



**Verified Carbon
Standard**

GANSU GANZHOU DISTRICT NANTAN PHASE I 50MWp SOLAR PHOTOVOLTAIC POWER PROJECT



Document Prepared By LGAI Technological Center, S.A. (Applus+
Certification)

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Prepared By	LGA Technological Center, S.A. (Applus+ Certification)
Contact	Campus UAB – Ronda de la Font del Carme, s/n

	08193 Bellaterra – Barcelona (Spain) Tel.:+34 93 567 20 08 Fax.:+34 93 567 20 01 www.appluscertification.com agustin.calle@applus.com carla.debat@applus.com
Approved By	LGAI Technological Center S.A. (Applus+ Certification) B.U. Managing Director: Juan Sendín Caballero
Work Carried Out By	Lead Auditor / Technical Expert: Denny Xue Technical Reviewer: Simon Shen

Summary:

LGAI Technological Center, S.A. (hereafter referred to as “Applus+ Certification”) has been commissioned by Climate Bridge (Shanghai) Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” (UNFCCC Ref. No. 9667, VCS Ref. No. 1453, hereafter referred to as “the project activity”) reported in the monitoring report /1/ during monitoring period 20/12/2012 to 19/12/2018.

The project activity was registered as a CDM project activity on 27/06/2013 which is available at <https://cdm.unfccc.int/Projects/DB/China%20Quality1372055565.71/view>. Later the project has been registered as a VCS project which is available at https://www.vcsprojectdatabase.org/#/project_details/1453.

The project activity is a solar power project located at Southern area of Ganzhou District Zhangye City, Gansu Province, People’s Republic of China which is to use solar resource for electricity generation. The installed capacity of the project activity is 50 MWp, consisting of 70,000 sets of polycrystalline silicon modules with unit capacity of 290 W and another 105,000 sets of polycrystalline silicon modules with unit capacity of 285 W. The average annual power delivered to the grid by the project is expected to be 71,125 MWh in the first 7 years. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants Northwest China Power Grid (NWCPG). It’s estimated that the proposed project could achieve GHG emission reductions of 67,177 tCO₂e annually in the first 7 years.

The purpose and scope of this verification is to ensure that reported emission reductions are complete and accurate in accordance with applicable VCS standards and relevant UNFCCC requirements in order to be certified. A desk review and a site visit have been conducted to verify the data submitted in the monitoring report /1/. Applus+ Certification confirms the following has been reviewed:

- Monitoring plan included in the registered PD /3/ version 02 dated 02/06/2015;
- Validation report No. 8000448403 - 15/088 /04/, version 01, completed on 02/06/2015;
- Approved methodology, ACM0002 /9/, version 13.0.0, dated 11/05/2012;

- VCS standards and guidance version 4.0, as well as relevant UNFCCC requirements;
- All information and references relevant to the project activity's resulting in emission reductions.

During this verification, no finding was identified related to the monitoring, implementation or operations of the project activity in relation to relevant VCS standards, guidance and UNFCCC requirements and relevant host party criteria and the applied baseline and monitoring methodology etc.

Applus+ Certification confirms that the project is implemented in accordance with the registered PD /3/. The monitoring plan complies with the applied methodology ACM0002 /7/ version 13.0.0 and the monitoring has been carried out in accordance with the monitoring plan in the registered PD /3/. The monitoring system is in place and the emission reductions are calculated without material misstatements. The level of assurance of the verification is reasonable. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ Certification confirms that the implementation of the project has resulted in 306,461 tCO₂e emission reductions during period 20/12/2012 to 19/12/2018.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center, S.A. has been commissioned by Climate Bridge (Shanghai) Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” (UNFCCC Ref. No. 9667, VCS Ref. No. 1453) reported in the Monitoring Report /1/ during monitoring period 20/12/2012 to 19/12/2018.

LGAI Technological Center, S.A. as the verification body of the project activity has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2007.

The objective of verification is to have an independent review and ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registration of VCS project. Certification is the written assurance by the DOE that, during a specific time period, a proposed VCS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification is to verify and certify emission reductions, reported for the “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” in China for the period 20/12/2012 to 19/12/2018.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the registered PD, the Project’s baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 4.0 requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting towards the client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the Project monitoring towards reductions in the GHG emissions.

1.3 Level of Assurance

The verification report is based on the VCS-PD, the VCS Monitoring Report (MR), supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment.

The verification conclusion is assured a reasonable level of assurance.

1.4 Summary Description of the Project

Project title	Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project
UNFCCC reference number	9667
VCS reference number	1453
Project Participants	Gansu Heihe Hydropower New Energy Development Co., Ltd. (Project Owner, host country, P. R. China)
Location of the project	Southern area of Ganzhou District Zhangye City, Gansu Province, People's Republic of China Central geographic coordinates: East longitude: 100°11'42.58" - 100°13'48.48" North latitude: 38°50'11" - 38°51'00"
Project start date	Construction start date: 08/05/2012 Operation start date: 20/12/2012
Date of registration as CDM project	27/06/2013
Version of registered CDM PDD and VCS PD	Version 02, dated 21/05/2013 (CDM PDD) Version 02, dated 02/06/2015 (VCS PD and basis for verification)
Monitoring period	20/12/2012 to 19/12/2018
First monitoring report	Version 01 dated 07/11/2019
Final monitoring report	Version 04, dated 22/02/2020
Applied Methodology/Version	ACM0002, version 13.0.0, dated 11/05/2012
Scope/Technical Area	1/1.2

The project activity is a solar power project located at Southern area of Ganzhou District Zhangye City, Gansu Province, People's Republic of China which is to use solar resource for electricity generation. The installed capacity of the project activity is 50 MWp, consisting of 70,000 sets of polycrystalline silicon modules with unit capacity of 290 W and another 105,000 sets of polycrystalline silicon modules with unit capacity of 285 W. The average annual power delivered to the grid by the project is expected to be 71,125 MWh in the first 7 years. The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants Northwest China Power Grid (NWCPG). It's estimated that the proposed project could achieve GHG emission reductions of 67,177 tCO₂e annually in the first 7 years.

The project activity was registered as a CDM project activity on 27/06/2013 which is available at <https://cdm.unfccc.int/Projects/DB/China%20Quality1372055565.71/view>. Later the project has been registered as a VCS project which is available at https://www.vcsprojectdatabase.org/#/project_details/1453.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS Standard version 4.0, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant UNFCCC requirements and applying standard auditing techniques.

Applus+ Certification completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

Applus+ Certification verified the implementation of the monitoring plan and the data presented in the Monitoring Report /1/ for the period in question. This involved a site visit and a desk review of the Monitoring Report. This Verification Report describes the findings of this assessment.

The information of the assessment team is included in below:

Assessment team

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in Applus+ Certification. The composition of assessment team has to be approved by the Applus+ Certification ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules as below:

- Leader Auditor (LA)
- Auditor (A)/ Auditor Trainee (AiT)

- Technical Reviewer (TR)
- Technical Experts (TE)

Name	Qualification	Coverage of scope	Coverage of Technical Area	Host country experience
<i>Denny Xue</i>	<i>LA/TE</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>
<i>Simon Shen</i>	<i>TR</i>	<i>Y (1.2)</i>	<i>Y</i>	<i>Y</i>

Denny Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is a lead auditor appointed by Applus+ Certification for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ Certification, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years.

2.2 Document Review

The VCS monitoring report /1/ version 01 dated 07/11/2019, Version 04 dated 22/02/2020 and the emission reduction calculations spreadsheet /2/, were assessed as part of the verification. In addition, the registered PD /3/ version 02 dated 02/06/2015 in particular the baseline estimations and the monitoring plan, and the VCS gap validation report /04/ version 02 dated 02/06/2015, as well as relevant documents, were reviewed. A detailed documents reviewed are listed in Annex 1 of the report.

2.3 Interviews

The key personnel interviewed are summarized in the table below:

Interviewed personnel	Role	Organization	Subject
Mr. Liu Mengde	Manager	Gansu Heihe Hydropower New Energy Development Co., Ltd.	Operation of the project activity; Implementation of the monitor plan of the project activity; Data collection and data achievement; Calibration of meters and equipment maintenance.
Ms. Bao Mingxin	Project Manager	Climate Bridge (Shanghai) Ltd.	Data collection and ER calculation.
Ms. Chen Genrong	Project Manager	Climate Bridge (Shanghai) Ltd.	

2.4 Site Inspections

The assessment team performed the on-site verification (Southern area of Ganzhou District Zhangye City, Gansu Province, People's Republic of China) on 25/11/2019. The interviewed personnel and objective are listed in above table.

2.5 Resolution of Findings

As an outcome of the verification process, the team can raise different types of findings.

Where a non-conformance arises the assessment team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- Modifications to the implementation, operation and monitoring of the project activity has not been sufficiently documented by the project participants;

c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

The assessment team shall raise a Clarification Request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

All CARs and CLs raised during verification shall be resolved prior to submitting a request for issuance.

There is no CARs and CLs raised for this monitoring period for the project.

2.5.1 Forward Action Requests

None FAR was raised during the verification process. Also there are no remaining from former verification and validation.

2.6 Eligibility for Validation Activities

Not applicable as LGAI Technological Center, S.A. holds the accreditation for the validation and verification for projects under scope 1.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Through reviewing the registered PD /3/ and validation report /4/ at UNFCCC website <https://cdm.unfccc.int/Projects/DB/China%20Quality1372055565.71/view>, it was validated that the project has been registered as a CDM project on 27/06/2013 with reference No. 9667. Also, after checking http://www.vcsprojectdatabase.org/#/project_details/1453, it is confirmed that the project also registered as a VCS project. By checking <http://www.irecstandard.org/>, it is confirmed the project has been registered as an I-REC project. The project does not participate in the other emissions trading program by checking public information on Internet and interviewing with project owner.

During the period from 20/12/2012 to 19/12/2022 as the crediting period, the project would claim for either CERs, VCUs and I-RECs, however CERs, VCUs and I-RECs would not been claimed together in the same period confirmed by checking statement issued by project owner.

Therefore, Applus+ Certification consider the project is eligible to participate under the VCS Program as there is no double counting for the emission reduction during any period.

3.2 Methodology Deviations

Not applicable as not deviation for methodology.

3.3 Project Description Deviations

The project was registered under CDM scheme on 27/06/2013 with reference number of 9667. According to CDM standard, the crediting period is 01/07/2013 - 30/06/2020, which could be renewed twice.

Then the project was registered under VCS scheme in 2015. In the registered PD, as the project commission date is 20/12/2012, then the first crediting period of the project has been chosen as 20/12/2012 – 19/12/2019. While according to VCS standard Version 3 which was valid at register time, the project crediting period is allowable for 10 years and could be renewed twice. Therefore, the first crediting period of project has been determined as 20/12/2012 to 19/12/2022.

The deviation has no impact for the applicability of the methodology, additionality or the appropriateness of the baseline scenario and meet all appropriate rules and requirements of VCS standard.

3.4 Grouped Project

Not applicable as not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

By means of on-site visit, the assessment team confirms that all physical features of the proposed project activity proposed in the registered PD /3/ are in place and the PP has operated the project as per registered PD /3/. The installed capacity of the project is 50 MWp, consisting of 70,000 sets of polycrystalline silicon modules with unit capacity of 290 W and another 105,000 sets of polycrystalline silicon modules with unit capacity of 285 W. The electricity generated is transmitted to the Gansu Power Grid via Heihe 110kV substation, which was then exported to the NWCPG. The project activity was expected to supply 71,125 MWh of electricity to the grid annually in the first 7 years. The construction of the project started on 08/05/2012 and the commissioning time was 20/12/2012 verified by site visit interview and checking registered PD. There are no changes on the key equipment and technology since the validation of the project. No special event which would affect the monitoring of the project has been observed during the monitoring period. The implementation of project is in line with the description of registered PD.

The emission reduction resulted from the project during this monitoring period would apply for VCUs. The project only applies CERs, VCUs and I-RECs under CDM, VCS and I-REC (no other form of environmental credit) and no rejection from CDM, VCS and I-REC occurs¹. There are no CDM issuance up to the completion time of verification report during this monitoring period and there are surely no other forms of environmental credits applied or issued for the project activity. The project would contribute to sustainable development in Job creation, Reduction in GHG emissions, Reduction of fossil fuel use and Increase of power supply aspects confirmed during site visit.

The technical parameters have been verified with the nameplates /9 / as below:

Equipment	Parameters	Unit	Value	Module	Quantity
Solar Modules	Rated power	Wp	290	JKM- 290P-72	70,000
	Operating voltage	V	36.4		
	Operating current	A	7.97		
	Lifetime	Year	25		
	Rated power	Wp	285	JKM285P-72	105,000
	Operating voltage	V	36		
	Operating current	A	7.92		
	Lifetime	Year	25		

¹ During 01/01/2015 - 31/12/2015 and 01/01/2016 - 31/12/2016, some I-RECs has been applied by the project. The detail progress has been presented in the MR.

Inverter	Rated power	kW	500	SG500KTL	80
	AC voltage	V	270		
	DC current	A	1,176		
	Lifetime	Year	25		
	Rated power	kW	500	EHE- N500KTL	20
	AC voltage	V	270		
	DC current	A	1,070		
	Lifetime	Year	25		

By comparing the actual ER claimed in this monitoring period with the estimate in the registered PD, the actual emission reductions (306,461 tCO₂e) are lower than what is stated in the registered PD (i.e. 391,567 tCO₂e, the I-REC part has been excluded) which surely will not lead to the overestimation of VERs.

The assessment team confirmed that there is no proposed or actual change to the project design during this monitoring period.

All required equipments and procedures are available and implemented in an appropriate manner.

All necessary monitoring instruments are installed. All required instruments including standby and operating procedures for the same have been implemented in an appropriate manner.

The project is completely operational and the same has been confirmed on-site. Neither mistakes nor malfunction on main meters have been observed during this monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

By checking the EIA summary and conclusion provided in the registered PD, it is confirmed that solar power is green power and the impact caused by solar power on the surrounding ecosystem and residents, water, and atmosphere etc. is very little, there would be no net harm caused due to the project activity. Also, the EIA of the project are approved by the government.

Also, no potential environment or social economic matter was found during the site visit. The project is renewable energy project and thus no net harm observed in air or water quality on-site.

4.2.2 Local Stakeholder Consultation

The local stakeholder's meeting was held in Ganzhou District, Zhangye City on 15/08/2012 - 16/08/2012. 30 participants attended the meeting including local residents, builders and members of the local authorities. The project owner introduced the proposed project, and then a survey was arranged through a one-page questionnaire, which was designed to be easily filled in. The opinions expressed by the stakeholders were recorded and are available on request.

The stakeholder meeting and the survey showed that the proposed project receives strong support from the local community. They all believe the proposed project will promote local economic development and agree with the project development and construction.

Communications with Local stakeholders was being carried out at periodic intervals. There are no negative comments received for the project.

All such conclusion has been verified through site visit and check registered PD.

4.3 AFOLU-Specific Safeguards

Not applicable as non-AFOLU project.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PD /3/. All parameters were monitored and determined as per the monitoring plan which is listed in below table:

Data / Parameter:	EG _{facility,y}
Data unit:	MWh
Description:	Quantity of net electricity generation supplied by the project plant to the grid in year y
Purpose of the data:	Calculation of baseline emissions
Parameter value:	348,888.79 ²
Source of data used:	Quantity of net electricity generation supplied by the project plant to the grid in year y (EG_{facility,y}) are calculated by The quantity of electricity supplied by the project to the grid (EG_{export,y}) and The quantity of electricity delivered to the project from the grid (EG_{import,y}) as below: $EG_{facility,y} = EG_{export,y} - EG_{import,y}$ For both The quantity of electricity supplied by the project to the grid (EG_{export,y}) and The quantity of electricity delivered to the project from the grid (EG_{import,y}) are all sourced from Meter Reading Records (MRRs) /10/ issued by the project owner, Electricity Transaction Notes (ETNs) /11/ issued by power grid company covering monitoring period.
Information flow:	For The quantity of electricity supplied by the project to the grid (EG_{export,y}): 2 bidirectional electricity meters (one as main (M1) and another as backup (M2)) installed at Hehei 110kV substation and project site separately were measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 2 bidirectional electricity meters' readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings of main meter then transcribes the data into Electricity Transaction

² The electricity generation for I-REC has been excluded which is 11,140 MWh and 3,676 MWh respectively in 2015 and 2016 confirmed by checking I-REC statement /14/.

	Notes (ETNs) then after the confirmation of the project owner for the ETNs, the project owner will issue the invoice. For The quantity of electricity delivered to the project from the grid ($E_{import,y}$): 2 bidirectional electricity meters (one as main (M1) and another as backup (M2)) installed at Hehei 110kV substation and project site separately were measured continuously, recorded monthly and archived electronically. At 24:00 hr of the last day of each month, the staff from project owner will record 2 bidirectional electricity meters' readings and form Meter Reading Records (MRRs). The staff from power grid company will record the meter readings of main meter then transcribes the data into Electricity Transaction Notes (ETNs) then after the confirmation of the project owner for the ETNs, the power grid company will issue the invoice. The data for MRRs and ETNs have been sent to the CDM consulting company for reporting of GHG emission reduction. The conservative one would be used for ER calculation.																													
Monitoring method, frequency and equipments:	The parameter was measured continuously and recorded monthly by 2 bi-direction electricity meters installed at Hehei 110kV substation and project site separately during the monitoring period verified by site visit. See below for the information of 2 bi-direction electricity meters and verified by site visit and checking calibration certificates /12/: <table><tr><th>Meter</th><th>Type</th><th>Serial Number</th><th>Accuracy</th></tr><tr><td>Main Meter (M1)</td><td>MK6E</td><td>210140205</td><td>0.2s</td></tr><tr><td>Backup Meter (M2)</td><td>MK6E</td><td>210140204</td><td>0.2s</td></tr></table> The type, serial number and accuracy have been confirmed by site visit.	Meter	Type	Serial Number	Accuracy	Main Meter (M1)	MK6E	210140205	0.2s	Backup Meter (M2)	MK6E	210140204	0.2s																	
Meter	Type	Serial Number	Accuracy																											
Main Meter (M1)	MK6E	210140205	0.2s																											
Backup Meter (M2)	MK6E	210140204	0.2s																											
Calibration:	The calibration information is shown as below /12/: <table><tr><th>Meter</th><th>Calibration date</th><th>Valid until</th></tr><tr><td rowspan="7">Main Meter (M1)</td><td>13/11/2012</td><td>12/11/2013</td></tr><tr><td>28/10/2013</td><td>27/10/2014</td></tr><tr><td>27/10/2014</td><td>26/10/2015</td></tr><tr><td>21/10/2015</td><td>20/10/2016</td></tr><tr><td>21/10/2016</td><td>20/10/2017</td></tr><tr><td>16/10/2017</td><td>15/10/2018</td></tr><tr><td>15/10/2018</td><td>14/10/2019</td></tr><tr><td rowspan="5">Backup Meter (M2)</td><td>13/11/2012</td><td>12/11/2013</td></tr><tr><td>28/10/2013</td><td>27/10/2014</td></tr><tr><td>27/10/2014</td><td>26/10/2015</td></tr><tr><td>21/10/2015</td><td>20/10/2016</td></tr><tr><td>21/10/2016</td><td>20/10/2017</td></tr></table>	Meter	Calibration date	Valid until	Main Meter (M1)	13/11/2012	12/11/2013	28/10/2013	27/10/2014	27/10/2014	26/10/2015	21/10/2015	20/10/2016	21/10/2016	20/10/2017	16/10/2017	15/10/2018	15/10/2018	14/10/2019	Backup Meter (M2)	13/11/2012	12/11/2013	28/10/2013	27/10/2014	27/10/2014	26/10/2015	21/10/2015	20/10/2016	21/10/2016	20/10/2017
Meter	Calibration date	Valid until																												
Main Meter (M1)	13/11/2012	12/11/2013																												
	28/10/2013	27/10/2014																												
	27/10/2014	26/10/2015																												
	21/10/2015	20/10/2016																												
	21/10/2016	20/10/2017																												
	16/10/2017	15/10/2018																												
	15/10/2018	14/10/2019																												
Backup Meter (M2)	13/11/2012	12/11/2013																												
	28/10/2013	27/10/2014																												
	27/10/2014	26/10/2015																												
	21/10/2015	20/10/2016																												
	21/10/2016	20/10/2017																												

		16/10/2017	15/10/2018
		15/10/2018	14/10/2019
	The calibration was conducted by accredited third parties which is Electric energy Measuring and Testing centre of Gansu Electric Power Science Research Institute was accredited by Quality and Technical Supervision Bureau of Gansu valid from 26/01/2011 to 28/09/2022 /13/.		
QA/QC procedure:	Data record will be archived for a period of 2 years after the crediting period to which the records pertain.		
Means of verification:	Data of the parameter was verified by checking MRRs and ETNs. All data is in line with MRRs and ETNs; Information flow was verified by checking MRRs and ETNs, and all information are consistent; Monitoring method was verified by site visit, checking calibration certificates, all monitoring method meets the description in the PD; Calibration was verified by checking calibration certificate and Accreditation certificate, all calibration of monitoring equipment meets the requirement indicated in the PD.		

Parameters available at validation stage:

Below data has been verified against the data sources and the PD.

Parameter title	Description	Data	Source
EF _{grid,CM,y} *	Baseline emission factor of NWCPG in the monitoring period.	0.8784	Notification on 2012 baseline emission factors for regional power grids in China, issued by China on 15/10/2012 /15/.

*EF_{grid,CM,y} are not directly available at validation but calculated based on other parameter in the PD available at validation, therefore in this monitoring period, only EF_{grid,CM,y} are included and rest of parameter are either used to calculate EF_{grid,CM,y} or not used in the MR.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PD /3/ version 02 dated 02/06/2015.

As a result of verification of the ER calculation process, the assessment team confirmed that all the parameters required for the determination of the emission reductions have been included in the MR Report and ER Calculation Spreadsheet /2/ and are consistent with the applied methodology ACM0002 version 13.0.0 and the monitoring plan contained in the registered PD. The parameters are complete in this monitoring period.

After verifying the reported figures with the raw data sources, it's confirmed that the values of the parameters from the raw data sources are consistent with those quoted in the ER Calculation Spreadsheet and the MR Report. The verification process for the same has been clearly described above in section 4.4 of the report.

4.6 Non-Permanence Risk Analysis

Not applicable as a renewable project.

5 VERIFICATION CONCLUSION

Applus+ Certification has been commissioned by Climate Bridge (Shanghai) Ltd. to perform the verification of greenhouse gas emission reductions of the project activity “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” (UNFCCC Ref. No. 9667, VCS Ref. No. 1453).

The management of Gansu Heihe Hydropower New Energy Development Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the registered PD /3/, version 02 dated 02/06/2015.

Our verification approach was based on the requirements as defined under the applicable VCS standards and relevant UNFCCC requirements. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is implemented and operated as per the registered PD;
- the monitoring plan in registered PD is as per the applied methodology;
- the monitoring complies with the monitoring plan in the registered PD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS and CDM requirements;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for “Gansu Ganzhou District Nantan Phase I 50MWp Solar Photovoltaic Power Project” during the monitoring period 20/12/2012 to 19/12/2018 as reported in Monitoring Report, prepared on the basis of the project’s Monitoring Plan are fairly stated. Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: From 20/12/2012 to 19/12/2018 (divided into 7 vintage periods). Verified GHG emission reductions or removals in the above reporting period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2012	437	0	0	437
2013	74,304	0	0	74,304
2014	53,713	0	0	53,713
2015	38,785	0	0	38,785
2016	40,741	0	0	40,741
2017	44,725	0	0	44,725
2018	53,756	0	0	53,756
Total	306,461	0	0	306,461

APPENDIX 1: REFERENCE LIST

1. Monitoring report, version 01, dated 07/11/2019; Version 04, dated 22/02/2020
2. ER calculation spreadsheet
3. Registered PD, version 02, dated 02/06/2015
4. Validation report, No. 8000448403 - 15/088, version 01, completed by TUV-Nord
5. VCS standard version 4.0, dated on 19/09/2019
6. Statement issued by project owner
7. Approved methodology ACM0002, version 13.0.0, dated 11/05/2012
8. CDM Monitoring procedure
9. Nameplate of the equipment
10. Meter Reading Record (MRRs) for Main Meter
11. Electricity Transaction Notes covering the monitoring period
12. Calibration certificates of meters covering the whole monitoring period issued by Electric energy Measuring and Testing centre of Gansu Electric Power Science Research Institute
13. Accreditation certificates for Electric energy Measuring and Testing centre of Gansu Electric Power Science Research Institute issued by Quality and Technical Supervision Bureau of Gansu
14. I-REC statement
15. Notification on 2012 baseline emission factors for regional power grids in China, issued by China on 15/10/2012