CGN HAMI PHASE I 20MWP GRID-CONNECTED PV POWER PLANT PROJECT

Document Prepared by CGN Carbon Asset Management (Beijing) Co., Ltd.

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

CGN Hami Phase I 20MWp Grid-connected PV Power Plant Project (hereafter referred to as"the project") is a newly built photovoltaic power plant located in Hami City, Xinjiang Uygur Autonomous Region, P.R.China. The project is constructed and operated by CGN Solar Power Development Co., LTD (hereafter referred to as "the project owner").

The project has a total installed capacity of 20.31MWp, the expected average annual net electricity generation during the whole operation lifetime is 29,846MWh with the plant load factor (PLF) of 16.8%. The electricity generated by the project is supplied to Northwest China Power Grid (NWCPG). Prior to the implementation of the project, the equivalent electricity supplied by the project was sourced from the NWCPG. The project substitutes part of the fossil fuel-fired power plants connected to NWCPG so as to reduce the CO_2 emission of those plants. The expected electricity generation of the project in first year is 33,294MWh. The attenuation factor of the electricity generation is about 0.99 every year.

The Project was put into operation on 28/12/2011. The expected operation period of the Project is 25 years as stated in the registered PDD.

The project has been registered as VCS project with Ref. VCS1248 and VCUs of 21,576 tCO_2e have been issued for the monitoring period from 28/12/2011 to 26/12/2012, 107,239 tCO_2e have been issued for the monitoring period from 27/12/2012 to 31/12/2016 and 101,427 tCO_2e have been issued for the monitoring period from 01/01/2017 to 27/12/2020.

The emission reductions of the project has not been issued as CERs.

The project was operated normally during this monitoring period from 28/12/2020 to 27/12/2021, no stop or maintenance happened. The total emission reduction achieved is 24,467 tCO_2e.

1.2 Sectoral Scope and Project Type

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

Project type: Solar power project

The project is not a grouped project.

1.3 Project Proponent

Organization name	CGN Solar Power Development Co., LTD

Contact person	Shi Lei
Title	CDM office director
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1.4 Other Entities Involved in the Project

Organization name	**CGN Carbon Asset Management (Beijing) Co. Ltd**
Role in the Project	Consultancy
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1.5 Project Start Date

28/12/2011 (commissioning start date)

1.6 Project Crediting Period

In the registered VCS PD, the crediting period is described as from 28/12/2011 to 26/12/2012. A deviation is requested for the crediting period in the registered VCS PD. The project is registered under VCS Standard Version 3.4 and completed validation before 19/03/2020. Thus, it remains eligible to apply the crediting period requirements under VCS Standard Version 3 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from 28/12/2011 to 26/12/2012 to 28/12/2011 to 27/12/2021. Moreover, as the project is also registered as a CDM project with a seven year twice renewable project crediting period and furthermore, the project has the lifetime of 25 years, it is not eligible for VCU issuance beyond 27/12/2032.

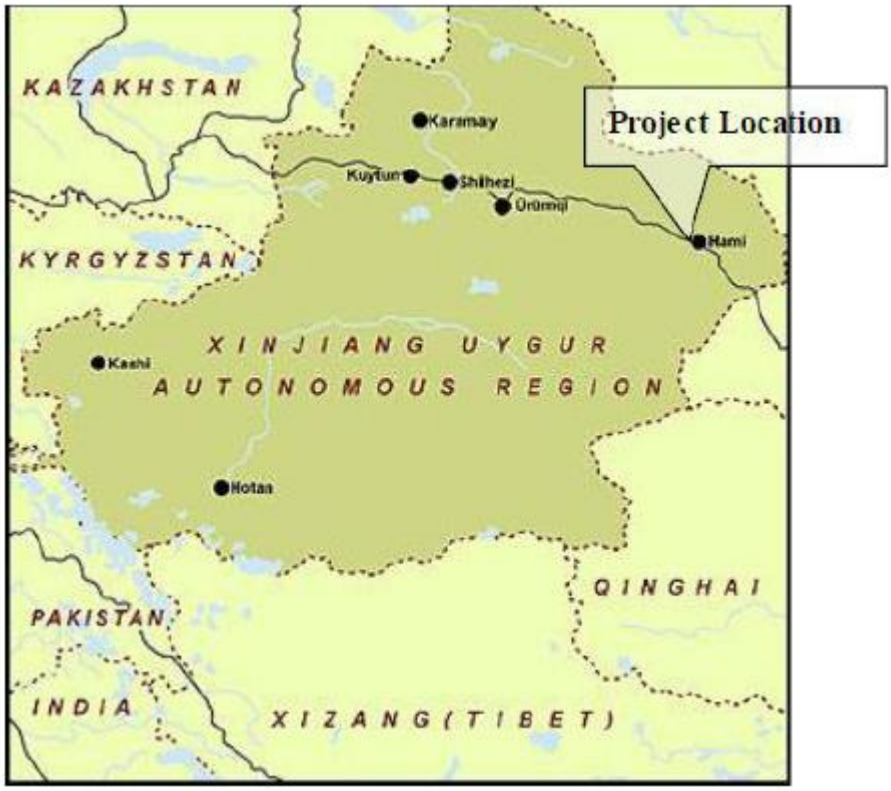
This monitoring period is from 28/12/2020 to 27/12/2021 within the first VCS crediting period and the monitoring period covers 365 days.

1.7 Project Location

The project is located in Hami City, Xinjiang Uygur Autonomous Region, P. R. China. The central geographical coordinates of the project is E93° 38'36.80" (93.6436°) and N43° 02'13.64" (43.0371°). Figure A1 and A2 shows the geographical location of the project.

Figure A1. The location of the proposed project in the map of P. R. China

Figure A2. The location of the proposed project in the map of Xinjiang Uygur AutonomousRegion, P. R. China



1.8 Title and Reference of Methodology

The approved methodology applied in the project activity is ACM0002 (version 13.0.0) – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

"Tool for the demonstration and assessment of additionality" (version 06.1.0)

"Tool to calculate the emission factor for an electricity system" (version 02.2.1)

Reference:

http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html

1.9 Participation under other GHG Programs

The project has been registered as CDM project and the registration number is 8194, the first CDM crediting period is from 27/12/2012 to 26/12/2019, and the crediting period has been successfully renewed on 18/12/2020 with the 2nd CDM crediting period from 27/12/2019 to 26/12/2026.

The project has been registered as VCS project with Ref. VCS1248 and VCUs of 21,576 tCO_2e have been issued for the monitoring period from 28/12/2011 to 26/12/2012, 107,239 tCO_2e have been issued for the monitoring period from 27/12/2012 to 31/12/2016 and 101,427 tCO_2e have been issued for the monitoring period from 01/01/2017 to 27/12/2020.

According to the regulation stipulated by the China emissions trading system, only approved CCERs(Chinese Certified Emission Reductions) can be used under the China Emissions Trading System. The project has not been registered as a CCER project in China, thus the project cannot be included in the China's emissions trading scheme.

1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits

The project has been registered as VCS project with Ref. VCS1248 and VCUs of 21,576tCO_2e have been issued for the monitoring period from 28/12/2011- 26/12/2012, 107,239 tCO2e have been issued for the monitoring period from 27/12/2012 to 31/12/2016 and 101,427 tCO_2e have been issued for the monitoring period from 01/01/2017 to 27/12/2020. All credits from 28/12/2020 to 27/12/2021 will be only claimed under VCS program as VCUs for the project to avoid double counting, which will not be used for compliance with emission trading programs or to meet binding limits on GHG emissions.

The project proponent CGN Solar Power Development Co., LTD as an enterprise for renewable energy investment, is not included in the compliance entity list by China national Emission Trading Scheme (ETS). Also, 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. Therefore, the project is not involved in an emission trading program or any other mechanism that includes GHG allowance trading. Furthermore, as a voluntary emission reduction project, the GHG emission reductions and removals generated by the project will not be enforced to be used for compliance in China.

Furthermore, as declared by the project proponent the credits in this monitoring period (28/12/2020 -27/12/2021) has not been counted and will not be counted under other kind of GHG programs.

Other Forms of Environmental Credit

The project hasn't sought or received another form of environmental credits.

1.11 Sustainable Development Contributions

The project activity is a renewable solar power project located in Hami City, Xinjiang Uygur Autonomous Region, P. R. China. In this monitoring period,

The project utilizes solar energy resources to generate and supply 27,295.62 MWh renewable net electricity to NWCPG, which contributes to SDG 7.

The project provides job opportunities for local people during both the construction and operational period, which has a positive effect on the local economy and contributes to SDG 8.

The project reduces 24,467 tCO2e GHG emission and 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 Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	7.2	Renewable energy supplied to the power grid	Implemented activities to increase	27,295.62 MWh of net electricity from renewable sources has been supplied to the power grid during the reporting period	An accumulated 284,151.54MWh of net electricity from renewable sources has been supplied to the power grid by end of the reporting period.
2)	8.5	Numbers of job opportunities provided by implementation of the project	Implemented activities to increase	The project provides job opportunities for local people during both the construction and operational period, 12 people have been employed by the project as long-term employee.	The project provides 12 job opportunities for local people by end of the reporting period
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	The project had achieve obvious GHG emission reductions by avoiding 24,467 tCO_2e emissions, as grid-connected fossil fuel-fired power dominates in the NWCPG during this monitoring period	An accumulated 254,709tCO_2e of GHG emission reduction have been achieved by the project by end of the reporting period

2 SAFEGUARDS

2.1 No Net Harm

The environmental impact assessment was approved by Xinjiang Uygur Autonomous Region Environmental Protection Bureau on 11/08/2010. A summary of the report is illustrated as below:

A summary of the impacts is presented below. The environmental impacts are not deemed to be significant and there is no transboundary impacts resulted by the project.

Impact from noise

There is some noise during the operation of solar power plant. The plant substation could be the major source of the noise, proper process will be implemented to reduce the noise level. Emission standard for industrial enterprise noise at boundary (GB12348-2008) Level II noise standard would be fulfilled during the operational period. Consequently, the noise of operation has little impact to the surrounding environment.

Electromagnetic impact

The operation of the substation of the solar power plant will generate electromagnetic pollution, whereas the pollution is slight. The electric design in the substation will be optimized and proper process will be implemented to avoid the electromagnetic impact to the surrounding enviroment. Therefore, the electronic magnetic pollution to the surrounding environment is insignificant.

Impact from Solid waste

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

Impact from Wastewater

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

The environmental impacts of the project activity are not considered as significant.

2.2 Local Stakeholder Consultation

Local stakeholders Consultation during the project preparation stage:

To investigate the impacts on local ecological environment and social environment, a survey was made among the potential stakeholders in December 2011, 22 of them are local residence, 5 are governmental officials and 3 others. The survey was arranged through a questionnaire, which was designed to be easily filled in with the following sections:

a) How is the current environment quality?

b) Are there any negative impacts of the project on the everyday life of local residents?

c) Is the project going to help improve the local economy?

d) Does the project impact on light pollution?

e) Which is the environmental topic that concerns you the most during the construction and operation of the project?

f) Do you support the project?

The summary of questionnaire survey is listed as the following:

subject		result		
How is the current environment quality?	Option	good	normal	bad
	Number of persons choose the Option	26	4	/
Are there any negative impacts of the project on the everyday life of local residents?	Option	yes	no	not care
	Number of persons choose the Option	/	26	4
Is the project going to help improve the local economy?	Option	yes	no	not care
	Number of persons choose the Option	8	2	20
Does the project impact on light pollution?	Option	yes	yes but no influence	no
	Number of persons choose the Option	/	/	30
Which is the environmental topic that concerns you the most during the construction	Option	noise	dusty	waste solid
	Number of persons choose the Option	4	9	17

and operation of the project?				
Do you support the project?	Option	support	not support	not care
	Number of persons choose the Option	30	/	/

No other comments received.

The survey shows that the project received strong support from local people. Most of the respondents have concerned about the environmental impacts. However, most issues have been clarified in EIA. All the impacts will be reduced by mitigating measures.

Local stakeholder Consultation during the project implementation stage:

The project owner has set out the mechanism for on-going communication with local stakeholders and the communications with local stakeholders are being carried out at periodic intervals.

Firstly, stakeholders were informed of the status and progress of the project through the bulletin board on the village committee, and their comments can be recorded in the village committee's complaint book. This information is fed back to the project proponent by the contact person for a timely response.

Secondly, stakeholders can communicate and give feedback directly to the project proponent at any time through the published phone number of contact person.

Finally, the contract person of project owner also meets local villagers to collect their comments and suggestions yearly.

During this monitoring period, the project carried out the communication with local stakeholders in line with the mechanism. Village committee's complaint book were quarterly checked by the contact person, and the contact person visited the villages in May of the year 2020 and 2021 to communicate with stakeholders. Meanwhile, the local authority has also conducted spot checks on the implementation of the project yearly. There are no negative comments received for the project during this monitoring period. In line with VCS requirements all the processed have been implemented to receive comments from local stakeholders as well as communicate with them.

2.3 AFOLU-Specific Safeguards

The project is not AFOLU project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The Project was put into operation on 28/12/2011. The expected operation period of the Project is 25 years as stated in the registered PDD. There was no significant malfunction or any emergency occurred for the Project during this monitoring period. No events occurred during this monitoring period which may impact the applicability of the methodology.

Each of solar cell array is composed of solar cell module, junction box, inverter and booster. The DC electric power generated by the photo voltaic modules will be converted into AC power by the inverters, stepped up to 35kV through a set of transformers located in a distributed manner all over the plant. Then the electricity generated by the project will be connected to NWCPG.

The key technical specifications of the solar cell modules as the table below:

Item	Unit	Plate (flat)-type polycrystalline silicon
Type	/	YL235P-29b
Rated capacity	W	235
Open-Circuit Voltage (Voc)	V	37
Short-Circuit Current (Isc)	A	8.54
Peak current	A	7.97
Lifetime	Year	25
Manufacturer	/	Yingli Energy Co., Ltd

The gateway meters are installed at the connection point of the substation to monitor the electricity supplied to the grid by the project activity. According to methodology, the project is a solar power plant project, so it does not involve project emission.

During this monitoring period, the project has a good running, smooth data transfer and grid connection, and no special events happened.

No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

3.2 Deviations

2.1.1 Methodology Deviations

There is no methodology deviations applied during this monitoring period.

2.1.2 Project Description Deviations

In the registered VCS PD, the crediting period is described as from 28/12/2011 to 26/12/2012. A deviation is requested for the crediting period in the registered VCS PD. The project is registered under VCS Standard Version 3.4 and completed validation before 19/03/2020. Thus, it remains eligible to apply the crediting period requirements under VCS Standard Version 3.4 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from 28/12/2011 to 26/12/2012 to 28/12/2011 to 27/12/2021, and it has no impacts on the applicability, additionality or baseline of the project.

There is no other project description deviation during this monitoring period.

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/ MWh
Description	Combined margin emission factor for grid connected power generation in year y
Source of data	Registered CDM PDD with Ref No.8194
Value applied	0.8964
Justification of choice of data or description of measurement methods and procedures applied	Refer to the registered CDM PDD with Ref No.8194
Purpose of Data	Calculation of baseline emissions
Comments	The data is calculated ex-ante according to the applied tool.

4.2 Data and Parameters Monitored

Data / Parameter	$EG_{Facility,y}$

Data unit	MWh
Description	Quantity of net electricity generation supplied to the grid by the Project in year y.
Source of data	Electricity meter readings from the meters at the project site
Description of measurement methods and procedures to be applied	Continuously measurement and monthly recording
Frequency of monitoring/recording	Calculated based on the measurement results of $EG_{export,y}$, $EG_{import,y}$
Value monitored	27,295.62MWh
Monitoring equipment	Please refer to the monitoring equipment information in the table of parameters $EG_{export,y}$, $EG_{import,y}$
QA/QC procedures to be applied	The project operator is responsible for recording electricity data. Measurement results are cross checked by receipts of electricity sale.
Purpose of the data	Baseline Emission calculation
Calculation method	Quantity of net electricity generation supplied to the grid by the Project is measured as electricity supplied to the grid by the Project ($EG_{export,y}$) minus imports ($EG_{import,y}$). $EG_{facility,y}$= $EG_{export,y}$ - $EG_{import,y}$ $EG_{export,y}$, $EG_{import,y}$ is measured by electricity meters as the following table shows.
Comments	-

Data / Parameter	$EG_{export,y}$
Data unit	MWh
Description	Quantity of electricity supplied to the grid by the Project in year y.
Source of data	Electricity meter reading (M1 as main meter, M2 as backup meter) at the on-site substation
Description of measurement methods and procedures to be applied	Both bidirectional meters are installed to measure the electricity exported to the grid. The readings of the electricity meter(s) are continuously measured and at least monthly recorded. Data will be archived for 2 years following the end of the last crediting period by means of electronic and paper backup. The accuracy of electricity meter(s) is no lower than 0.5.
Frequency of monitoring/recording	Continuously measurement and monthly recording
Value monitored	27,677.76 MWh

Monitoring equipment	Electricity meter reading (M1 as main meter, M2 as backup meter) at the on-site substation. The detailed information of the meter please refer to the below table.
QA/QC procedures to be applied	The project operator is responsible for recording electricity data. Measurement results are cross checked by receipts of electricity sale.
Purpose of the data	Baseline Emission calculation
Calculation method	-
Comments	-

Data / Parameter	$EG_{import,y}$
Data unit	MWh
Description	Quantity of electricity purchased from the grid by the Project in year y.
Source of data	Electricity meter reading (M1 as main meter, M2 as backup meter) at the on-site substation
Description of measurement methods and procedures to be applied	Both bidirectional meters are installed to measure the electricity imported from the grid. The readings of the electricity meter(s) are be continuously measured and at least monthly recorded. Data will be archived for 2 years following the end of the last crediting period by means of electronic and paper backup. The accuracy of electricity meter(s) is no lower than 0.5.
Frequency of monitoring/recording	Continuously measurement and monthly recording
Value monitored	382.14 MWh
Monitoring equipment	Electricity meter reading (M1 as main meter, M2 as backup meter) at the on-site substation. The detailed information of the meter please refer to the below table.
QA/QC procedures to be applied	The project operator is responsible for recording electricity data. Measurement results are cross checked by receipts of electricity sale.
Purpose of the data	Baseline Emission calculation
Calculation method	-
Comments	-

Table 1 Detailed information of the meters

Meters	Accuracy Class	Serial number	Date of calibration	Validity
Main meter	0.2s	1111091971000004	19/09/2020	18/09/2021
			14/09/2021	13/09/2022
Backup meter	0.2s	1111091971000003	19/09/2020	18/09/2021
			14/09/2021	13/09/2022

4.3 Monitoring Plan

1. Monitoring Object

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

2. Management Structure

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

The responsibilities of the project staff are as follow:

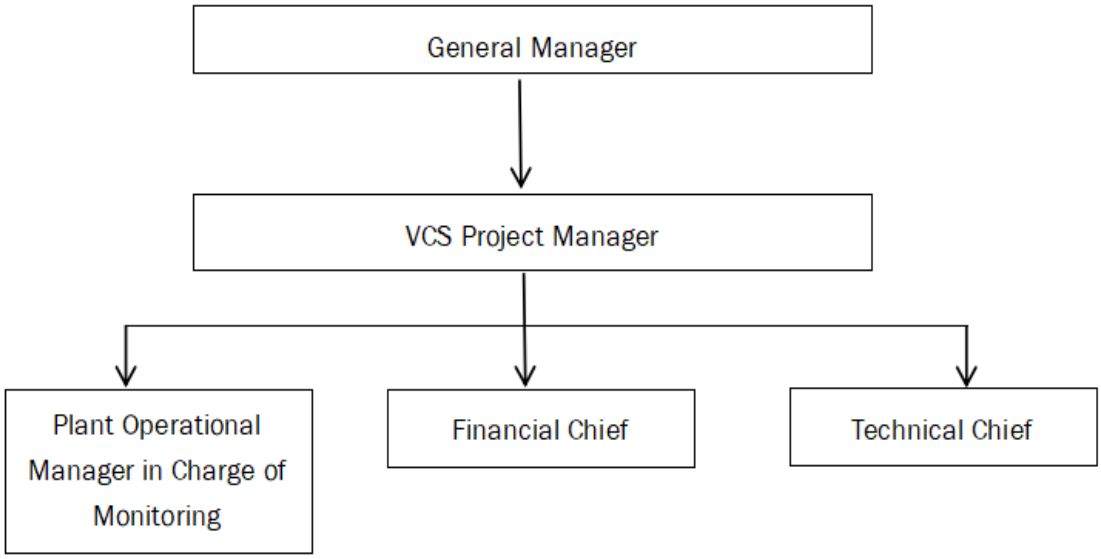
General Manager: To be responsible for supervising the whole monitoring procedure.

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

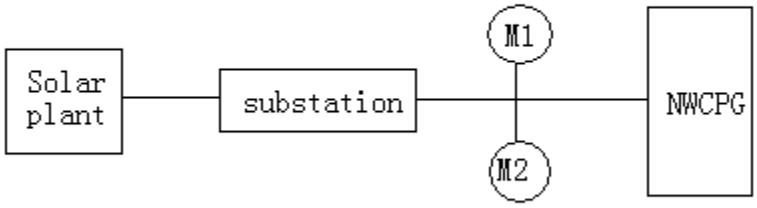
Operational and monitoring manager: To be responsible for collecting data and do internal audit.

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

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



3. Monitoring Program and Equipments



The following monitoring equipments are installed to ensure the implement of the monitoring for the project. The gateway meters (M1 and M2) are installed at the connection point of the substation to monitor the electricity supplied to the grid by the project activity. Usually, the main meter (hereafter referred as the meter M1) was used to monitor the grid-connected electricity supplied to the grid by the project, and when the solar power plant is not in operation and electricity purchased from the grid will be used to ensure the minimum requirement of running the solar power plant, the meter can also be used to monitor the electricity purchased from the grid. M2 refers to the back-up meter. At the same time, the data can be monitored and recorded at the on-site control centre using a computer system. The meter readings will be readily accessible for VVB.

Before the project is in operation, both the project owner and the grid company will check the equipments to ensure their work properly. The accuracy of the above meters is no lower than 0.5.

Due to the regulation of the local Grid Company, the monthly cut-off time for the recording of the electricity supplied to the grid and electricity imported from the grid through the main line are at 24:00 on the 27th day in every month. All the relative metered readings and receipts of electricity sales have been achieved for periodic verification.

4. Data Collection

The verification will use the main meter's data as long as the inaccuracy of the meter is within the permissible tolerance. The main procedures are as follows:

I The project owner will record the power supplied to the grid and purchased from the grid monthly.

II The project owner will calculate the net electricity supplied to the grid based on the records above;

III The project owner keeps and safe keeps the records of the main meter's data readings for verification by the VVB.

If the fault of the main meter exceeds the allowable tolerance or its malfunction occurs, the grid-connected electricity generated by the project will be resolved by following measures:

I Adopting the backup meter's data (after taking the line losses into consideration), unless a test by either party reveals it is inaccuracy;

II If the inaccuracy of the backup meter is not within the acceptable limits or it cannot work properly, the project owner and the grid company shall jointly prepare a new agreement of correct reading;

III If the project owner and the grid company fail to reach an agreement concerning the correct reading, this matter will be submitted for arbitration according to agreed procedures.

5. Calibration of Meters & Metering

The metering equipment is properly calibrated and checked annually according to DL/T448-2016. The project owner prepares backup procedures to deal with any errors occurred to the meters. The calibration records carry out by the grid company should be provided to the project owner, and these records are maintained by the project owner and the third party designated.

Meters should be tested by a qualified metric organization co-authorized by the project owner and the grid company within 10 days after:

I The detection of the reading difference between the main meter and the backup meter that exceeds the allowable tolerance.

II The equipments malfunction caused by improper operation

All the calibration test records should be maintained safely for the verification.

6. Data Management System

To keep safely the record of the data collected during monitoring, this project will set up a complete data management system. The project will perfect the whole monitoring procedure by developing the CDM&VCS manual, tracking information from the primary source to the end-data calculations in paper document format. It is the responsibility of the project owner to provide additional necessary data and information for validation and verification requirements of respective VVB. Physical documentation such as paper-based maps, diagrams and environmental assessment will be collated in a central place, together with this monitoring plan. All paper-based information will be stored by the project owner and kept at least one copy.

At the end of each month, the monitoring data will be filed in a spreadsheet, and the paper-based printout should be also archived. Furthermore, the project owner collects the sales receipts for the electricity supplied to the grid as a cross-check, and compiled the monitoring report including the monitoring data and relevant evidence at the end of each crediting year.

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

7. Monitoring Report

After the project manager collects and sorts the monitored data, the monitoring report is prepared by the designated project participate. The project developer has to make sure that the format and content of the monitoring report are consistent with the monitoring template in the registered PDD.

8. Quality Assurance and Quality Control

The workers are trained to be competent and the metering equipments are calibrated and sealed as per the industry practices at regular intervals, with the purpose to provide credible, accurate, transparent and conservative monitoring data and ensure the real, measurable, longterm GHG emission reduction from this project.

Monthly net on-grid electricity supplied data will be approved and signed off by the Manager before it is accepted and stored. This audit will check compliance with monitoring procedures in this monitoring plan. This internal audit will also identify potential improvements to procedures to improve monitoring and reporting in future years. The purpose of training is to assure those staffs are competent to conduct the monitoring plan, thus to make the monitored data accurate.

9.Training

The project owner entrusts the professional engineers and experts to train all the relative staffs before operation of generators. The training contains VCS knowledge, operational regulations, quality control (QC) standard flow, data monitoring requirements and data management regulations etc.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

Baseline Emissions are calculated by multiplying the ex-ante Baseline Emission factor by annual power generation.

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

Where:

BE_y = Baseline emissions in year y (tCO_2/yr)

$EG_{Facility,y}$ = Quantity of net electricity generation supplied to the grid by the Project in year y. (MWh)

$EF_{grid,CM,y}$ = Combined margin emission factor for grid connected power generation in year y (tCO_2/MWh).

$EG_{facility,y} = EG_{export,y} - EG_{import,y} = 27,677.76 - 382.14 = 27,295.62$ MWh

$BE_y = EG_{Facility,y} \times EF_{grid,CM,y} = 27,295.62 \times 0.8964 = 24,467\ tCO_2e$

Table 1: Quantity of net electricity generation supplied by the project to the Grid (MWh)

Period		Quantity of net electricity generation supplied by the project to the Grid (MWh)		
Start	End	Conservative values of $EG_{export,y}$[1]	Conservative values of $EG_{import,y}$[2]	$EG_{facility,y}$= $EG_{export,y}$-$EG_{import,y}$
28/12/2020	31/12/2020[3]	251.57	3.12	248.45
28/12/2020-31/12/2020		**251.57**	**3.12**	**248.45**
01/01/2021[3]	27/01/2021	1,696.75	20.64	1,676.11
28/01/2021	27/02/2021	2,073.72	31.02	2,042.70

[1] Please refer to the ER calculation spreadsheet for cross-check, the monitored data are consistent with the sales receipts of $EG_{export,y}$ issued by grid company.

[2] Please refer to the ER calculation spreadsheet for cross-check, the monitored data are consistent with the sales receipts of $EG_{import,y}$ issued by grid company.

[3] The cut-off time is 24:00 of 27th each month. The readings at 0:00 of 01/01/2021 (namely 24:00 of 31/12/2020) are source from the daily reading records and confirmed by the grid company.

28/02/2021	27/03/2021	2,308.68	29.70	2,278.98
28/03/2021	27/04/2021	2,849.22	32.34	2,816.88
28/04/2021	27/05/2021	1,987.92	30.36	1,957.56
28/05/2021	27/06/2021	2,699.40	31.68	2,667.72
28/06/2021	27/07/2021	2,521.86	33.66	2,488.20
28/07/2021	27/08/2021	2,737.02	35.64	2,701.38
28/08/2021	27/09/2021	2,654.52	37.62	2,616.90
28/09/2021	27/10/2021	2,117.28	35.64	2,081.64
28/10/2021	27/11/2021	1,875.72	29.04	1,846.68
28/11/2021	27/12/2021	1,904.10	31.68	1,872.42
Subtotal 2021		**27,426.19**	**379.02**	**27,047.17**
Total		**27,677.76**	**382.14**	**27,295.62**

Table 2: Calculation of baseline emissions

Period		$EG_{facility,y}$	$EF_{grid,CM,y}$	BE_y
		(MWh)	(tCO_2e/MWh)	(tCO_2e)
28/12/2020	31/12/2020	248.45	0.8964	222
01/01/2021	27/12/2021	27,047.17	0.8964	24,245
Total		27,295.62	0.8964	24,467

5.2 Project Emissions

According to ACM0002 (Version 13.0.0), no project emissions were to be counted by the Project.

Hence, PE_y=0 tCO_2e.

5.3 Leakage

According to the baseline methodology ACM0002 (version 13.0.0), the leakage of the Project is not considered.

5.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
28/12/2020-31/12/2020	222	0	0	222
01/01/2021-27/12/2021	24,245	0	0	24,245
Total	24,467	0	0	24,467

The estimated annual quantity of net electricity generation supplied to the grid by the project for period 27/12/2020-26/12/2021 is 30,908 MWh[4], and the estimated amount of emission reductions for the corresponding 365 days (the duration of this monitoring period) are 365/365 ×30,908×0.8964=27,705 tCO_2e, which is 13.2% higher than the actual value of 24,467 tCO_2e. Because of the curtailment of soar power by the local grid dispatching to ration the power supply, electricity exported to the grid during this monitoring period is below estimation.

[4] Data from the CDM PDD of the 2nd CDM crediting period, which is sourced from the FSR of the project.

APPENDIX 1: <SUPPORTING EVIDENCE>

Evidence for SDG 7 and SDG 13: From project operation date onwards, the net electricity supplied to the grid and corresponding 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/1248

Period		$EG_{Facility,y}$	ER
From	To	MWh	CO_2e
28-Dec-2011	26-Dec-2012	24,070.20	21,576
27-Dec-2012	31-Dec-2016	119,634.99	107,239
01-Jan-2017	27-Dec-2020	113,150.73	101,427
28-Dec-2020	27-Dec-2021	27,295.62	24,467
Total		284,151.54	254,709

Evidence for SDG 8: The staff payroll of the project has been submitted as a separate document to Verra due to confidentiality requirement of the project proponent.