



Verified Carbon Standard

SOLAR ENERGY PROJECT(S) BY SB ENERGY PRIVATE LIMITED



INFINITE
SOLUTIONS

Document Prepared by (Infinite Solutions)

Contact Information (0731-4050174)

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Prepared By	Infinite Solutions
Contact	Address: 611, Chetak Centre Main, 12/2 R.N.T. Marg, Indore, MP – 452001 Landline No.: 0731-4050174 Email: jimmy@infisolutions.org Website: www.infisolutions.org

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The purpose of project activity is to implement renewable grid connected Solar energy projects in the country. The project activity is a voluntary action and SB Energy Private Limited is the Project Proponent for this project activity. There are no mandatory laws or regulations existing in India requiring PP or any other party to develop a programme for renewable generation plants.

The electricity generated by the project renewable energy technology (solar PV) is supplied to the regional grid there by displacing the consumption of electricity from the regional grid electricity distribution system which is part of Indian grid and predominantly by fossil fuel fired thermal power generation-based plants. Thus, serving the nation by contributing in sustainable development and reducing the anthropogenic GHG emissions equivalent to the generation by the project activity.

The monitoring period is from 01-January-2019 to 01-Feb-2020. The total GHG emission reductions or removals generated in this monitoring period are 673,926¹ tCO₂.

The proposed project activity involves the installation of Solar PV Power Projects. The total installed capacity of the project is 2,250 MW; which involves operation of Solar PV projects in multiple states of India. The project is promoted by following project owners which are as follows:

S.No.	Owner of Project/SPD	Project Location	State	Project Capacity (MW)	Commissioning Date
1	SBG Cleantech Project Co. Pvt Ltd	Kurnool	Andhra Pradesh	182	27/02/2017
				68	22/03/2017
				100	28/03/2017
2	SB Energy One Private Limited	Bhadla	Rajasthan	100	21/09/2018
				100	24/09/2018
				100	24/09/2018
3	SB Energy Three Private Limited	Bhadla	Rajasthan	20	04/10/2018
				20	04/10/2018
				30	18/09/2018
				30	18/09/2018
4	SB Energy Four Private Limited	Bhadla	Rajasthan	200	03/05/2019, 09/07/2019

¹ Generation from only one SPD i.e. "SBG Cleantech Project Co. Pvt Ltd" has been considered in this monitoring period, as out of 8 SPDs, 7 SPDs (Please refer section 1.9) are seeking registration under GS. Hence, PP has chosen to not consider the generation from these seven SPDs in this monitoring period.

5	SB Energy Solar Private Limited	Ananthapur	Andhra Pradesh	250	Yet to be commissioned
6	SB Energy Six Private Limited	Phalodi, Jaisalmer	Rajasthan	600	Yet to be commissioned
7	SB Energy Seven Private Limited	Kadappa	Andhra Pradesh	250	Yet to be commissioned
8	SBG Cleantech Project Co Five Private Limited	Pavagadaa	Karnataka	200	Yet to be commissioned

The electricity generated from **SBG Cleantech Project Co. Pvt Ltd** (350MW) project activity is sold under the Power Purchase Agreement (PPA), signed with NTPC Ltd.. NTPC has been identified by the Government of India (GoI) as the Implementation Agency for setting up of Grid-connected Solar PV Power Projects under State Specific Bundling Scheme under the National Solar Mission of Government of India (GoI). And NTPC Vidyut Vyapar Nigam Limited (NVVN) on behalf of NTPC will purchase Solar Power from Solar Power Developer, and sell it to State DISCOM i.e. to Grid.

These are the SPDs of SB Energy Private Limited and the project is promoted by SB Energy Private Limited. As on date, 950 MW capacity has been commissioned out of the total 2250 MW capacity. Nevertheless, PP has considered the electricity generation from only one SPD i.e. from “SBG Cleantech Project Co. Pvt Ltd” (350 MW) in this monitoring period.

1.2 Sectoral Scope and Project Type

The project activity under consideration is not a grouped project activity.

Sectoral Scope Applicable to project: 01 – Energy Industries (renewable/non-renewable Sources)

Project Type: I – Renewable Energy Projects

Title: ACM0002 Grid-connected electricity generation from renewable sources – Version 19
Reference: ACM0002 Version 19².

1.3 Project Proponent

Organization name	SB Energy Private Limited
Contact person	Mr N.P. Singh

² <http://cdm.unfccc.int/methodologies/DB/VJ19AX539D9MLOPXN2AY9UR1N4IYGD>

Title	General Manager- Assurance & Taxation
Address	5th Floor, NH-8, New Delhi- 110036, India.
Telephone	+91 9871114689
Email	npsingh@sbenergy.com

1.4 Other Entities Involved in the Project

Organization name	Infinite Solutions
Role in the Project	Project Consultant
Contact person	Mr. Jimmy Sah
Title	Head – Sustainability
Address	611, Chetak Centre Main, 12/2 RNT Marg, Indore- 452001
Telephone	+91-9644130430
Email	jimmy@infisolutions.org

1.5 Project Start Date

The first project activity under consideration was commissioned and power generation started on 27/02/2017.

Hence the project start date is considered as 27/02/2017.

1.6 Project Crediting Period

Project crediting period for project activity is taken as 10 years renewable twice.

Start date of the first crediting period: 27/02/2017

End date of the first crediting period: 26/02/2027

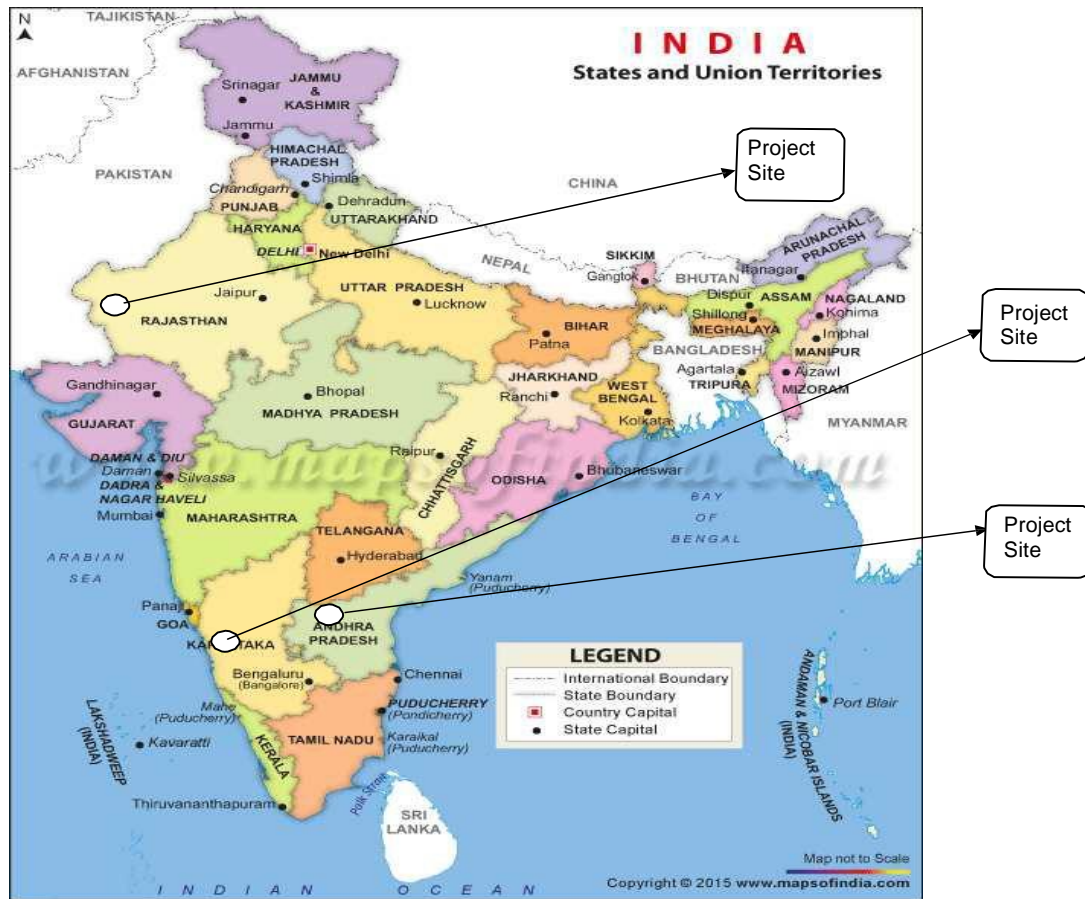
1.7 Project Location

The solar plants are located at various states of India and respective location is given below:

S.No.	Owner of Project/SPD	Project Location	State	Project Capacity (MW)	Geographical Coordinates
1	SBG Cleantech Project Co. Pvt Ltd	Kurnool	Andhra Pradesh	182	15°41'01.02"N - 78°17'00.44"E
				68	
				100	

2	SB Energy One Private Limited	Bhadla	Rajasthan	100	27°27'54.93"N - 71°59'38.96"E
				100	
				100	
3	SB Energy Three Private Limited	Bhadla	Rajasthan	20	27°31'53.94"N - 71°57'46.99"E
				20	
				30	
				30	
4	SB Energy Four Private Limited	Bhadla	Rajasthan	200	27°29'04.1"N - 72°01'25.1"E
5	SB Energy Solar Private Limited	Ananthapur	Andhra Pradesh	250	13°59'32.08"N - 78°25'26.92"E
6	SB Energy Six Private Limited	Phalodi, Jaisalmer	Rajasthan	600	26°57'12.41"N - 72°03'34.99"E
7	SB Energy Seven Private Limited	Kadappa	Andhra Pradesh	250	14°56'58.59"N - 78°13'12.84"E
8	SBG Cleantech Project Co Five Private Limited	Pavagadaa	Karnataka	200	14°13'26.44"N - 77°25'47.83"E

The map of project site is as indicated in the following figure:



1.8 Title and Reference of Methodology

Title : Grid-connected electricity generation from renewable sources

Reference : The project activity meets the eligibility criteria of large-scale project as it is more than 15 MW

Methodology : ACM0002: Grid-connected electricity generation from renewable sources - Version 19³

Type I : Energy industries (renewable / non-renewable sources)

Category : Approved Consolidated Methodology (ACM0002)

Tools referred with above methodology and applicable for project activity are:

Tool to calculate the emission factor for an electricity system⁴ - Version 07.0 (EB 100, Annex 04)

Methodological Tool- Tool for the demonstration and assessment of additionality⁵ - Version 07.0.0 (EB 70, Annex 08).

1.9 Participation under other GHG Programs

The project activity has not been registered under any other GHG program at this moment.

However, some (7 out of SPDs) of the SPDs of this project activity are seeking registration at this moment under other GHG programs. However, none of them is registered at this point of time.

Below is the list of SPDs under this project activity seeking registration under GS Mechanism:

S. No.	Owner of Project/SPD	Project Location	State	Project Capacity (MW)	Commissioning Date	Status under Gold Standard
1	SB Energy One Private Limited	Bhadla	Rajasthan	100	21/09/2018	GS7071: FVR Prepared
				100	24/09/2018	
				100	24/09/2018	
2	SB Energy Three Private Limited	Bhadla	Rajasthan	20	04/10/2018	
				20	04/10/2018	
				30	18/09/2018	
				30	18/09/2018	
3	SB Energy Four Private Limited	Bhadla	Rajasthan	200	27°29'04.1"N-72°01'25.1"E	GS7532

³ <http://cdm.unfccc.int/methodologies/DB/VJI9AX539D9MLOPXN2AY9UR1N4IYGD>

⁴ <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

⁵ <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-01-v7.0.0.pdf>

4	SB Energy Solar Private Limited	Ananthapur	Andhra Pradesh	250	Yet to be commissioned	Listed: https://impact.sustain-cert.com/public_projects/2193
5	SB Energy Six Private Limited	Phalodi, Jaisalmer	Rajasthan	600	Yet to be commissioned	https://impact.sustain-cert.com/public_projects/2195
6	SB Energy Seven Private Limited	Kadappa	Andhra Pradesh	250	Yet to be commissioned	https://impact.sustain-cert.com/public_projects/2201
7	SBG Cleantech Project Co Five Private Limited	Pavagadaa	Karnataka	200	Yet to be commissioned	https://impact.sustain-cert.com/public_projects/2194

1.10 Other Forms of Credit

As explained above, project SPDs have not been registered under any other GHG program as of yet. However, seven of the SPDs of this project activity mention in above section 1.9 are pursuing registration under other GHG program (Gold Standard).

Thus, the Project activity has considered only one SPD “SBG Cleantech Project Co. Pvt Ltd” installed capacity is 350 MW who has no intention and does not perusing registration to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program.

Therefore, PP has considered generation from only one SPD, “SBG Cleantech Project Co. Pvt Ltd”, for the calculation of Emission reduction.

Also, it can be crosschecked that PP is not claiming REC benefits from this SPD, “SBG Cleantech Project Co. Pvt Ltd”, the same can be verified with the REC accreditation body of India⁶.

1.11 Sustainable Development

The implementation of project activity ensures energy security, diversification of the grid generation mix and sustainable growth of the electricity generation sector in India by means of Solar PV technology.

Nevertheless, Ministry of Environment and Forests, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

⁶ https://recregistryindia.nic.in/index.php/publics/registered_regens

Social well-being: The project would help in generating employment opportunities during the construction and operation phases. The project activity will lead to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

Economic well-being: The project activity generates permanent and temporary employment opportunity within the vicinity of the project. The electricity supply in the nearby area improves which directly and indirectly improves the economy and life style of the area.

Technological well-being: The successful operation of project activity would lead to promotion of Solar based power generation and would encourage other entrepreneurs to participate in similar projects

Environmental well-being: Solar being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions. The project activity will generate power using zero emissions Solar PV based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities.

2 SAFEGUARDS

2.1 No Net Harm

The project activity does not cause any harm to the local ecology. It primarily requires the installation of the solar PV power project, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

Also, as per the Central Pollution Control Board of India notification⁷ Solar PV project falls under White Category and are practically non-polluting.

2.2 Local Stakeholder Consultation

The Local Stakeholder Meetings were organized for local stakeholder consultation and informed local stakeholder regarding the meeting. The followings are the local stakeholders for the project activity:

- Local community

⁷ http://envfor.nic.in/sites/default/files/Latest_118_Final_Directions.pdf

- Local village administration
- Technology suppliers
- Local vendors

All the stakeholders have been invited through public notice to attend the stakeholders meeting.

The project proponents organized stakeholders meeting in order to take into account the concerns of the nearby villagers regarding the project implementation. As a part of continuous feedback from stakeholders, there were no other major comments or protest raised by the stakeholders and they were totally in support for setting up of these kinds of projects in the region.

For the VCS project activity under consideration, stakeholder consultation was held at each of the project activity site. Relevant outcomes from respective stakeholder consultations for each of the projects are provided as follows:

SBG Cleantech ProjectCo Private Limited (350 MW): The stakeholder meeting for the VCS project activity at Kurnool was held at the plant site on September 12, 2015. Stakeholders were invited for the meeting by sending invitations in the form of notification in public places and by personalized invitations to key stakeholders such as government officials, panchayat representatives and other relevant organizations. Comments received from stakeholders during the meeting have been documented in the minutes of meeting document.

There were no negative comments received during the meeting and stakeholders appreciated proactive efforts taken by project proponent towards reducing emissions

For ongoing communication, the PP has also placed a grievance register onsite where in the stakeholder can put down his/her complain and the same if found genuine will be addressed immediately.

However, being solar PV based power generation project there is no feedback/grievance has been reported within this monitoring period. Therefore, no action has been undertaken.

2.3 AFOLU-Specific Safeguards

This section is not applicable to the project activity.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The proposed project activity involves the installation of Solar PV project. The total installed capacity of the project is 2,250⁸ MW; which involves installation of Solar PV projects of different capacities located in different states of India.

The project is promoted by SB Energy Private Limited, who will act as project proponent on behalf of all the individual SPD's.

However, it is to be noted that out of 8 SPD only 7 SPDs are seeking registration under GS Mechanism as explained in section 1.9, PP has considered electricity generation from only one SPD i.e. "SBG Cleantech Project Co. Pvt Ltd" for emission reduction calculation.

Solar PV Project Technology Details –

Technical specifications of 350 MW Solar PV Project by SBG Cleantech Project Co. Pvt Ltd are as follows:

Sr No.	Particulars	Details
1	Technology used	Polycrystalline
2	Rating of Solar Modules	310 to 320 Wp, Make- Trina Solar
3	Number of modules of each type	310 Wp- 264,840 315 Wp- 775,280 320 Wp- 402,360
4	Invertor	350 numbers of 1 MW each, make TMEIC
5	Transformer	175 nos.

Technical specifications of 300 MW Solar PV Project by SB Energy One Pvt. Ltd are as follows:

Sr No.	Particulars	Details
1	Technology used	Polycrystalline
2	Rating of Solar Modules	325 to 330 Wp

⁸ In this monitoring period only one SPD i.e. "SBG Cleantech Project Co. Pvt Ltd" has considered the generation for calculating emission reduction under VCS mechanism. All other SPDs are perusing registration under other GHG program. Hence, PP has not considered the generation from other commissioned SPDs. Also, some are yet to be commissioned.

3	Number of modules of each type	325 Wp- 492,398 (make Jienergy) 325 Wp- 325,874 (make CSUN) 330 Wp- 394,730 (make Jienergy)
4	Invertor	96 numbers of 3.125 MW, make Sungrow
5	Transformer	24 nos.

Technical specifications of 100 MW Solar PV Project by SB Energy Three Pvt. Ltd are as follows:

Sr No.	Particulars	Details
1	Technology used	Polycrystalline
2	Rating of Solar Modules	325 to 330 Wp
3	Number of modules of each type	325 Wp- 190,869 (Make- Jienergy) 330 Wp- 251,654 (Make- Jienergy)
4	Invertor	32 numbers of 3.125 MW, make Sungrow
5	Transformer	8 nos.

The other projects are still in pipeline and are yet to be commissioned. Hence, their technical specifications are yet to be finalized. The same will be updated in future verification once the projects are commissioned and actual technical specifications are finalized.

The estimated lifetime of the project activity is considered as 25 years for solar technology. This may increase depending on the operation & maintenance of the plant.

3.2 Deviations

3.3.1 Methodology Deviations

There are no methodological deviations applied during this monitoring period.

3.3.2 Project Description Deviations

Project deviation taken during the current monitoring period:

During the current monitoring period, PP has updated in the MR that out of 8 SPD, 7 SPDs are seeking registration under GS mechanism and details of the same has been provided under section 1.9 of the MR. Remaining one SPDs, which is not pursuing registration under any other GHG program and continuing under VCS mechanism are as follows: .

S.No.	Owner of Project/SPD	Project Location	State	Project Capacity (MW)	Geographical Coordinates
1	SBG Cleantech Project Co. Pvt Ltd	Kurnool	Andhra Pradesh	182	15°41'01.02"N - 78°17'00.44"E
				68	
				100	

However, the deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario.

There was no project description deviations applied in previous monitoring reports.

3.3 Grouped Projects

This section is not applicable to the project activity.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,OM,y}$
Data unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 13, June 2018
Value applied	0.9726
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07.0.0" as 3-year generation weighted average using data for the years 2014-2015, 2015-2016 & 2016 - 2017. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 13.0, published by the Central Electricity Authority, Ministry of Power, Government of India
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire first crediting period.

Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 13, June 2018

Value applied	0.8723
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per “Tool to calculate the emission factor for an electricity system, version 07” as per the latest data available for the most recent year 2016-17. The data is obtained from “CO ₂ Baseline Database for Indian Power Sector” version 13, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire first crediting period.

Data / Parameter	EF _{grid,CM,y}
Data unit	tCO ₂ /MWh
Description	Combined Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 13, June 2018
Value applied	0.9475
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per “Tool to calculate the emission factor for an electricity system, version 07.0.0”. The data is obtained from “CO ₂ Baseline Database for Indian Power Sector” Version 13, June 2018, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of Data	For the calculation of the Baseline Emission
Comments	This parameter is fixed ex-ante for the entire first crediting period.

4.2 Data and Parameters Monitored

Data / Parameter	EG _{facility,y}
Data unit	MWh
Description	Quantity of net electricity supplied (MWh) to the grid as a result of the implementation of the project activity in year y
Source of data	Credit Report /JMR as per Monthly Generation Report
Description of measurement methods and procedures to be applied	<p>Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually Archiving Policy: Paper & Electronic Calibration frequency: One in five years</p> <p>Electricity exported/imported to the grid is in kWh. However, for the calculation purpose electricity exported is converted in MWh.</p> <p>The Net electricity supplied to the grid by the project activity will be calculated as a difference of electricity exported to the grid, electricity imported from the grid obtained from joint meter reading</p>

	<p>certificates/credit notes issued by state electricity board as per below equation:</p> $EG_{\text{facility},y} = EG_{\text{Export}} - EG_{\text{Import}}$ <p>The joint reading at metering point is carried out once in a month in presence of O&M officials and state electricity board personnel. The calculations/measurement of net electricity supplied to grid is under purview of state electricity board and the PP/Project activity owner has no role on it. PP/Project activity owner will get value of net electricity supplied to grid and hence this parameter is mentioned as a part of monitoring plan.</p> <p>Cross Checking: Quantity of net electricity supplied to the grid will be cross checked from the invoices raised by the PP to the State Electricity Board or invoices with third party.</p>
Frequency of monitoring/recording	Continuous monitoring and monthly recording
Value monitored	711,267.88
Monitoring equipment	<p>Monitoring equipment will be energy meter installed at the project activity site. Readings will be cross checked with back up meter. The accuracy class of meters, calibration frequency of meters is totally under purview of state electricity board and PP does not have any control on it.</p> <p>For detailed schedule of calibration of energy meters used in the project activity please refer Appendix- 1.</p>
QA/QC procedures to be applied	<p>The calibration of all the meters will be undertaken once in five years⁹ and faulty meters will be duly replaced immediately. The meters will be of accuracy class 0.5s or higher. The meter accuracy class and calibration interval are under purview of state electricity board and PP/Project Activity owner do not have any control on it. It is also noted that apportioning procedure (if applicable for project activity) is under control of state electricity board and PP do not have any control on it. The available parameter to PP/project activity owner is the net electricity supplied to grid and same parameter is mentioned as monitoring parameter.</p>
Purpose of the data	Calculation of baseline emissions
Calculation method	The parameter is measured and if any calculation is required, the calculation is based on measured parameters
Comments	Data will be archived electronically for a period of 2 years beyond the end of crediting period

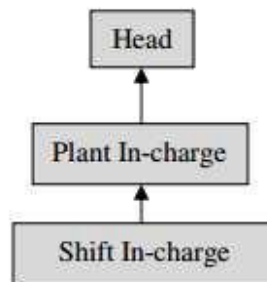
⁹ http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf

4.3 Monitoring Plan

The monitoring plan, which is implemented by the PP describes about the monitoring organisation, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data results with the PP. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipment for this project activity. The team comprises of the following members:

Organisational Structure for Monitoring



PP has assigned the responsibility of operation and maintenance of project activity with relevant and authorised O&M contractors. The Plant In-charge and Shift In-Charge would be deployed by O&M contractors.

Responsibilities of Head: Overall functioning and maintenance of the data.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data (calibration of equipment's).

Responsibilities of Shift In-charge: Responsibility for day to day data collection and maintains day to day log book for monitored data.

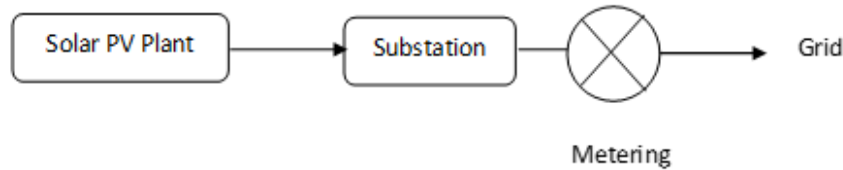
In the event when the individual verification period dates and billing cycle dates of the project activity do not coincide, then the electricity export will be apportioned based on number of days. The ratio of number of days under monitoring period and total number of days under billing cycle will multiplied to total electricity export to billing cycle.

For project activity which involves solar projects with common metering, apportioning will be followed to determine net electricity export to grid. The apportioning procedure is not under control of PP, thus value of net electricity supplied to grid is available to PP and same is mentioned as monitoring parameter. The value of net electricity supplied to grid is used for ER calculations.

It is to be noted that the metering arrangement, accuracy class of meters, feeder arrangements, calibration frequency of meters are under control of state electricity board and

PP does not have any control on it. Thus, any deviation at actual site or during verification is accepted.

Sample Line diagram of Solar PV project being followed at site is as follows:



QA & QC Procedures to be followed

Necessary check meters as required would be installed, to operate in standby mode or when the main meters are not working. All meters will be calibrated at least once in five year as per CEA notification. Records of calibration certificates will be maintained for verification. Hence, high quality is ensured with the above parameters. The calibration of meters is under purview of state electricity board and CME/ project activity owner do not have any control on it.

Data Recording and Storage

For measuring the net energy supplied to grid by the project activity at the interconnection point, one set of Main meter and Check Meter shall be provided. Representatives of both project activity Owner and State Utility will be present to record the monthly meter readings. The state utility will prepare the credit report for the net energy supplied to the grid and same will be used as a basic document for monitoring and verification of the net energy supplied to the grid. Based on the monthly credit report, the project activity Owner shall raise an invoice to the utility. Utility will pay to the project activity Owner based on this document.

The above document will be kept at safe storage for verification of emission reductions generated from the project activity. The period of data storage will be 2 years beyond crediting period.

Emergency preparedness

The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. However, in case monitoring equipment get failed or found faulty, they shall be replaced with calibrated meters as quickly as possible. In case main meter get failed or found faulty, the reading of check meter will be considered.

Personnel training

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff will be trained. The Shift In-charge and Plant In-charge will be trained in equipment operation, data recording, operation and maintenance and emergency procedures in compliance with the monitoring plant.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emission calculation for the project activity is attributable to the CO₂ Emission that could have been produced by the fossil fuel-based power plants in absence of the proposed project activity. Therefore, the amount electricity supplied to the Indian grid will be multiplied by the grid emission factor of Indian grid to calculate the baseline emissions reduced by the proposed project activity.

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

$$= 711,267.88 \times 0.9475 = 673,926.31 \text{ tCO}_{2e}$$

$$= 673,926 \text{ tCO}_{2e} \text{ (Rounded down Value)}$$

Where,

BE_y	=	Baseline Emissions in year y; tCO ₂
EG_{Pj,y}	=	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
EF_{grid,CM,y}	=	CO ₂ emission factor of the grid in year y; tCO ₂ /MWh

5.2 Project Emissions

As per methodology, for renewable energy projects, there is no any project emissions occurred.

Hence, PE_y = 0.

5.3 Leakage

As per methodology, for renewable energy projects, there is no any leakage emissions occurred.

Hence, LE_y = 0

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})
01/01/2019 to 31/12/2019 (2019)	626,090	0	0	626,090
01/01/2020 to 01/02/2020 (2020)	47,836	0	0	47,836
Total	673,926	0	0	673,926

It is to be noted here that as per the estimated emission reduction estimated from the project activity for the current monitoring period is 754,850¹⁰ tCO_{2e}, whereas actual emission reductions achieved are 673,926 tCO_{2e}, which is approximately 10.72% lower than the estimated emission reductions. The generation of electricity depends upon many other climatic conditions, and not within the control of the project participant. The minor difference in the generation during the current verification period is hence due to certain natural conditions and hence acceptable.

¹⁰ As explained in above sections of MR that PP has considered generation for only one SPD i.e. SBG Cleantech Project Co. Pvt Ltd in this monitoring period and thus this is the estimated emission reduction for SBG Cleantech Project Co. Pvt Ltd SPD only..

APPENDIX 1: < METER CALIBRATION DETAILS >

Particular	Meter Serial No.	Accuracy Class	Calibration Date	Validity	Recent Calibration Date	Validity
SBG Cleantech Project Co Pvt Ltd (350 MW)						
Pooling Station 203						
Main Meter	16196315	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024
Check Meter	16196317	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024
Pooling Station 204						
Main Meter	16196320	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024
Check Meter	16196328	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024
Pooling Station 206						
Main Meter	16196408	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024
Check Meter	16196417	0.2 s	20/02/2017	19/02/2022	17/10/2019	16/10/2024