



THREE GORGES NEW ENERGY JIUQUAN CO., LTD GUAZHOU 100MW SOLAR POWER PROJECT



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Project Title	Three Gorges New Energy Jiuquan Co., Ltd Guazhou 100MW Solar Power Project
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Three Gorges New Energy Jiuquan Co., Ltd Guazhou 100MW Solar Power Project (hereinafter referred to as "the project") is a grid-connected solar photovoltaic power plant with installed capacity of 100.39¹ MWp, which is located in Solar Power Zone, Guazhou County, Jingyuan City, Gansu Province of China. Electricity generated by the project replaces part of that generated by fossil-fuel dominated Northwest Power Grid (NWPG), thus the project achieves GHG emission reductions.

The timeline of the project is as below:

Start date of construction	22-Sep-2013
Start date of commissioning	30-Dec-2013
Start date of the crediting period	

The average annual power delivered to the grid by the project is expected to be 151,855 MWh in the first 10-year crediting period. During the first crediting period, the annual average GHG emission reductions are estimated to be 126,206 tCO₂e, while the total GHG emission reductions are estimated to be 1,262,062 tCO₂e.

The actual emission reductions achieved in this monitoring period spanning from 01-Sep-2021 to 31-Aug-2022 (the first and last days included) are 124,446 tCO₂e and the net electricity supplied to NWPG is 149,737.412 MWh.

1.2 Sectoral Scope and Project Type

Sectoral Scope 1: Energy industries (renewable - / non-renewable sources)

Project Type: Grid-connected renewable power generation

The project is not a grouped project.

1.3 Project Proponent

Organization name	Three Gorges New Energy Jiuquan Co., Ltd.
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¹ The total installed capacity of the Solar Photovoltaic Modules is 100.39 MW (=250W*294,315 + 255W*105,144), while the capacity of inverters and box transformers is 100MW.

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1.4 Other Entities Involved in the Project

Organization name	Climate Bridge (Shanghai) Ltd.
Role in the Project	Consultancy
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1.5 Project Start Date

30-Dec-2013 (commissioning started date).

1.6 Project Crediting Period

The project adopts renewable crediting periods of 25 years (from 30-Dec-2013 to 29-Dec-2038), and the first 10-year crediting period is from 30-Dec-2013 to 29-Dec-2023 (both days included).

1.7 Project Location

The project is located in Solar Power Industry Zone, Guazhou County, Jingyuan City, Gansu Province of China. The geographical coordinates for the project site are: Latitude: 40° 36' 21.40" - 40° 37' 02.90" N, Longitude: 96° 24' 6.30" - 96° 25' 38.30" E.

The geographic location of the project is shown in Figure 1-1.

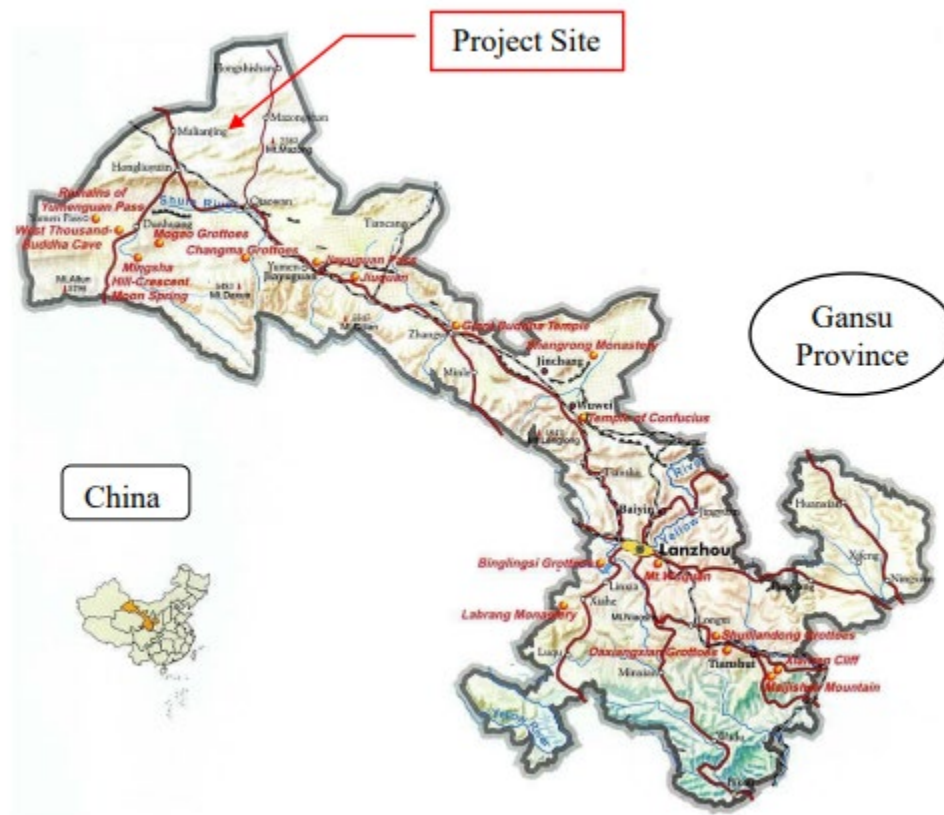


Figure 1-1 Location of the project

1.8 Title and Reference of Methodology

ACM0002: "Grid-connected electricity generation from renewable sources" (Version 16.0);

The methodology also refers to:

"Tool to calculate the emission factor for an electricity system" (Version 04.0);

More information concerning the above methodology and tools can be referred to:
<https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

1.9 Participation under other GHG Programs

The project has been registered as a VCS project with VCS ID 1444 on 04-Jun-2015. Some periods of the project have been registered and issued as international renewable energy certificates (I-REC). The information of details of the project are listed below. Please refer to the link for details: <http://www.irecstandard.org/>;

Details of the project		Details of I-REC
------------------------	--	------------------

Project title	Device ID	Monitoring periods for I-REC	Volumes (MWh)	Issue ID
Guazhou Solar	GUAZSOL1	01/09/2015~31/12/2015	27,654	PPENG-2016-0525-0434-37
Guazhou Solar	GUAZSOL1	01/01/2016~30/04/2016	32,351	PPENG-2016-0525-0448-09
Guazhou Solar	GUAZSOL1	01/05/2016~12/05/2016	3,564	PPENG-2017-0110-0231-58
Guazhou Solar	GUAZSOL1	01/01/2017~11/01/2017	2,826	PPENG-2017-0705-0901-32
Guazhou Solar	GUAZSOL1	12/01/2017~12/01/2017	221	PPENG-2017-0713-0155-07
Guazhou Solar	GUAZSOL1	01/01/2018~10/05/2018	47,598	PPENG-2018-1218-0812-57
Guazhou Solar	GUAZSOL1	01/01/2019~29/05/2019	49,374	PPENG-2019-0625-1341-19
Guazhou Solar	GUAZSOL1	30/05/2019~26/08/2019	39,337	PPENG-2019-0925-0630-45

The project has not registered under any other GHG programs else.

1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits:

The project has not reduced GHG emissions from activities that includes GHG allowance trading for compliance. China has a national emissions trading scheme only cover the high-emission industries, such as thermal power generation, petrochemical, chemical, building materials, iron and steel, non-ferrous, paper, aviation and other key emission industries that emitted at least 26,000 tons of CO₂e/year, not including renewable project². And the project activity is not included the mandatory emission control scheme and there is no emission cap enforced for the project owner according to the enforced company list³ in public information.

² http://www.mee.gov.cn/xxgk2018/xxgk/xxgk05/202103/t20210330_826728.html

³ <http://www.mee.gov.cn/xxgk2018/xxgk/xxgk03/202012/W020201230736907682380.pdf>

The project has not reduced GHG emissions from activities that are included in an emissions trading program. The project has not been registered as a CCER (Chinese Certified Emission Reductions) project in China, thus it is not eligible for emission reductions transaction under the China's ETS.

Besides, the project owner promised that the emission reduction in the monitoring period from 01-Sep-2021 to 31-Aug-2022 (the first and last days included) will request for VCUs and will not be submitted under any other GHG programs or mechanism. Hence, it is confirmed that the emission reductions will not be double counted.

Therefore, net GHG emission reductions or removals generated during this monitoring period have not been and will not be used for compliance under emission trading programs and other binding limits.

Other Forms of Environmental Credit:

The project has not sought or received another form of GHG-related environmental credit, including renewable energy certificates, during this monitoring period.

In previous monitoring periods, some electricity generated by the project have registered and issued as international renewable energy certificates (I-REC) and these amounts of electricity are excluded from the electricity requested for VCUs, no double counting was promised. The information of I-REC is listed below:

<http://www.irecstandard.org/>;

Details of the project, monitoring periods and details of I-REC sought are listed below:

Details of the project		Monitoring periods for I-REC	Details of I-REC	
Project title	Device ID		Volumes (MWh)	Issue ID
Guazhou Solar	GUAZSOL1	01/09/2015~31/12/2015	27,654	PPENG-2016-0525-0434-37
Guazhou Solar	GUAZSOL1	01/01/2016~30/04/2016	32,351	PPENG-2016-0525-0448-09
Guazhou Solar	GUAZSOL1	01/05/2016~12/05/2016	3,564	PPENG-2017-0110-0231-58

Guazhou Solar	GUAZSOL1	01/01/2017~11/01/2017	2,826	PPENG-2017-0705-0901-32
Guazhou Solar	GUAZSOL1	12/01/2017~12/01/2017	221	PPENG-2017-0713-0155-07
Guazhou Solar	GUAZSOL1	01/01/2018~10/05/2018	47,598	PPENG-2018-1218-0812-57
Guazhou Solar	GUAZSOL1	01/01/2019~29/05/2019	49,374	PPENG-2019-0625-1341-19
Guazhou Solar	GUAZSOL1	30/05/2019~26/08/2019	39,337	PPENG-2019-0925-0630-45

1.11 Sustainable Development Contributions

The project generated electricity using solar power resources and the electricity is fed into NWPG, displacing energy that would otherwise be generated by fossil fuels. In this monitoring period,



The project supplies renewable electricity to NWPG, which contributes to SDG 7.



The project provides long-term job opportunities for local people, which has a positive effect on the local economy and contributes to SDG 8.



The project achieves GHG emission reductions which contributes to SDG 13.

These contribute to achieve China's stated sustainable development priorities, included strengthening resistance capacity to climate risks, increasing labor force participation rate, increasing the share of clean energy consumption.

Table 1: Sustainable Development Contributions⁴

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	7.2	Amount of Renewable energy supplied to the power grid	Implemented activities to increase	149,737.412 MWh of electricity from clean and renewable solar energy has been supplied to the power grid during this monitoring period (01-Sep-2021~31-Aug-2022), replacing fossil fuel generated electricity.	From 30-Dec-2013 to 31-Aug-2022, 1,121,133.862 MWh of electricity from clean and renewable solar energy has been supplied to the power grid.
2)	8.5	The number of long-term jobs by the implementation of the project.	Implemented activities to increase	15 employees (including 3 female and 12 male employees) have signed long term labor contracts and receive stable payments due to the implementation of the project activity.	Provided 15 employment positions for local people in the reporting period.
3)	13.0	Tonnes of greenhouse gas emissions avoided	Implemented activities to increase	The project achieved a GHG emission reduction 124,446 tCO ₂ e during this monitoring period (01-Sep-2021~31-Aug-2022).	From 30-Dec-2013 to 31-Aug-2022, the project has achieved a GHG emission reduction of 763,119 tCO ₂ e.

⁴ Please refer to appendix 1 for supporting evidence

2 SAFEGUARDS

2.1 No Net Harm

The Environmental Impact Assessment (EIA) of this project has been examined and approved by Gansu Environmental Protection Bureau on 24-Dec-2013 with approval No. “Ganhuanshenbiaofa [2013] No.80”. Every aspect of environmental impact has been considered in the EIA report with corresponding measures during project development, and no net harm has been detected. Meanwhile, the implementation of the project improved local socio-economic development through creating career opportunities and paying taxes. The project proponent has been awarded prizes because of the implementation of the project by local government for the contribution to the local economy.

In conclusion, the project has no negative impacts on local environment and socio-economy. And no net harm on local environment and social community has been detected for the project.

2.2 Local Stakeholder Consultation

Local Stakeholder Consultation during the project preparation stage:

The project owner designed a questionnaire to collect the comments of relevant stakeholders in October 2013. 30 questionnaires have been handed in total and all of them have been received successfully from the stakeholder representatives, respectively from the local government, and surrounding villages. The representatives covered different ages, different occupations and different education levels. Most of the stakeholders interviewed expressed the project will benefit the local environment, economy and social development, some of them thought there is no significant impact on those, and no negative impact were raised by stakeholders.

Local Stakeholder Consultation during the project implementation stage:

Communications with Local stakeholders are being carried out at periodic intervals. During this monitoring period, the project proponent sent out 20 questionnaires to collect the opinions of local stakeholders on 15-Aug-2022. No negative comment was received. All the people participated in the survey thought the project promoted local economic development. Key implementation schedules or changes of the project are communicated to the local authority, who informs the neighbourhood committee and the local residents, the comments and suggestions from residents are collected by the local authority meanwhile. And the local government agencies and competent authorities conduct spot checks on the implementation of the project from time to time and give suggestions on the involved rectification problems.

Also, the project proponent implemented an opinion collecting box to receive local stakeholders' opinion towards the project. There are no negative comments received for the project during this monitoring period. In line with VCS requirements all the processes have been implemented to

receive comments from local stakeholders as well as communicate with them at periodic intervals.

2.3 AFOLU-Specific Safeguards

The project is not an AFOLU project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project is implemented in accordance with the description of the registered PD. Electricity generated by the project using renewable solar photovoltaic (PV) power delivers to the NWPG, replacing equivalent electricity generated by fossil fuel fired power plants connected to the NWPG and therefore reducing GHG emissions.

The timeline of the project is shown as below:

Start date of construction	22-Sep-2013
Start date of commissioning	30-Dec-2013
Start date of the crediting period	

The total installed capacity of the Project is 100.39 MWp, which consists of 100 sets of power generation units (sub-systems). Each of the power generation unit is equipped with 2 inverters and one box transformer. The technical parameters of the main equipment installed for the project are shown in Table 3-1 below.

During this monitoring period, the electricity delivered to the NWPG by the project is 149,737.412 MWh and the emission reductions achieved are 124,446 t CO₂e. The power plant run continuously. No events or situations, which may impact the applicability of the applied methodology, occurred during this monitoring period.

Table 3-1: Parameters of the equipment installed by the project

Photovoltaic Modules	CS6P-250P	CS6P-255P
Manufacturer	Changshu Artes sunshine Power Technology Co., Ltd.	
Quantity	294,315	105,144
Rated maximum power (Wp)	250	255
Rated Power Voltage (V)	30.1	30.2

Rated Power Current (A)	8.30	8.43
Open circuit voltage (V)	37.2	37.4
Life time (years)	25	25
Decay rate in 25 years (%)	≤ 20	≤ 20
Conversion Efficiency (%)	15.54	15.54

Inverter	SG500MX	EP-0500-A
Manufacturer	Sungrow Power Supply Co., Ltd.	Wuxi Sineng New Energy Co. , Ltd
Quantity	98	102
Rated output Power (kW)	500	500
Rated output Voltage (V)	3 ~ 315	315
Rated output frequency (Hz)	50	50
Max. output current (A)	1,008	1,008

Box transformer	ZGS-Z.G-1000/38.5	YBF-1000/40.5	ZGSF11-Z.G-1000/35
Manufacturer	Ningbo Tian'an Transformer Co., Ltd.	Sunel Transformer Co., Ltd.	Jiangsu Huapeng Transformer Co., Ltd.
Quantity	40	30	30
Rated capacity (kVA)	1,000	1,000	1,000
Rated Voltage (V)	38,500±2×2.5/315/315	40,500	38,500±2×2.5/315/315

3.2 Deviations

3.2.1 Methodology Deviations

There is no methodology deviation applied during this monitoring period.

3.2.2 Project Description Deviations

There are no project description deviations applied during this monitoring period.

In previous monitoring reports, there is a project description deviation for coordinates of the project. In the registered PD, there was a type for the coordinates of the project as follows:

Latitude: 40° 36' 21.40" - 40° 37' 502.90" N

Longitude: 96° 24' 6.30" - 96° 25' 38.30" E

The correct coordinates of the project are as below:

Latitude: 40° 36' 21.40" - 40° 37' 02.90" N

Longitude: 96° 24' 6.30" - 96° 25' 38.30" E

This project description deviation for coordinates of the project is applied to this monitoring period from 01-Sep-2021 to 31-Aug-2022.

3.3 Grouped Projects

The project is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ e/MWh
Description	Combined margin CO ₂ emission factor for Northwest Power Grid in year y
Source of data	China DNA
Value applied	0.8311
Justification of choice of data or description of measurement methods and procedures applied	2014 Baseline Emission Factors for Regional Power Grids in China issued by China DNA on 11-May-2015.
Purpose of Data	Calculation of baseline emissions
Comments	This parameter is fixed during this first crediting period.

4.2 Data and Parameters Monitored

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								
Source of data	Calculated								
Description of measurement methods and procedures to be applied	Calculated based on the electricity delivered to the grid by the project ($EG_{\text{export},y}$) and the electricity imported from the grid by the project ($EG_{\text{import},y}$). The cut-off time of the electricity meter is at 24:00 of the last day of each month.								
Frequency of monitoring/recording	Measured continuously and recorded monthly								
Value monitored	<table border="1"> <thead> <tr> <th>Period</th><th>Value</th></tr> </thead> <tbody> <tr> <td>01-Sep-2021~31-Dec-2021</td><td>48,189.900</td></tr> <tr> <td>01-Jan-2022~31-Aug-2022</td><td>101,547.512</td></tr> <tr> <td>Total</td><td>149,737.412</td></tr> </tbody> </table>	Period	Value	01-Sep-2021~31-Dec-2021	48,189.900	01-Jan-2022~31-Aug-2022	101,547.512	Total	149,737.412
Period	Value								
01-Sep-2021~31-Dec-2021	48,189.900								
01-Jan-2022~31-Aug-2022	101,547.512								
Total	149,737.412								
Monitoring equipment	-								
QA/QC procedures to be applied	The quantity of electricity delivered to the grid by the project ($EG_{\text{export},y}$) and the electricity imported from the grid by the project ($EG_{\text{import},y}$) is crosschecked with electricity sales and purchase receipts.								
Purpose of the data	Calculation of baseline emissions								
Calculation method	$EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y}$								
Comments	-								

Data / Parameter	$EG_{\text{export},y}$
Data unit	MWh
Description	Quantity of the electricity delivered to the grid by the project in year y
Source of data	On-site measurement
Description of measurement methods and procedures to be applied	Use calibrated electric meters. The accuracy of the meter(s) is 0.2s. The calibration was conducted annually subject to national standards. The cut-off time of the electricity meter is at 24:00 of the last day of each month.
Frequency of monitoring/recording	Measured continuously and recorded monthly
Value monitored	The actual quantity of the electricity delivered to the grid by the project is listed below:

	Period	Value			
	01-Sep-2021~31-Dec-2021		48,732.200		
	01-Jan-2022~31-Aug-2022		102,475.120		
	Total		151,207.320		
Monitoring equipment	Monitored by bidirectional electricity meter M1				
	Type	Serial number	Accuracy class	Date of calibration	Validity
	WU.TE432q	41600811	0.2S	05-Nov-2020; 01-Nov-2021	04-Nov-2021; 31-Oct-2022
QA/QC procedures to be applied	Meter is calibrated periodically by the third-party calibration entity. The data is crosschecked by the electricity sale receipts.				
Purpose of the data	Calculation of baseline emissions				
Calculation method	-				
Comments	-				

Data / Parameter	EG _{Import, y}								
Data unit	MWh								
Description	Quantity of the electricity imported from the grid by the project in year y								
Source of data	On-site measurement								
Description of measurement methods and procedures to be applied	Use calibrated electric meters. The accuracy of the meter(s) is 0.2s. The calibration is conducted annually subject to national standards. The cut-off time of the electricity meter is at 24:00 of the last day of each month.								
Frequency of monitoring/recording	Measured continuously and recorded monthly								
Value monitored	The actual quantity of the electricity imported from the grid by the project is listed below: <table> <tr> <th>Period</th><th>Value</th></tr> <tr> <td>01-Sep-2021~31-Dec-2021</td><td>542.300</td></tr> <tr> <td>01-Jan-2022~31-Aug-2022</td><td>927.608</td></tr> <tr> <td>Total</td><td>1,469.908</td></tr> </table>	Period	Value	01-Sep-2021~31-Dec-2021	542.300	01-Jan-2022~31-Aug-2022	927.608	Total	1,469.908
Period	Value								
01-Sep-2021~31-Dec-2021	542.300								
01-Jan-2022~31-Aug-2022	927.608								
Total	1,469.908								
Monitoring equipment	Monitored by bidirectional electricity meter M1:								

	Type	Serial number	Accuracy class	Date of calibration	Validity
	WU.TE432q	41600811	0.2s	05-Nov-2020; 01-Nov-2021	04-Nov-2021; 31-Oct-2022
QA/QC procedures to be applied	Meter is calibrated periodically by the third-party calibration entity. The data is crosschecked by the electricity purchase receipts.				
Purpose of the data	Calculation of baseline emissions				
Calculation method	-				
Comments	-				

4.3 Monitoring Plan

1) Operation and management structure

Overall responsibility for daily monitoring and reporting lies with the project owner. A monitoring group is established within the project company to carry out the monitoring work. The structure of the monitoring group is as follows:

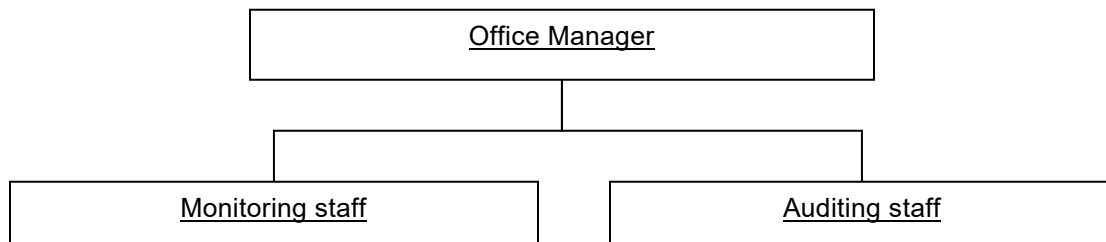


Figure 4-1 Organization structure of the monitoring team

The responsibilities of each role in the team structure are:

- Office manager has the overall management responsibility, especially supervising the implementation of the monitoring plan
- Monitoring staff measures the electricity imported to and exported from the project
- Auditing staff performs internal verification of the measurement, collects relevant receipts and calculates emission reductions
- Finally, general manager reviews the monitoring reports.

2) Monitoring equipment and installation

The electricity generated by the project is transformed to 110kV through the onsite 110kV substation before connected to the Bulongji Substation of NWPG through 110kV transmission line. And two bi-directional meters M1 and M2 with accuracy of 0.2s are installed to monitor the

electricity delivered to the grid by the project ($EG_{\text{export},y}$) and the electricity imported from the grid by the project ($EG_{\text{import},y}$). Meter M2 is installed at the Bulongji substation, and meter M1 is installed at the onsite 110kV substation. Meter M1 is owned, operated and maintained by the project owner and meter M2 is owned, operated and maintained by the grid company. Therefore M1 is determined as the monitoring meter for monitoring $EG_{\text{import},y}$ and $EG_{\text{export},y}$. The readings from meter M1 will be cross-checked by the reading from meter M2 in the forms of sales and purchase receipts which are provided by the grid company. The conservative value for $EG_{\text{import},y}$ and $EG_{\text{export},y}$ between meter M1 readings and sales and purchase receipts is used for ER calculation. The total electricity delivered to the grid by the project is calculated as follows: $EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y}$.

During this monitoring period, meter M1 runs continuously with no malfunctioning.

The power line diagram of the project is shown as follows:

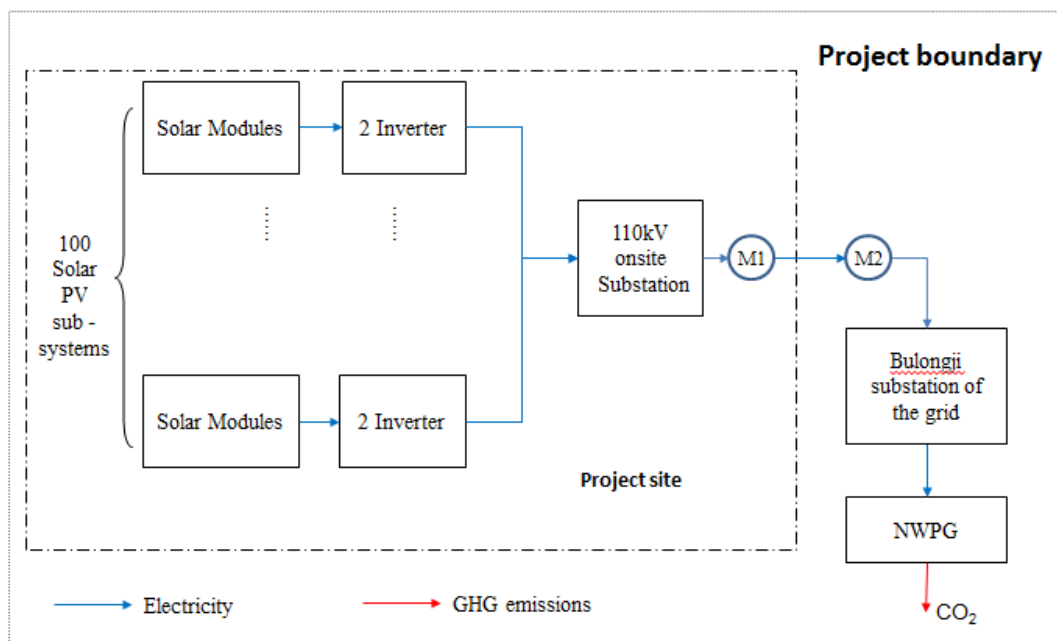


Figure 4-2 Power line diagram of the monitoring system

3) Data collection system

The procedures of data recording and collecting are listed below:

- The project owner reads meter M1 every month and then submits the reading results to the grid company for crosscheck with meter readings of meter M2. Upon agreement on the electricity readings from both parties, the project owner provides the grid company sale receipt for $EG_{\text{export},y}$ and the power grid issues the project owner receipt for $EG_{\text{import},y}$.
- The project owner files the meter readings of M1 in the monthly report. The monthly report is archived and used to calculate emission reductions.

- The project owner collects and keeps on file maintenance records, meter calibration documents.

4) Quality assurance and quality control (QA/QC)

QA/QC practice involves:

- The metering equipment is calibrated and checked annually for accuracy.
- Calibration is carried out by qualified parties with the records supplied to the project owner, and the calibration ensured sufficient accuracy so that any error resulting from such equipment did not exceed the allowable error of full-scale rating.
- When M1 is out of work, M2 is used for measurement, and no emission reduction is claimed when both M1 and M2 are out of work.

All data collected as part of monitoring is archived electronically. All information is stored by the technology department of the project owner and all the materials have physical copies for backup. And all data including calibration records is kept until 2 years after the end of the crediting period, or the last issuance of VCU, whichever is later.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

Baseline Emissions (BE_y) is determined by multiplying net electricity generation supplied by the project plant to the grid ($EG_{facility,y}$) during the monitoring period by Emission Factor ($EF_{grid,CM,y}$) of NWPG.

$$BE_y = EF_{grid,CM,y} \times EG_{facility,y}$$

Where:

BE_y : Baseline emissions of the NWPG during monitoring period

$EF_{grid,CM,y}$: Emission factor of the NWPG during monitoring period

$EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant to the grid in year y

The grid emission factor $EF_{grid,cm,y}$ of the project during this crediting period is 0.8311 tCO₂e/MWh, The monthly electricity data and baseline emission are listed in the table 5-1 and table 5-2.

Table 5-1 The monthly monitored electricity data for $EG_{export,y}$ and $EG_{import,y}$

Period	$EG_{export,y}$ (MWh)			$EG_{import,y}$ (MWh)			$EG_{facility,y}$ (MWh)
	Meter reading records	Electricity data in Sales Receipts	Conservative value	Meter reading records	Electricity data in Purchase Receipts	Conservative value	$EG_{export,y} - EG_{import,y}$
01-Sep-2021-30-Sep-2021	14,283.100	14,142.480	14,142.480	104.500	99.000	104.500	14,037.980
01-Oct-2021-31-Oct-2021	12,128.900	12,013.870	12,013.870	122.800	132.000	132.000	11,881.870
01-Nov-2021-30-Nov-2021	11,328.200	11,218.130	11,218.130	140.400	132.000	140.400	11,077.730
01-Dec-2021-31-Dec-2021	11,471.600	11,357.720	11,357.720	165.400	165.000	165.400	11,192.320
Subtotal in 2021	49,211.800	48,732.200	48,732.200	533.100	528.000	542.300	48,189.900
01-Jan-2022-31-Jan-2022	11,572.392	11,458.480	11,458.480	166.182	176.000	176.000	11,282.480
01-Feb-2022-28-Feb-2022	12,041.304	11,922.460	11,922.460	138.226	132.000	138.226	11,784.234
01-Mar-2022-31-Mar-2022	10,565.720	10,463.200	10,463.200	109.032	110.000	110.000	10,353.200
01-Apr-2022-30-Apr-2022	14,504.688	14,365.010	14,365.010	92.180	99.000	99.000	14,266.010
01-May-2022-31-May-2022	13,722.896	13,589.730	13,589.730	85.162	77.000	85.162	13,504.568
01-Jun-2022-30-Jun-2022	12,831.632	12,709.950	12,709.950	80.564	77.000	80.564	12,629.386
01-Jul-2022-31-Jul-2022	14,649.800	14,510.760	14,510.760	109.670	121.000	121.000	14,389.760
01-Aug-2022-31-Aug-2022	13,585.792	13,455.530	13,455.530	117.656	110.000	117.656	13,337.874
Subtotal in 2022	103,474.224	102,475.120	102,475.120	898.672	902.000	927.608	101,547.512
Total (01-Sep-2021-31-Aug-2022)	152,686.024	151,207.320	151,207.320	1,431.772	1,430.000	1,469.908	149,737.412

Table 5-2 Baseline Emissions during this monitoring period

Time Period	$EG_{export,y}$ (MWh)	$EG_{import,y}$ (MWh)	$EG_{facility,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO _{2e} /MWh)	BE_y (tCO _{2e})
	A	B	C=A-B	D	E=C*D
01-Sep-2021~31-Dec-2021	48,732.200	542.300	48,189.900	0.8311	40,050
01-Jan-2022~31-Aug-2022	102,475.120	927.608	101,547.512	0.8311	84,396
Total	151,207.320	1,469.908	149,737.412	0.8311	124,446

For more details, please refer to ER calculation spreadsheet.

5.2 Project Emissions

The project is a renewable energy project, therefore, according to methodology ACM0002, $PE_y=0$.

5.3 Leakage

According to methodology ACM0002, project leakage is not considered.

5.4 Net GHG Emission Reductions and Removals

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)
01-Sep-2021~31-Dec-2021	40,050	0.000	0.000	40,050
01-Jan-2022~31-Aug-2022	84,396	0.000	0.000	84,396
Total	124,446	0.000	0.000	124,446

The emission reductions of 124,446 tCO₂e achieved in this monitoring period are about 2.01%⁵ higher than the estimated value 121,997 tCO₂e⁶ which is calculated in line with the registered PD, the main reason is that it covers one peak sunshine period in this monitoring period, which is from June to August in 2022, thus it is reasonable that the amount of emission reduction is slightly higher than the estimated value. Besides, even if the emission reduction is increased 2.01% compared with the registered PD, which is still lower than 7.92% if the amount of average annual electricity for sale increased that the project IRR will reach benchmark set in the PD.

⁵ $(124,446 \text{ tCO}_2\text{e} - 121,997 \text{ tCO}_2\text{e}) / 121,997 \text{ tCO}_2\text{e} = 2.01\%$

⁶ As per the registered PD, the annual emission reduction from 30-Dec-2020 to 29-Dec-2021 and 30-Dec-2021 to 29-Dec-2022 are respectively 122,893 tCO₂e and 121,558 tCO₂e, thus the estimated emission reduction in the monitoring period (covering 365 days) is 121,997 tCO₂e, i.e., $121,997 \text{ tCO}_2\text{e} = 122,893 \text{ tCO}_2\text{e} * 120\text{days}/365\text{days} + 121,558 \text{ tCO}_2\text{e} * 245\text{days}/365\text{days}$.

APPENDIX 1: <SUPPORTING EVIDENCE >

Evidence for SDG 7 and 13: From project operation date onwards, the net electricity supplied to the grid and the emission reduction in every monitoring period have been listed in below table. Please refer to following links for details.

<https://registry.verra.org/app/projectDetail/VCS/1444>

<http://www.irecstandard.org/>

Period		The net electricity delivered to CCPG	Emission Reduction	Additional Notes
From	To	MWh	tCO ₂ e	
30-Dec-2013	29-Aug-2015	210,316.200	174,793	
30-Aug-2015	31-Dec-2017 ⁷	158,858.500	132,027	
<u>01-Sep-2015</u>	<u>31-Dec-2015</u>	27,654	-	Registered and issued as I-REC
<u>01-Jan-2016</u>	<u>30-Apr-2016</u>	32,351	-	Registered and issued as I-REC
<u>01-May-2016</u>	<u>12-May-2016</u>	3,564	-	Registered and issued as I-REC
<u>01-Jan-2017</u>	<u>11-Jan-2017</u>	2,826	-	Registered and issued as I-REC
<u>12-Jan-2017</u>	<u>12-Jan-2017</u>	221	-	Registered and issued as I-REC
01-Jan-2018	30-Jun-2020 ⁸	216,412.018	179,858	
<u>01-Jan-2018</u>	<u>10-May-2018</u>	47,598	-	Registered and issued as I-REC
<u>01-Jan-2019</u>	<u>29-May-2019</u>	49,374	-	Registered and issued as I-REC
<u>30-May-2019</u>	<u>26-Aug-2019</u>	39,337	-	Registered and issued as I-REC
01-Jul-2020	31-Aug-2021	182,884.732	151,995	
01-Sep-2021	31-Aug-2022	149,737.412	124,446	In requesting for issuance
Cumulative impacts		1,121,133.862	763,119	

Evidence for 8: The payroll of the project staff, including name, gender, wage, insurance and housing fund and other specific information has been submitted to VVB for verification. Thus, the payroll is not included as appendices to this report due to confidentiality requirement of the project proponent.

⁷ The electricity registered and issued as I-REC are excluded from this period.

⁸ The electricity registered and issued as I-REC are excluded from this period.