of China's grid-connected clean renewable energy power generation.

The SDG goals of the project activity have been described in the GS4GG PDD. CTI checked all the SDG goals of the project activity through document review and site visit, which was:

SDG Goal	Assessment of Methodological choices/approaches for estimating the SDG outcome
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SDG 7 –Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all	Measurement Method: - Quantity of net electricity generation supplied to the grid in year y is monitored through 2 bi-directional electricity meters (one main meter M1 and one backup meter M1') with accuracy 0.2S. $EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed to the grid as a result of the implementation of the GS project activity in year y (MWh/year) $EG_{facility,y}$ = Quantity of net electricity generation supplied to the grid in year y (MWh/year) As this project is greenfield power plant, $EG_{PJ,y} = EG_{facility,y}$ $EG_{facility,y} = EG_{exported,y} - EG_{imported,y}$ This will be sourced from meter reading records and the project owner on monthly basis. The other parameters used for Quantity of net electricity generation supplied to the grid in year y are mentioned in monitoring plan. QA/QC Process: This parameter is monitored monthly and value of parameter will be cross checked with electricity sales records. The meters will be calibrated every year by qualified third party based on the requirement of local and national standard. Relevant SDG Target: 7.2 -By 2030, increase substantially the share of renewable energy in the global energy mix. Corresponding indicator: MWh of renewable energy generated (7.2.1 Renewable energy share in the total final energy consumption)
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SDG 8 – Decent Work and Economic Growth: Promote inclusive and sustainable economic growth, employment and decent work for all 1. Quantitative employment and Income Generation 2. Quality of employment	1. Quantitative employment and Income Generation Measurement Method: - PP recorded quantity of employees and their salary level which could be compared with local average salary level. QA/QC Process: The number of persons employed would be mentioned in the HR records. HR records can also be checked for salary. During each verification, the salary of employees will be compared with the average salary level of power industry in Gansu Province to ensure that the salary provided to the employees is as per the local standards. Relevant 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. Corresponding indicator: 1) Number of jobs created (8 persons) 2) Monthly average salary of employees 2. Quality of employment Measurement Method: - The Project organized training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures. QA/QC Process: The number of training could be checked through the training records. Relevant 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. Corresponding indicator: 1) No. of trainings provided to the employees (periodically, minimum 1 training will be provided/year) The SDG impact of SDG 8 “Decent Work and Economic Growth” was not fully estimated in the GS4GG PDD (Version 01 dated 19/12/2020). Therefore, CAR01 was raised. Except the number of working opportunity created by the project activity, the other indicators such as the quantity of training, the kind of training, income level of employees, as well as the corresponding monitoring method of these indicators was required to described in the PDD. In the GS4GG PDD (Version 2.1 dated 07/05/2022), the quantity of training, the kind of training, the average income level of employees, as well as the corresponding monitoring method of these indicators have been correctly described. Hence, CAR01 was closed.
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SDG 13 – Climate Action: Take urgent action to combat climate change and its impacts	Measurement Method: - Quantity of net electricity generation supplied to the grid in year y (MWh) ($EG_{\text{facility},y}$) multiplied by the Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{\text{grid,CM},y}$). The grid emission factor is ex-ante parameter and determined based on data obtained from the latest “2019 Baseline Emission Factors for Regional Power Grids in China” issued by the China DNA on 29/12/2020. This is in line with “Tool to calculate the emission factor for an electricity system, version 07.0.0”. The emission reductions are calculated as per registered GS-VER-PDD and as per methodology requirement. QA/QC Process: This parameter is calculated, and no any QA/QC procedure required. Relevant SDG Target: 13.2: Integrate climate change measures into national policies, strategies and planning. Corresponding indicator: Emission reductions in tCO₂e from the project activity.
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The baseline scenario for the project in the second crediting period remains the same as that in the registered GS-VER-PDD of first crediting period and there is neither any comments were raised by the stakeholder consultation. The data source and reference were provided for each indicator in the GS4GG PDD, and CTI validation team confirmed that assessment to SDG goals of the project activity is appropriate for the renewal of the crediting period.

▪ Principle 2 – Safeguarding Principles

A “Do no harm” assessment based on the safeguarding principles of the UNDP was carried out in four aspects: Human Rights, Labor Standards, Environmental Protection and Anti-Corruption in the registered GS-VER Passport, as per GS Toolkit version 2.2. In the GS4GG PDD for renewal of crediting period, a safeguarding principles assessment was carried out under gold standard GS4GG as below:

Safeguarding principles	Assessment questions	Assessment of relevance to the project (Yes/potentially /no)	Justification by the The validation team	Mitigation measure (if required)
SOCIAL & ECONOMIC SAFEGUARDING PRINCIPLES				
Principle Human Rights	1. a. The Project developer and the Project shall respect Internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. b. The Project shall not discriminate with regards to participation and inclusion.	No	a. The Project is not in conflict with the economic livelihood or other issue of the local community. Thus, the Project does not cause any human rights abuse and respects internationally proclaimed human rights issue. b. Project activities are not expected to cause any human rights abuse. China has published relevant regulations and practice in line with the treaties, such as Labor Contract Law to make sure that no action can be taken against human rights. Especially with regard to gender equality, China has published the "Women's Rights Protection Law", which stipulates detailed enforcement rules to provide support and benefits to women. The project does not involve any conflict with livelihood of local people and respect all human rights. Stakeholder consultation had been carried out to take their opinion. The host country prohibits discrimination on the basis of a person's race, sex, religion, place of birth, or social status.	Not Required
Principle Gender Equality & Women's Rights	2. 1. The Project shall complete the following gender assessment questions in order to inform Requirements, below: a. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits?	No	1. The project does not decrease women's access to or control of resources. a. No, the Project does not reduce women's access to or control of resources, entitlements and benefits. The project will benefit to local community regardless of gender. The published "Women's Rights Protection Law" is protecting the above benefits for women.	Not Required

b. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)? c. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)? d. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)? e. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities? f. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits? g. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?		b. No, the Project does not create any adverse effect on the local community. c. No, the Project does not consider the gender roles while engaging them and thereby provide equal rights to men and women. As per EIA Report and stakeholder consultation by the project developer, local stakeholder meetings are scheduled considering participation by both Men and Women. d. The project, complying with the "Women's Rights Protection Law" and "Labor Contract Law" does not discriminate the local community on basis of gender or caste or religion and therefore equally serve to all. e. No, the Project design neither increase women's workload nor prevent them from engaging in other activities. f. There is no room for discrimination against women in this Project. g. The Project will not limit women's ability regarding natural resources. The project is solely utilizing solar power and therefore does not impact natural resources of the region. h. No, in order to protect the physical and mental health of minors, the State Council promulgated the "Prohibition of Child Labor Regulations", prohibiting employers from recruiting minors under the age of 16. Also, China published "Women's Rights Protection Law". Therefore, the Project will not expose women and girls to further risks or hazards.	
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	h. Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards? 2. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women. a. Sexual harassment and/or any forms of violence against women - address the multiple risks of gender - based violence, including sexual exploitation or human trafficking. b. Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. c. Restriction of women's rights or access to resources (natural or economic). d. Recognise women's ownership rights regardless of marital status - adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources. 3. Projects shall apply the principles of non discrimination, equal treatment, and equal pay for equal work, specifically: a. Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities.		2. The project does not create any direct or indirect impacts on gender equality and/or the situation of women: a. The project developer has a grievance cell which would investigate complaints. b. Minors under the age of 16 are not allowed to be recruited. Project participation by women or girls older than 16 is merely voluntary basis and there is no compulsion on them. The project developer has a grievance cell which would investigate complaints. Through the site interview and checking the list of employees provided by HR department of the project, CTI validation team was able to confirmed that no Minors under the age of 16 were employed, women or girls older than 16 were employed on a voluntary basis, and no slavery, imprisonment, physical and mental drudgery, punishment or coercion to women and girls. c. The Project will not restrict women's rights or access regarding natural resources. d. Marital status is completely irrelevant to the Project. The project developer does not discriminate on gender, caste, religion etc. The indicator "Quantitative employment and income generation" will be monitored during the 2nd credting period. 3. The project has applied the principles of non-discrimination and equal treatment; pay & work as follows:	
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	b. Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. c. Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits. 4. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.		a. Yes, the Project has equal opportunity for women and men to contribute both in volunteer and working positions. The project has HR policy and same is followed equally. b. The project developer has a specified HR policy that considers participation by both men and women. c. There is no limit on the access to Project participation and benefits from either of these conditions. 4. PP does not involve in any form of discrimination in any kind. China also ratified relevant ILO core conventions on equality, namely Equal Remuneration Convention (Convention No 100) and Discrimination (Employment and Occupation) Convention (Convention No 111)¹.	
Principle 3: Community Health, Safety & Working Conditions	a. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community.	No	a. The project is renewable energy technology (solar Turbine Generators based power generation Technology) and does not have exposure to increased health risks and shall not adversely affect the health of the workers and the community. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments” - PP ensures safe access and planned prevention to avoid any kind of accident. The installing and operation of solar turbines requires trained, dedicated working at height maintenance teams to access risks and select appropriate equipment before any work is carried out.	Not required

			All the safety and hygiene measures are being ensured in order maintain a safe and healthy environment for the workers at site. In case of any emergency, the site incharge will ensure to take adequate action and preventive measures to avoid any miss happening. Necessary health and safety measures will be taken during construction and operation phase, relevant staff will be trained to be able to work with safety. The project is in compliance with all relevant local and national laws. The project developer is committed to the employee's workplace health & safety during all phases of the project. All employees will attend health & safety trainings.	
Principle 4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement 4.1 Sites of Cultural and Historical Heritage 4.2 Forced Eviction and Displacement 4.3 Land Tenure and	4.1 Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, or practices)? 4.2 Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)? 4.3 a. Does the Project require any change to land tenure arrangements and/or other rights? b. For Projects involving land-use tenure, are there any uncertainties with regards land tenure, access rights, usage rights or land ownership? 4.4. Are indigenous peoples present in or within the area of influence of the Project and/or is the Project	No	4.1 This is a registered Large - Scale GS VER solar power project, there are no protected archeological and cultural heritage sites are reported within the project footprint". As per the EIA Report of the project activity, it is clear that the project site is not a cultural heritage site. As per the EIA Report of the project activity, it is clear that the project site is not a cultural heritage site and the construction of the project activity does not require or cause any form of physical or economic relocation of peoples. Compliance with China's commitment to International Covenant on Economic, Social and Cultural Rights 10.04.79 will ensure no damage to critical cultural heritage. 4.2 The project has received the necessary approvals	Not required

Other Rights 4.4 Indigenous Peoples	located on land/territory claimed by indigenous peoples?		from the local authorities and does not lead to any resettlement. As stated in the EIA report, the construction of the project is far from the residential area, so the project does not require or cause material or economic migration (temporary or permanent, full or partial) of people. 4.3 a. The project has all the legal, customary rights on the land of both the sites and does not require any change to land tenure arrangements. b. There are no uncertainties regarding land tenure, access rights, usage rights or land ownership. PP have the rights to use land for the project activity since the relevant approvals have been obtained from the government, eg. The Project Approval and EIA Approval. 4.4. As per the EIA Report, the project is located at sites where there are no any peoples residing. The project location is not nearby the nearest residential area, thus project activity do not have impact on Indigenous Peoples.	
Principle Corruption	5. 3.5.1 The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	3.5.1. The project is renewable energy technology and does not contribute to or reinforce corruption of any kind. In addition, the project is owned by a private equity company and there are no government subsidies for the project. Therefore, the project does not involve corruption, nor does it participate in corruption, nor is it prone to abuse or corruption of commissioned power. Furthermore, connivance of corruption is an illegal activity in the host country, and the compliance of local labor takes into account that the same PP does not involve or participate in any type of corruption. The project complies with the "United Nations Convention against Corruption." China ratified the "United Nations	Not required

			Convention against Corruption" on 05/09/2011.		
ECONOMIC SAFEGUARDING GUIDELINES					
Principle Economic Impacts	6	3.6.1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard. a. Workers shall be able to establish and join labour organisations. b. Working agreements with all individual workers shall be documented and implemented. These shall at minimum comprise: (i) Working hours (must not exceed 48 hours per week on a regular basis), AND (ii) Duties and tasks, AND (iii) Remuneration (must include provision for payment of overtime), AND (iv) Modalities on health insurance, AND (v) Modalities on termination of the contract with provision for voluntary resignation by employee, AND (vi) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 1. The Project Developer shall justify that the employment model applied is locally and culturally appropriate.	No	3.6.1. Forced labor is an illegal activity in the host country and the local labor compliance takes into account of the same. Further, China is a party to ILO and forced labour is illegal in China. China has relevant laws and regulations in place prohibiting forced and compulsory labor, such as the Labour Contract Law, Women’s Rights Protection Law, Prohibition of Child Labor Regulation. The project fully complies with the relevant laws and respects fundamental right of employee. a. The Labor Contract Law highly protects the collective bargaining rights of the workers' federation. The project fully respects the rights of employees in accordance with all labor-related laws recognized by China. Compliance with the law is subject to government inspections and rulings. b. The Labor Contracts are in place for all individual employees. And all the Labor Contracts in compliance with labor laws are documented and implemented. The Labor Contracts stipulate working hours, duties and tasks, salary and payment of overtime, insurances, modalities on termination of the contract and provision for annual leave. Through site interview, checking the HR records and Personnel Management Regulations, CTI was able to confirm that the working hours was not exceeding 48 hours per week on a regular basis and the annual leave was at least 10 days per year determined by the working years, not including sick and casual leave.	Not Required
6.1 Labour Rights					
6.2 Negative Economic Consequences					

	3.6.2 Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development, AND (c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design. 2. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures. 6. Does the project cause negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?		Through site interview, CTI validation team was able to confirm that the project prefers the local employment in order that the culture is maintained at project site. 3.6.2 The country have strict prohibition for child labour. Thus project does not involve child labour neither in construction nor at operation of project activity. In the HR policy is also mentioned that no child labour will be entertained. 5. The project follows the health, safety and environment guidelines at project site. The project ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures. The indicators "Quality of employment" and "Quantitative employment and income generation" will be monitored during the 2nd crediting period. 6. The project activity created local employment opportunities during the assembly and installation of power generation equipment during project construction period. Also, the project activity provided long-term working positions during the operation period. The installation of the project activity helps to stimulate the development of local solar power industry. Also, it encourages and promotes the technological progress and commercial promotion of China's grid-connected clean renewable energy power generation. Therefore, the project will not cause negative economic consequences during and after project implementation.	
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ENVIRONMENTAL & ECOLOGICAL SAFEGUARDING PRINCIPLES					
Principle 7. Climate and Energy	a. Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	a. The project reduces Greenhouse Gas (GHG) emissions and fossil fuel usage compared to the baseline scenario.	Not required	
7.1 Emissions	b. Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?		b. The purpose of the project is to provide energy from solar farms. When the equipment is under maintenance, it may use electricity from some national grids. It does not use power or fuel resources from the local grid or to provide energy for other local users.		
7.2 Energy Supply					
Principle 8 Water	a. Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No	a. The project being a renewable Large-scale solar power project thus there is no impact of water resources. As per EIA report, the impact of the project on the natural or existing patterns of watercourses, groundwater and/or watersheds is negligible.	Not required	
8.1. Impact on Natural Water Patterns/Flows	b. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? If 'Yes' or 'Potentially' proceed to question 2.		b.This is unlikely by the solar power project.		
8.2 Erosion and/or Water Body Instability	c. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?		c. The risk of erosion is unlikely by the project.		
Principle 9 Environment, Ecology and Land Use	Does the Project involve the use of land and soil for production of crops or other products?	No	As per EIA Report, the project is a solar power project. Which uses barren land. It does not involve the use of land and soil for production of crops or other products. The project brings a landscape advantage. The area near the turbine was replanted.	Not Required	
9.1. Landscape Modification and Soil			Domestic solid waste will be collected together and periodically transferred to the local waste disposal plant for further treatment.		
			By checking domestic solid waste collection device, the wasted equipment collecting place as well as interview		

			with stakeholders, CTI validation team was able to confirmed that domestic solid waste are collected together and periodically transferred to the local waste disposal plant for further treatment during operation and construction period. The indicator “other pollutants” will be monitored.	
9.2. Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability to solar, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No	The project is renewable energy technology. Thus this section is Not Applicable.	Not required
9.3. Genetic Resources	Could the Project be negatively impacted by the use of genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development)?	No	The project is renewable energy technology. Thus this section is Not Applicable.	Not required
9.4. Release of pollutants	Could the project potentially result in the release of pollutants to the environment?	No	The project is renewable energy technology. The project does not involve generation of Hazardous and Non-hazardous Waste. Standard procedure is followed at site during operation and maintenance. Wastewater is treated through wastewater treatment facility, and then used as greening water. During the site visit, CTI validation team was able to confirm that wastewater treatment system are used for waste water treatment and re-use as the greening water. Through interviewing with the local resident, CTI validation team confirmed that waste water were well treated during the construction period. The indicators “air quality” and “water quality and quantity” will be monitored.	Not required
9.5. Hazardous and Non	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and nonhazardous	No	Not applicable for solar power plants.	Not required

hazardous Waste	chemicals and/or materials?		The project reduces fossil fuel consumption and avoid pollutants emission, such as SO ₂ , and NO _x , brought by fossil fuel combustion.	
9.6. Pesticides & Fertilisers	Will the Project involve the application of pesticides and/or fertilisers?	No	NA. As solar power project. Therefore, the Project does not involve the application of pesticides and/or fertilizers.	Not required
9.7. Harvesting of Forests	Will the Project involve the harvesting of forests?	No	The project area was barren land before the project implementation, thus the project does not involve the harvesting of forests.	Not required
9.8. Food	Does the project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	Not applicable for solar project.	Not required
9.9. Animal husbandry	Will the Project involve animal husbandry?	No	This is a large-scale solar power project which is located on barren land therefore does not alter biodiversity and High conservation value areas, and there are no rare and valuable plant and animal species.	Not required
9.10 High Conservation Value Areas and Critical Habitats	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	Being solar project, it does not affect or alter largely intact or HCV ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified. As per the EIA Report of the project activity, it is clear that the project site is not a cultural heritage site. The project has been developed under transparent communication with local communities.	Not required
9.11 Endangered Species	Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	As per the EIA Report, there are no endangered species identified as potentially being present within the Project boundary and the project does not impact other areas where endangered species may be present.	Not required

▪ Principle 3 – Stakeholder Inclusivity

The project is registered as a GS-VER project and a stakeholder consultation has been carried out in Jan. 2014 for the first crediting period.

For renewal of crediting period, a stakeholder consultation was carried out. The stakeholders identified by the project participant were local villagers who are the major population of the particular area, project proponent representatives, O&M staff, and local government staff.

An announcement including the project information is public on local villages by bulletin boards and oral notice by Three Gorges New Energy Jiuquan Power Generation Co., Ltd. to collect comments from local stakeholders during the period from 25/09/2020 to 24/11/2020. By checking photos of announcement posted on bulletin boards through site visit and interview with some local villagers, it is confirmed by CTI validation team that no comments were received up to the date of the completion of the consultation.

Also, an email was sent by the Goldchina Consultancy International Co., Ltd. to GS secretariat, GS Experts and NGOs to collect comments from global stakeholders during the period from 17/12/2020 to 17/02/2021. By checking mail provided by the Goldchina Consultancy International Co., Ltd., it is confirmed that during the period from 17/12/2020 to 17/02/2021, Goldchina Consultancy International Co., Ltd. conducted an online GS stakeholder consultation for the renewal of the crediting period via mail in order to collect the comments from NGOs. No comment has been received up to the date of the completion of the consultation through all the channels. Also after checking the GS4GG PDD, it is confirmed that such content has been included.

Furthermore, based on the interview of the local representatives and checking Grievance expression book in local village, CTI validation team was informed that no complaints against to the project activity was received in the first crediting period by the local stakeholders, no big impact of the project activity was observed. CTI validation team confirmed that stakeholder consultation for the renewal of the crediting period was held by project participants and no comments has been received.

▪ Principle 4 – Demonstration of Real Outcomes

In the registered GS-VER Passport, detailed assessment has been applied to establish the sustainable development matrix under GS Toolkit version 2.2. The SD indicators “air quality”, “quality of employment”, “Quantitative employment and income generation”, “Water quality and quantity” and “other pollutants” are monitoring in the registered GS-VER-Passport.

In the GS4GG PDD for renewal of crediting period, the SD monitoring plan was updated under latest methodology AMS-I.D (version 18.0) and GS4GG requirements as below:

SDG Parameter	Indicator	Monitoring			
SDG 7: Affordable and Clean Energy	Quantity of net electricity generation supplied to the grid in year y	The project applies methodology AMS-I.D version 18.0. The original monitoring plan was updated based on AMS-I.D version 18.0 requirements.			
		Parameters	Description	Measurement method and QA/QC procedures	Assessment conclusion
		EG _{facility,y}	Quantity of net electricity generation supplied to the grid in year y.	The parameter would be calculated as the difference between the measured quantities of the grid electricity export and import.	Consistent with methodology
		2 bi-directional electricity meters (one main meter M1 and one backup meter M1') with accuracy 0.2S installed at the outlet of 35kV switch station are used to monitor the quantity of the grid electricity export and import. The calibration of meters would be conducted by qualified third party based on the requirement of local and national standard.			

		CTI validation team confirms that the monitoring plan contains all necessary parameters which have been clearly described in GS-VER PDD and that the means of monitoring described in the plan complies with the requirements of the methodology. An organizational structure is provided in GS4GG PDD. The functions such as data collection, aggregation, verification, calculation, archiving, as well as the maintenance of equipment etc. have been defined. Quality assurance and quality control procedures for recording, maintaining and data archiving etc. will be ensured according to CDM EB rules. The calibration of the meter will be implemented as per national standard. An emergency treatment process has been defined in GS4GG PDD when the meter is in malfunction. Data management and quality control system are quoted in GS4GG PDD. The monitoring staffs will be trained based on the training program described in GS4GG PDD.
SDG 8: Decent Work and Economic Growth	Quantitative employment and income generation	The validation team checked the HR records and confirms that due to project activity, the salary that employees got are better than local minimum salary level. This parameter will be monitored by HR record during the 2nd crediting period.
SDG 8: Decent Work and Economic Growth	Quality of employment	The training records are maintained on regular basis with annual consolidation. The validation team checked with PP representative and confirms that 8 persons are employed. The validation team also checked and confirmed that the employment opportunities generated for local residents, either temporary or permanent. The training related to O&M, Safety, emergency procedure, safety etc. are provided to employees. Since local people are employed due to project activity, the training given to employees improves the quality of employment.
SDG 13: Climate Action	Emission Reductions	The emission reduction calculation will be done as per the formula mentioned in the GS4GG PDD. As the parameter is subjected to monitoring, the same will be checked during the verification of the project activity. Data / Parameter: Emission Reductions Unit: tCO₂e Source of data: Plant records and ER calculation sheet Measurement methods and procedures: NA Monitoring frequency: Monthly
Safe guarding Principle 9 Environment, Ecology and Land Use	Air quality	The indicator "air quality" will be monitoring during the crediting period and will be checked during the verification. The indicator "air quality" is an indirect parameter of "Total clean and renewable electricity supplied by the Project" measured in order to calculate the concentrations of SO₂ and NO_x, as multiplied by default national emission factor from the Chinese government. This indicator is measured by electricity meter M1 and its backup meter M1'. Based on online data, the the SO₂ and NO_x that could be generated in the baseline scenario are calculated. In the GS4GG PDD (version 01 dated 19/12/2020), the SD parameter "air quality"

		mentioned in the registered GS-VER Passport is not monitored. Therefore, CL 01 was raised and PP was required to clarify the reason. In the GS4GG PDD (02 dated 22/02/2021), the SD parameter “air quality” and its relevant monitoring method has been included. CTI validation team checked the same and confirmed that the monitoring method of this parameter was correct, which is consistent with that in the registered GS-VERpassport and satisfied with GS4GG requirements. Hence, CL 01 was closed.
Safe guarding Principle 9 Environment, Ecology and Land Use	water quality and quantity	The indicator “water quality and quantity” will be monitoring during the crediting period and will be checked during the verification. Wastewater is treated through wastewater treatment facility, and then used as greening water. During the site visit, CTI validation team was able to confirm that wastewater treatment system are used for waste water treatment and re-use as the greening water. Through interviewing with the local resident, CTI validation team confirmed that waste water were well treated during the construction period.
Safe guarding Principle 9 Environment, Ecology and Land Use	Other pollutants	The indicator “Other pollutants” will be monitoring during the crediting period and will be checked during the verification. Domestic solid waste will be collected together and periodically transferred to the local waste disposal plant for further treatment. By checking domestic solid waste collection device, the wasted equipment collecting place as well as interview with stakeholders, CTI validation team was able to confirmed that domestic solid waste are collected together and periodically transferred to the local waste disposal plant for further treatment during operation and construction period.

▪ Principle 5 – Financial Additionality & Ongoing Financial Need

The additionality of the project activity has been demonstrated in-line with “Tool for the demonstration and assessment of additionality”, Version 07.0. All steps of the additionality tool have been demonstrated in the registered GS-VER-PDD and validation report. CTI validation team checked the additionality in GS-VER-PDD and Final validation report <https://registry.goldstandard.org/projects/details/1332> and found the same to be correct and appropriate.

As per the registered GS-VER-PDD, the project start date was 01/08/2013 when the Engineering, Procurement and Construction (EPC) contract (except for solar PV cell modules) was signed. As per 4.1.49 (b) of GS4GG Principles and Requirements version 1.2, retroactive projects shall submit the required documents for preliminary review (time of first submission) within one year of the project start date. PP submitted the requirement documents of the project activity for preliminary review on 17/03/2014, which is within one year of the project start date and therefore, 4.1.49 (b) of GS4GG Principles and Requirements version 1.2 is satisfied.

Even though, the project was registered as GS VER project under GS Toolkit version 2.2, where the time span between submitting the requirement documents for preliminary review (time of first submission) and the project start date was not required. During the registration stage, the prior consideration of revenues from Gold Standard certification has been demonstrated by VVB.

The project activity put into full operation on 08/12/2013. By checking GS website, it is confirmed that GS VERs have been issued for the period from 08/12/2013 to 31/12/2016. Up to now, a total of 32,179 tons of GS VERs have been issued and retired. As confirmed with PP, verification of GS VERs from 01/01/2017 onwards will be conducted. Therefore, CTI confirmed that carbon revenues derived from Gold Standard certification have been playing a very important role in helping project developer to realise SDGs, e.g preserving 8 permanent jobs and providing renewable electricity.

4.5 Re-definition of baseline scenario and any impact of change on the eligibility principles, criteria and requirements

CTI validation team confirms that there have been no changes in the relevant national and/or sectoral regulations on building a solar power project since the previous crediting period. On the other hand, the baseline scenario for the project remains the same as that in the first crediting period according to the outcome of “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” Version 03.0.1 indicated below. According to the PS (Version 02.0), the demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the GHG emission reductions that would have resulted from that scenario.

The following steps from the “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” Version 03.0.1 were applied to assess the continued validity of the baseline and/or to update the baseline at the renewal of a crediting period:

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

The requirement of the CDM executive board requires assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed using the following Sub-steps:

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

The current baseline remains the same as it was in the registered GS4GG PDD.

In China, the Renewable Energy Law has been put into effect since 2006, which encourages the development of renewable energy projects. However, although renewable energy projects have been developed rapidly in recently years, grid connected power generation in China is still dominated by fossil-fuel power plants. As per latest China Energy Statistical Yearbook 2020, fossil fuel fired power generation accounts for 76.0%, 76.0%, 73.4%, 70.4% and 69.3% of total generation of the NWPG in 2015-2019 respectively. There are no new relevant national and/or sectoral policies and/or circumstances in the electricity generation sector applicable to the project activity, in comparison to the time of the submission of the project activity for validation, which would affect the compliance of the current baseline scenario. Hence in the absence of the project activity electricity would still have been generated in the existing fossil fuel power plants or by the addition of new fossil fuel power plants connected to the NWPG.

Step 1.2: Assess the impact of circumstances

For the project activity, the baseline scenario identified at the validation of the project activity was the continuation of the current practice without any investment. The main investment environment or market characteristics especially the feed-in tariff, the policy in terms of market access permit have no significant change. The current practice for the baseline emissions is still the GHG emitted by NWPG: the equivalent electricity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources within the NWPG.

By verifying China Energy Statistical Yearbook 2013, China Energy Statistical Yearbook 2014, China Energy Statistical Yearbook 2015, China Energy Statistical Yearbook 2016, China Energy Statistical Yearbook 2017, China Energy

Statistical Yearbook 2018, it is confirmed that thermal power (which coal is the fuel) still domain the power supply in NWPG which is the same situation when project activity was under validation. Therefore, the main market characteristics have no change.

As the project is under normal operation which is in line with the original design thereby the condition used to determine baseline emissions in the previous crediting is still valid.

The conditions used to determine the baseline emissions in the previous crediting period are not valid: the emission factor calculation of NWPG in the first crediting period is basing on the data of 2010-2012. Before the time of requesting renewal of the crediting period, the China DNA have issued the latest “2019 Baseline Emission Factors for Regional Power Grids in China” on 29/12/2020, so the emission factor of NWPG and all values need to be updated for the second crediting period.

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

Not applicable, as the project does not involved in any continuation of use of current baseline equipment(s) which are equipment of electricity power grid.

Also, the project activity started operation on 08/12/2013 and the design lifetime of the project activity is 20 years, the remain lifetime of the project activity is clearly longer than the second crediting period which is 7 years. Hence, no investment would be involved.

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

The emission factor that was determined only at the start of the previous crediting period is no more valid on account of change in the grid configuration. As per the requirement of AMS-I.D, version 18.0 and the methodological tool “Tool to calculate the emission factor for an electricity system” version 07.0, new data available should be used to revise the baseline scenario and emissions for updating the baseline at the start of the 2nd crediting period. Hence, the emission factor needs to be updated accordingly.

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

Step 2.1: Update the current baseline

As the baseline scenario of the project activity is still sustained in this crediting period, no update would be required.

Step 2.2: Update the data and parameters

Emission factor has been updated based on latest data.

4.6 Any gold standard activity, product and methodology-specific requirements

At the time of registration, the applied methodology of the project was AMS-I.D “Grid connected renewable electricity generation” (version 17.0).

The GS4GG PDD for renewal of the crediting period applied the latest available version of the same methodology AMS-I.D, version 18.0, which is valid from 28/11/2014 on-wards, hence it meets the condition that for renewal of the crediting period, the methodology should not be changed.

The applicability of the methodology was re-assessed based on the knowledge of the project from the initial validation, subsequent validation and the confirmation from the PPs.

By checking the Feasibility study report (FSR) and site visit, CTI validation team was able to confirm that:

- The project activity is a new grid-connected renewable energy power generation project activity that is a greenfield power plant;

- The project activity is a newly built solar power plant, which does not involve switching from fossil fuels to renewable energy.

Therefore, CTI validation team confirms the project meets each of the applicability conditions of the methodology; it also meets all the other stipulations and limitations mentioned in the other sections of the methodology; the continued validity of the baseline is assessed and the emissions which would be resulted from the baseline scenario are updated at the start of the 2nd crediting period, as per the requirements of AMS-I.D, version 18.0.

4.7 Demonstration of OFN compliance to latest version of applied methodology

Refer to section 4.4, principle 5 of this report.

5 Estimation of emission reductions for the crediting period

The calculations of baseline emissions, project emissions, leakage and emission reductions have been checked by CTI validation team. The parameters and equations presented in the GS4GG PDD and further documentation have been compared with the information and requirements presented in applied methodology and respective tools.

(1) BASELINE EMISSION

The calculation of the baseline emissions followed the procedures described in the methodology AMS-I.D (version 18.0). Baseline emissions are calculated as:

As per the methodology AMS-I.D version 18.0 that the baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The baseline emissions are calculated by the Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh) ($EG_{PJ,y}$) multiplied by the Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$).

Because the project activity is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, the $EG_{PJ,y}$ equals to the Quantity of net electricity generation supplied to the grid in year y (MWh) ($EG_{facility,y}$).

The Combined margin CO₂ emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$) is calculated in a transparent and conservative manner as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the steps prescribed in the “Tool to calculate the emission factor for an electricity system”, version 07.0.0.

The NWPG is selected as the electricity system of the project activity. Simple OM method (method a) is applied for calculating OM emission factor because according to the data from China Electric Power Yearbook 2014-2018, the low-cost/must-run resources in the latest five years (2013-2017) constitute less than 50% of the total grid generation. Ex-ante option with a 3-year generation-weighted average is chosen to account for $EF_{grid,OMsimple,y}$. Option B of simple OM is selected for the calculation 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 (option A was denied because necessary data for Option A is not available). As a result, $EF_{grid,OMsimple,y}$ is calculated to be 0.8922 tCO₂e/MWh as a generation weighted average for the year 2015-2017.

Because plant specific fuel consumption and electricity generation data are not publicly available in China, the Guidance caused by DNV's request for deviation of Chinese project activities for the baseline methodology AM0005 has been applied for calculating the build margin (BM) emission factor of this project activity:

- Based on the most recent years energy balance of the NWPG, calculating the proportions of CO₂ emissions from the coal-fired, oil-fired and gas-fired power plants in total CO₂ emissions of thermal power plants and taking them as weight of each type of plant in the calculations;
- Based on the most advanced commercialized technologies which applied by the coal-fired, oil-fired and gas-fired power plants, calculating the emission factor of thermal power plants in NWPG. This approach is more conservative as it assumes all recently built plants have the fuel efficiency as that of the most advanced commercialized technologies;
- Calculating the EF_{grid,BM,y} through multiplying the emission factor of thermal power plants by the percentage share of thermal power plants installed capacity addition within all recently built installed capacity. The proper year is selected so that it is the closest time when the last 20% of installed capacity was built.

As a result, the EF_{grid,BM,y} is calculated to be 0.4407 tCO₂e/MWh.

Based on the weight w_{OM} and w_{BM} of 0.75:0.25 by default for the second crediting period, the combined margin emission factor is calculated to be 0.779325 tCO₂e/MWh.

The annual net electricity supplied to the grid is 14,440 MWh which is in line with the original design of the project. It's confirmed that the estimation of the figure is reasonable. Thereby, the baseline emissions could be calculated to be 14,440 MWh * 0.779325 tCO₂e/MWh = 11,253 tCO₂e. CTI validation team confirmed that the remission reductions calculation is corrected in the GS-VER PDD.

The values of the main parameters for calculating combined emission factor (EF_{grid,CM,y}) are crosschecked by CTI validation team and the data sources are listed in below table:

Data and Parameters	Description	Data source
EF _{grid,OM,y}	CO ₂ emission factor of operation margin of NWPG in 2017.	2019 Baseline Emission Factors for Regional Power Grids in China
EF _{grid,BM,y}	CO ₂ emission factor of Built margin of NWPG in 2017.	2019 Baseline Emission Factors for Regional Power Grids in China

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

(2) Project emissions

The project is a solar power project. Therefore, the project emission is considered as zero based on AMS-I.D, version 18.0. Therefore, PE_y = 0 tCO₂e.

(3) Leakage

According to the methodology, the project activity leakage does not take into account, then no leakage according to AMS-I.D, leakage is zero.

(4) Emission reductions

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average ex-ante estimation of emission reduction conservatively calculated to be 11,253 tCO₂e per year for the selected 7 years crediting period. Total emission reductions during the second crediting period are estimated to be 78,771 tCO₂e.

The CTI validation team had checked for double counting by reviewing the following relevant registries that could hold RECs from the considered project activity: <http://cdm.unfccc.int>, <http://www.terra.org/>, <http://cdm.ccchina.gov.cn/ccer.aspx>, <https://registry.goldstandard.org/projects>, <http://www.irecstandard.org/>, <http://www.greenenergy.org.cn/>.

It's confirmed the project had not been registered as CDM project or under other voluntary carbon crediting scheme. Also, CTI validation team had checked the declaration PP provided that stated no RECs had been being issued for the project under consideration for Gold Standard VERs. Based on the above evidence, CTI validation team confirmed that no RECs had been being issued for the project under consideration for Gold Standard VERs.

CTI validation team cross-checked the whole calculation process of emission reductions in the GS4GG PDD against referenced sources and applied methodology and tools. Based on the information reviewed, it can be confirmed that in the GS4GG PDD (Version 2.1 dated 07/05/2022), the sources used are correctly quoted and interpreted, the calculation processes are complete and replicable, and the calculation outcomes are reasonable and accurate.

In conclusion, CTI confirms that:

- (a) All assumptions and data used by the project participants are listed in the GS4GG PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the GS4GG PDD;
- (c) All values used in the GS4GG PDD are considered reasonable in the context of the proposed GS project activity;
- (d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the GS4GG PDD.

6 Validation opinion

Shenzhen CTI International Certification Co., Ltd (CTI) has performed a validation for renewal of the crediting period of Dongdongtan 9MWp Solar PV Project (GS ID: 2680) and hereafter referred to as "the project". The validation was performed in accordance with Gold Standard GS4GG for GS-VERs, the UNFCCC criteria for the Clean Development Mechanism and host country criteria.

The validation scope is defined as an independent and objective review of the Gold Standard Voluntary Emission Reduction project design document (GS4GG PDD (Version 2.1 dated 07/05/2022)), the project's baseline update, monitoring plan and other relevant documents, and consisted of the following three phases:

1. Desk review of the project design and baseline and monitoring plan;
2. On-site visit and interviews with project stakeholders;
3. Resolution of outstanding issues and the issuance of the final validation report and opinion.

After checking Verification Report of previous monitoring period, CTI Validation Team identified no FARs. In the course of the validation, 1 Clarification Request (CL), 1 Corrective Action Request (CAR) or Forward Action Request (FAR), were raised for the proposed GS project activity in relation to all relevant Gold Standard requirements including GS4GG Principles & Requirements, Version 1.2; GS4GG Activity Requirements: RE Activity Requirements, Version 1.2; Gold Standard for the Global Goals Requirements & Guidelines for Transition of Projects from Previous Versions of the Standard, Version 1.1 and Annex Z Gold standard procedure for the renewal of a crediting period. Until issuance of this version of validation report, the raised CL and CAR was successfully closed.

The review of the GS4GG PDD (Version 2.1 dated 07/05/2022) and additional background documents, the subsequent follow up interviews, together with the review of comments by Parties and Stakeholders, have provided CTI with sufficient evidence to confirm that the project has satisfied the stated criteria.

The validation covered all project components and issues that need to be validated for renewal of the crediting period as a GS project. In our opinion, CTI hereby confirms that the project correctly applied the latest version of baseline and monitoring methodology AMS-I.D, version 18.0 and meets relevant UNFCCC and Gold Standard requirements for renewal of the crediting period.

The first 7-year renewable crediting period is from 08/12/2013 to 07/12/2020. The PP is applying for a second crediting period started from 08/12/2020 to 07/12/2027. CTI hereby requests for renewal of the crediting period for the project, which is expected to achieve annual average emission reductions of 11,253 tCO₂e, total emission reductions of 78,771 tCO₂e, within the 7 years at the 2nd crediting period.

APPENDIX A: RESOLUTION OF CORRECTIVE ACTION REQUEST/CLARIFICATION REQUEST/FORWARD ACTION REQUEST

Table 1. CL from this validation

CL ID	01	Section no.	4.4	Date: 08/01/2021
Description of CL				
In the GS4GG PDD (version 01, dated 19/12/2020) for renewal of crediting period, the SD parameter “air quality” mentioned in the registered GS-VER Passport is not monitored. PP was required to clarify the reason.				
Project participant response				Date: 22/02/2021
The GS4GG PDD (Version 2.1 dated 07/05/2022) has been modified by adding the SD parameter “air quality” and its corresponding monitoring method.				
Documentation provided by project participant				
GS4GG PDD (Version 2.1 dated 07/05/2022)				
Validation conclusion				Date: 07/05/2022
By checking the GS4GG PDD (Version 2.1 dated 07/05/2022), it is confirmed that the SD parameter “air quality” and its relevant monitoring method has been included, which is consistent with that in the registered GS-VERpassport and satisfied with GS4GG requirements. Therefore, the CL 01 was closed.				

Table 2. CAR from this validation

CAR ID	01	Section no.	4.4	Date: 08/01/2021
Description of CAR				
The SDG impact of SDG 8 “Decent Work and Economic Growth” was not fully estimated in the GS4GG PDD (Version 01 dated 19/12/2020). Except the number of working opportunity created by the project activity, the other indicators such as the quantity of training, the kind of training, income level, as well as the corresponding monitoring method of these indicators should be described in the PDD.				
Project participant response				Date: 22/02/2021
The quantity of training, the kind of training, income level, as well as the corresponding monitoring method of these indicators has been described in the GS4GG PDD (Version 2.1 dated 07/05/2022).				
Documentation provided by project participant				
GS4GG PDD (Version 2.1 dated 07/05/2022)				
Validation conclusion				Date: 07/05/2022
By checking the GS4GG PDD (Version 2.1 dated 07/05/2022), it is confirmed that the quantity of training, the kind of training, income level of employees, as well as the corresponding monitoring method of these indicators has been described in the GS4GG PDD (Version 2.1 dated 07/05/2022). Therefore, the CAR01 was closed.				

Table 3. FAR from this validation

FAR ID	xx	Section no.		Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
Validation conclusion				Date: DD/MM/YYYY

APPENDIX B: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Mr. Ziqi LI

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

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

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

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

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2018

Mr. Li Ziqi

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

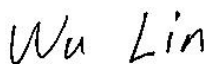
Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry
SS 13: Waste handling and disposal	TA 13.1: Solid waste and wastewater
	TA 13.2: Manure

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

Approved by:

Wu LIN



Technical Competent Manager

Shenzhen, 01/01/2021

Ms. Guolian WANG

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

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

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry

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

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 10/10/2019