

**Gold standard for the global goals**  
**Monitoring report**



June 2017, version 1

Title of the project	400 MW Solar Power Project at Bhadla, Rajasthan
Gold Standard project id	GS 7071
Version number of the monitoring report	03
Completion date of the monitoring report	27/03/2020
Date of project design certification	10/04/2020
Start date of crediting period	01/01/2019 <sup>1</sup>
Duration of this monitoring period	01/01/2019 to 31/08/2019 (Inclusive of both the dates)
Duration of previous monitoring period	Not Applicable
Project representative(s)	SB Energy Private Limited
Host Country	India
Certification pathway (activity certification/impact certification)	Impact Certification
SDG Contributions targeted (as per approved PDD)	<b>1 – SDG 7 – Affordable and Clean Energy</b> Contribution to Climate Security & Sustainable Development <b>2 – SDG 8 – Decent Work and Economic Growth</b> <b>3 – SDG 13 – Climate Action</b>
Gold Standard statement/product certification sought (GSVER/ADALYs/RECs etc.)	GSVER
Selected methodology(ies)	ACM0002- Grid-connected electricity generation from renewable sources Version 20.0 <sup>2</sup>
Estimated amount of annual average certified SDG impact (as per approved PDD)	779,933 tCO <sub>2e</sub> / annum (for SDG 13) 832,550 MWh/annum (for SDG 7) 1 training /annum and 10 people employed (for SDG 8)
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	608,592 tCO <sub>2e</sub> (for SDG 13) 649,658 MWh (for SDG 7) 19 training conducted and 28 people employed (for SDG 8)

<sup>1</sup> Since the project is being applied in retroactive stream, start date of crediting period has been considered from 01/01/2019 which is within two years from the design certification date.

<sup>2</sup> <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

## SECTION A. Description of project

### A.1. Purpose and general description of project

The purpose of the project activity is to generate power using renewable energy source (solar energy) and sell the power generated to the state grid. The project activity generates electricity using solar energy. The generated electricity is exported to the regional grid system, which is under the purview of the INDIAN electricity grid of India.

The project activity replaces anthropogenic emissions of greenhouse gases estimated to be approximately 779,933 tCO<sub>2</sub>e per year, thereon displacing 832,550 MWh/year amount of electricity from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel based power plant.

The total installed capacity of the current project activity is 400 MW, which involves operation of Solar PV Project in the state of Rajasthan in India. The project is promoted by SB Energy Pvt Ltd.

Project Investor	Project Type	Project Capacity	Date of Commissioning	State	Usage
SB Energy One Private Limited	Solar PV	100 MW	21-09-2018	Rajasthan	Sale to State Discom
		100 MW	24-09-2018		
		100 MW	24-09-2018		
SB Energy Three Private Limited		20 MW	04-10-2018		
		20 MW	04-10-2018		
		30 MW	18-09-2018		
		30 MW	18-09-2018		

The project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of renewable solar energy and further selling the generated energy to the Indian Grid. In this process, there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity is generated through sustainable means without causing any negative impact on the environment.

As per prior consideration guideline, the major Milestone of Project activity are as below:

1. The PP decided to implement the project activity on 01/09/2017
2. The erection and commissioning agreement for Solar project between Mahindra Susten Private Limited and SB Energy One Pvt. Ltd on 12/03/2018.
3. The erection and commissioning agreement for Solar project between Sterling & Wilson Private Limited and SB Energy One Pvt. Ltd on 12/03/2018.
4. The initial PPA is signed on 06/10/2017 between Solar Energy Corporation of India Limited and SB Energy One Private Limited.
5. The initial PPA is signed on 06/10/2017 between Solar Energy Corporation of India Limited and SB Energy Three Private Limited.
6. The project initial documents like GS4GG PDD, Cover Letter, ODA letter and Terms and conditions are submitted to GS on 06/11/2018 for preliminary review purpose.

In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

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During the current monitoring period 01/01/2019 to 31/08/2019 (Inclusive of both the dates), the project resulted in emission reductions of 608,592 tCO<sub>2</sub>e and underwent continued operation other than scheduled maintenance and breakdowns.

Vintage wise emission reduction during the entire Monitoring Period are as follows:

Period	Amount
01/01/2019 to 31/08/2019	608,592

## A.2. Location of project

This Project activity is located in village Bhadla, District Jodhpur, Rajasthan.

Details of the location of the Project Activity:

Project Investor	Project Capacity	Latitude	Longitude
SB Energy One Pvt Ltd	300	27°10'38.06"	71°55'49.16"
SB Energy Three Pvt Ltd	100		

Both the solar plant of respective project investor are located at a single region and the details are as follows<sup>3</sup>:

Location of the Plant	Village - Bhadla, Tehsil - Phalodi, District- Jodhpur, State-Rajasthan
Location details	Latitude : 27°31'3.36"N Longitude : 71°55'49.44" E Elevation :180 m above MSL
Distance from District Headquarter	159 km from Jodhpur
Access by Road	Connected by Road- NH65
Access by Rail	Nearest Railway station- Phalodi: 83 km
Access by Air	Nearest Airport – Jodhpur
Telecommunication	Fairly available
Land	Approximately 140ha land available for 70 MW Solar PV plant.
Climate	Annual Rainfall – 3 mm Max Temp: 50°C Min Temp: -3°C Max Relative Humidity: 100 % Min Relative Humidity: 5% Wind Speed: 1.4 M/s (Min) to 5.7 M/s (Max)

The location of the project activity has been highlighted in the map shown below:

<sup>3</sup> Sourced from DPR of the project activity.

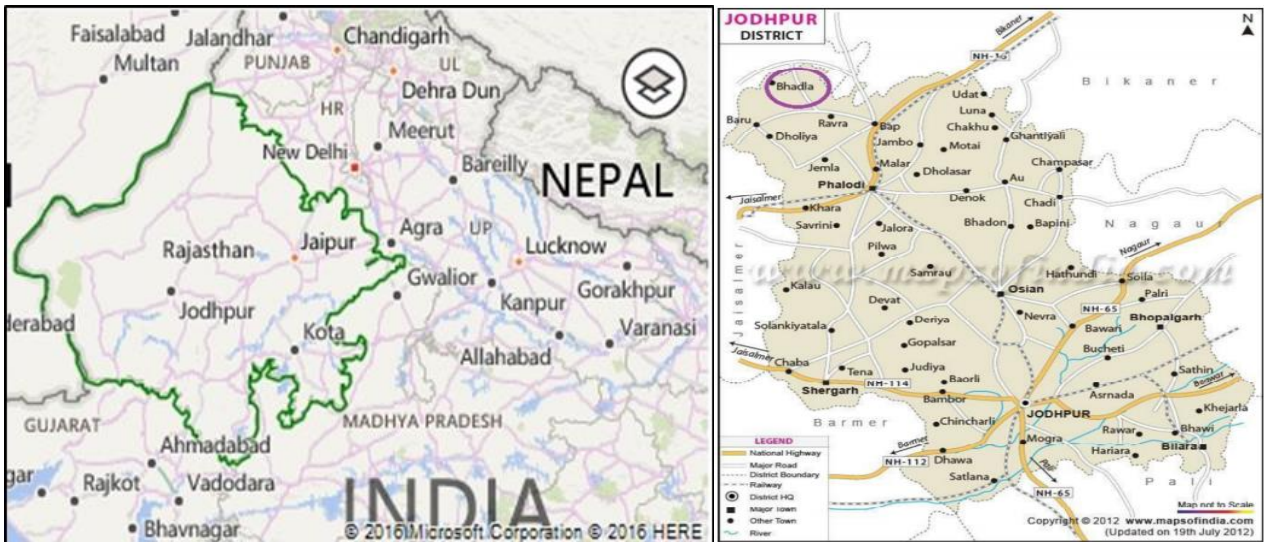


Figure 1. State and district Map of Rajasthan and Jodhpur

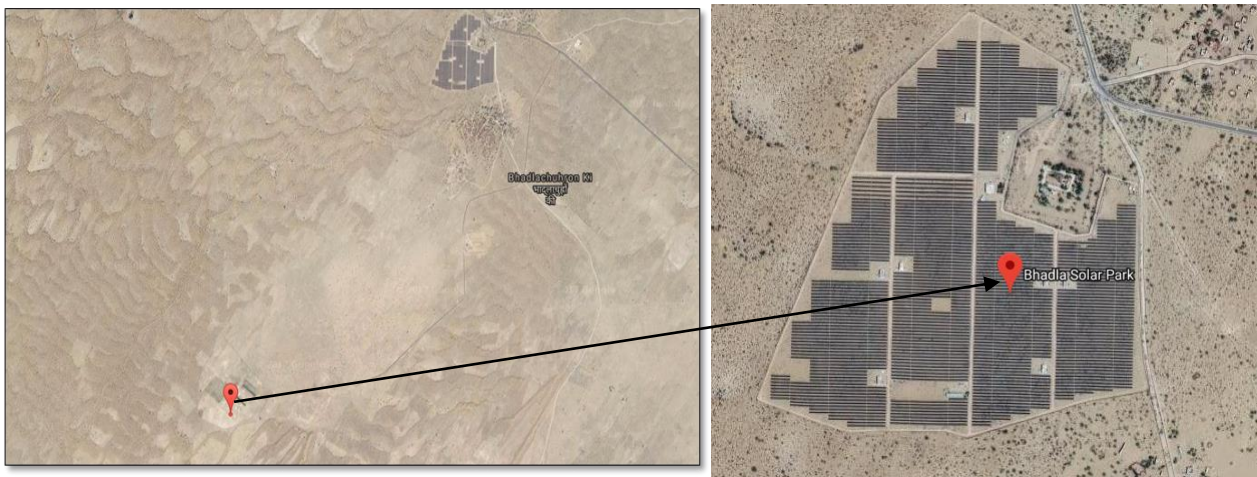


Figure 2: Site Location in Jodhpur

A.3. Reference of applied 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 20.0<sup>4</sup>
- 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 system<sup>5</sup> - Version 07.0 (EB 100, Annex 04)
- Methodological Tool- Tool for the demonstration and assessment of additionality<sup>6</sup> - Version 07.0.0 (EB 70, Annex 08)

<sup>4</sup> <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

<sup>5</sup> <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

- Methodological Tool- Investment analysis<sup>7</sup> - Version 09.0.0 (EB 101, Annex 11)

## A.4. Crediting period of project

Start date	01/01/2019
Crediting Period	01/01/2019 to 31/12/2023
Duration	5
Type	Renewable

## SECTION B. Implementation of project

### B.1. Description of implemented project

The total installed capacity of the project is 400 MW, which comprises of two projects owned by SB Energy One Pvt Ltd and SB Energy Three Pvt Ltd in Rajasthan.

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

Sr. No.	Particulars	Details
1.	Capacity of the Project	100 * 3 MW
2.	Technology used	Polycrystalline
3.	Rating of Solar Modules	325 to 330 Wp
4.	Angle from horizontal at which the array is installed	20°
5.	Number of modules of each type	325 Wp- 2,64,840 Nos 330 Wp- 1,78,650 Nos
6.	Source of modules installed of each type	Jinergy solar in type
7.	Number of invertors installed	32 numbers
8.	Rating of invertors	3.125 MVA
9.	Date of installation of full capacity	19-09-2018
10.	PV Arrays	100 %
11.	Invertors	100 %
12.	Transformers	100%

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

Sr. No.	Particulars	Details
1.	Capacity of the Project	50 * 2 MW

<sup>6</sup> <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

<sup>7</sup> <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v7.0.pdf>

2.	Technology used	Polycrystalline
3.	Rating of Solar Modules	325 to 330 Wp
4.	Angle from horizontal at which the array is installed	20°
5.	Number of modules of each type	325 Wp- 34,920 Nos 330 Wp- 60,250 Nos
6.	Source of modules installed of each type	Jinergy solar in
7.	Number of invertors installed	16 numbers
8.	Rating of invertors	3.125 MVA
9.	Date of installation of full capacity	04-10-2018
10.	PV Arrays	100 %
11.	Invertors	100 %
12.	Transformers	100%

## **B.2. Post-registration changes**

### **B.2.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline.**

There is no request for deviation applied during this monitoring period.

### **B.2.2. Corrections**

There have not been any corrections to project information or parameters fixed at validation during the current monitoring period.

### **B.2.3. Changes to start date of crediting period**

Not Applicable as there has been no changes to the start date of crediting period.

### **B.2.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

Not Applicable.

### **B.2.5. Changes to project design of approved project**

There has not been any change in the PDD during the current monitoring period.

## **SECTION C. Description of monitoring system applied by the project**

The monitoring methodology specified in the methodology requires that the project-monitoring plan to consist of monitoring of quantity of net electricity supplied to the grid in the year  $y$ . In order to monitor the mitigation of GHG due to the project activity, the total energy exported needs to be measured. The net

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energy supplied to grid by the project activity multiplied by emission factor for regional grid, would form the baseline for the project activity.

Since the baseline emission factor is based on an ex-ante determination, monitoring of this parameter is not required. The sole parameter for monitoring is the net electricity exported to the grid.

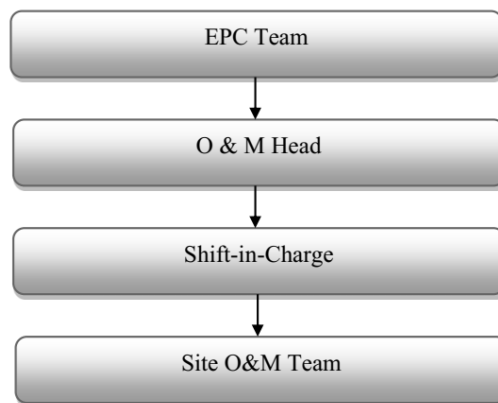
## Monitoring roles and responsibilities

The operational and management structure implemented for data monitoring is as follows:

The monitoring plan is developed in accordance with the modalities and procedures for project activities and is proposed for grid-connected solar power project being implemented within India territory. The monitoring plan, which is implemented by the project proponent 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 monitoring, measurement, reporting and reviewing of the data rests with the project proponent. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipments for this project activity.

The team comprises of the following members:



**Responsibilities of O & M Head:** Overall functioning and maintenance of the project activity and overall responsibility of compliance with the Monitoring Plan.

**Responsibilities of Plant In-charge:** Responsibility for Maintains the data records, ensures completeness of data, and reliability of data. Regularly verifying the monthly energy generation date with energy sales receipt or installed meters reading for identification of any discrepancies in data collection and taking suitable action to rectify them.

**Responsibilities of Shift In-charge:** Responsibility for day-to-day data collection and maintains day-to-day logbook for monitored data. Responsibility for monthly and annual report generation. Quality assurance of the data/reports and preliminary check of data for any discrepancies.

## QA/QC procedures:

The energy meters at the feeders are maintained and owned by state electricity board. Neither the project proponent nor the site personnel have any control over it. The records are cross-checked with the records of sold electricity to state electricity board. The meters are calibrated by state electricity board at-least once in five years.

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## **Data Measurement:**

The export and import energy is measured continuously using above-mentioned Main & Check meters. Export & Import readings of Main & Check meters are taken on monthly basis by authorized officer of state electricity board in the presence of PP or representative of PP. The meter reading is taken jointly and signed by the representatives of the state electricity board and project investors. Based on the readings, invoices is raised by project investors. These invoices can be used for cross checking the meter readings taken for the project activity. It is to be noted though PP or PP representative is available during meter reading, the calculations of net electricity supplied to grid is completely under purview of state electricity board officer and PP do not have any control on it. In addition, accuracy class of meters and calibration frequency is under purview of state electricity board officer and PP do not have any control on it. PP got the monthly credit report from where net electricity supplied to grid is obtained and used for emission reduction calculations.

## **Apportioning:**

In case of common metering arrangement, state electricity board is apportioning and PP is getting break up sheet where the energy supplied by project activity to grid is mentioned.

The same break up sheet is used for invoice purpose. This apportioning process is under control of state electricity board and PP do not have any control on it.

## **Data Archiving:**

Monthly data are archived electronically and in paper form and stored for the entire crediting period and two years thereafter.

## **Emergency preparedness:**

The project activity does not result in any unidentified activity that can result in substantial emissions from the project activity. No need for emergency preparedness in data monitoring is visualized.

In the event that the main meter, which is used to record the net electricity exported by the project, is found to be faulty is repaired or replaced and the data from the check meter is used in its place. In the unlikely event that the check meter fails, it will also be repaired or replaced.

## **Training and maintenance requirements:**

Each and every site personnel is provided with proper training to meet the requirements of the Operations and maintenance. This ultimately leads to creativity in problem solving and increases efficiency.

## **Personnel training:**

In order to ensure a proper functioning of the project activity and a properly monitoring of emission reductions, the staff (Solar team) is trained. The plant helpers are trained in equipment operation, data recording, reports writing, operation and maintenance and emergency procedures in compliance with the monitoring plan.

## **Apportioning:**

In case of mismatch of date between the start date of the billing cycle and the start date of monitoring period the data will be apportioned in line to the daily generation values for the said mismatch period.

### D.1. Data and parameters fixed ex ante or at renewal of crediting period

- a. SDG13: Climate Action: The project would lead to reduction of approx. 779,933 tCO<sub>2</sub>e per annum
- b. SDG 7: Affordable and Clean Energy: The project is expected to generate 832,550 MWh of clean energy per annum
- c. SDG 8: Decent Work and Economic Growth: The project provides employment to around 10 persons

<b>Relevant SDG Indicator</b>	<b>SDG 13</b>
<b>Data/parameter:</b>	<b>EF<sub>grid,OM,y</sub></b>
Unit	tCO <sub>2</sub> /MWh
Description	Operating Margin CO <sub>2</sub> emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018 <sup>8</sup>
Value(s) applied)	0.9610
Choice of data or measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most three recent years 2015-16, 2016-17 and 2017-18. The data is obtained from "CO <sub>2</sub> Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

<b>Relevant SDG Indicator</b>	<b>SDG 13</b>
<b>Data/parameter:</b>	<b>EF<sub>grid,BM,y</sub></b>
Unit	tCO <sub>2</sub> /MWh
Description	Build Margin CO <sub>2</sub> emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018
Value(s) applied)	0.8644
Choice of data or measurement methods and procedures	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 2017-18. The data is obtained from "CO <sub>2</sub> Baseline Database for Indian Power Sector" version 14, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

<b>Relevant SDG Indicator</b>	<b>SDG 13</b>
<b>Data/parameter:</b>	<b>EF<sub>grid,CM,y</sub></b>
Unit	tCO <sub>2</sub> /MWh
Description	Combined Margin CO <sub>2</sub> emission factor in year y
Source of data	Calculated from CEA database, Version 14, Dec 2018
Value(s) applied)	0.9368
Choice of data	The combined margin emissions factor is calculated as follows:

<sup>8</sup> [http://www.cea.nic.in/reports/others/thermal/tpece/cdm\\_co2/user\\_guide\\_ver14.pdf](http://www.cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver14.pdf)

or measurement methods and procedures	$EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ <p>Where:  <math>EF_{grid,BM,y}</math> = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)  <math>EF_{grid,OM,y}</math> = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)  <math>W_{OM}</math> = Weighting of operating margin emissions factor (%) = 75%  <math>W_{BM}</math> = Weighting of build margin emissions factor (%) = 25%</p>
Purpose of data	For the calculation of the Baseline Emission
Additional comments	This parameter is fixed ex-ante for the entire crediting period.

## D.2. Data and parameters monitored

Relevant SDG Indicator	7.2.1 Renewable energy share in the total final energy consumption	
Data/parameter:	EGPJ, y	
Unit	MWh	
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh	
Measured/calculated/default	Measured	
Source of data	Monthly joint meter reading reports	
Value(s) of monitored parameter	649,658	
	Year	Net power generated
	2019	649,658
Monitoring equipment	Main Meters & Check Meters	
Measuring/reading/recording frequency:	Monthly recording	
Calculation method (if applicable):	<p>Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh</p> <p>Common metering at the substation: All the plants (including the project activity solar plant and other investors solar plant) are connected to a Pooling substation 132/220 KV GSS II and further electricity is transferred to 220/400 KV RRVPNL substation. The common metering point at RRVPNL substation consists of both main &amp; check meters (ABT Meters) having accuracy class of 0.2s. The export/import losses between these two substations are apportioned based on pooling substation readings.</p> <p>For detailed schedule of calibration of energy meters during current monitoring period please refer annexure 1.</p> <p>The difference of final apportioned value of export and import is used for monthly values of net electricity supplied to the grid by the project activity and same value is considered for ER calculations.</p>	
QA/QC procedures:	<p>The meters is approved, tested &amp; sealed by the State Utility. The meters are in the custody of State Utility. The frequency of calibration is once in 5 years<sup>9</sup>. The monthly electricity supplied/exported by the project activity in the JMR report is crosschecked with the monthly invoices of sale. In the absence or delay in the meter calibration, appropriate Guidelines are applied appropriately to confirm the conservativeness of metering.</p> <p>The metering arrangement, accuracy class of meters, calibration frequency is under control of state electricity board and PP do not have any control on it. PP is getting value of net electricity supplied to grid and the same is considered the monitoring parameter.</p>	

<sup>9</sup> [http://www.aegcl.co.in/Metering\\_Regulations\\_Of\\_CEA\\_17\\_03\\_2006.pdf](http://www.aegcl.co.in/Metering_Regulations_Of_CEA_17_03_2006.pdf)

	The billing is raised based on substation meters.
Purpose of data:	To Monitor the SDG 7 Indicator
Additional comments:	Data is archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later.

<b>Relevant SDG Indicator</b>	<b>SDG 13</b>	
<b>Data/parameter:</b>	<b>ER<sub>y</sub></b>	
Unit	tCO <sub>2e</sub> /year	
Description	Emission reductions achieved per year	
Measured/calculated/default	Calculated	
Source of data	As per Actual Emission Reduction sheet	
Value(s) of monitored parameter	608,592	
	<b>Year</b>	<b>Emission Reductions achieved</b>
	2019	608,592
Monitoring equipment	Not Applicable	
Measuring/reading/recording frequency:	Monthly recording	
Calculation method (if applicable):	The baseline emissions are the product of electrical energy baseline E <sub>GP,y</sub> expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.	
QA/QC procedures:	Not Applicable	
Purpose of data:	To Monitor the SDG 13 Indicator	
Additional comments:	Data is archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS-VERs for this project activity, whichever occurs later	

<b>Relevant SDG Indicator</b>	<b>8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</b>		
<b>Data/parameter:</b>	<b>Number of employment generation and Salary</b>		
Unit	Number		
Description	Number of people employed directly due to the project activity		
Measured/calculated/default	-		
Source of data	Plant records, Salary slips or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc.		
Value(s) of monitored parameter	2019 : 28 Further below is the breakup of employment generated during the monitoring period		
	<b>Year</b>	<b>Skilled</b>	<b>Unskilled</b>
	2019	22	6
			<b>Total</b>
			28
	PP has provided salary slips and employment agreement of persons directly getting employment opportunity from the project activity. Further the average hourly earnings of a person are higher than the local level. For e.g a person is getting a monthly salary of INR 62,000 then his average hourly earnings will be as follows: = 62,000/ (30*7) = INR 210.		

	<p>This is higher than the average wage per hour in India (Average hourly earning of highly skilled workers for Zone C is INR 26.85<sup>10</sup>).</p> <p>Further the same has been crosschecked by the VVB during on site visit by means of attendance register and physical interviews and Salary Slips. The Project thus provides employment opportunities and pays salaries and welfares and also helps to increase the income and living standards of the employees.</p>
Monitoring equipment	-
Measuring/reading/recording frequency:	Monthly monitoring and annual recording
Calculation method (if applicable):	<p>The total number of persons working in the plant is being calculated based on the daily log available at site.</p> <p>This parameter also monitor number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women.</p> <p>"The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, local/non-local etc. In addition, it is ensued that peoples get equal payment for equal work. The payment is based on work and no any gender inequality for payment for work of equal value".</p> <p>Further for all kind of jobs local people would be given preference based upon their competency level.</p>
QA/QC procedures:	The number of persons employed is mentioned in the plant register, which can be crossed checked with attendance register.
Purpose of data:	To Monitor the SDG 8 Indicator
Additional comments:	-

<b>Relevant SDG Indicator</b>	<b>8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training</b>																																		
<b>Data/parameter:</b>	<b>Quality of Employment</b>																																		
Unit	-																																		
Description	Training of Staff																																		
Measured/calculated/default	-																																		
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc.																																		
Value(s) of monitored parameter	<p>2019: 19</p> <p>Below is the schedule of Trainings conducted during the current monitoring period:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sr No</th> <th>Topic</th> <th>Date</th> <th>Number of Participant</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Electrical shock Mock drill</td> <td>14/02/2019</td> <td>21</td> <td>1 hour</td> </tr> <tr> <td>2</td> <td>Awarness training on Tobacco &amp; Alcohol</td> <td>21/02/2019</td> <td>26</td> <td>45 mints</td> </tr> <tr> <td>3</td> <td>First aid training on Snake bite</td> <td>23/04/2019</td> <td>14</td> <td>1 hour</td> </tr> <tr> <td>4</td> <td>Manual Handling</td> <td>22/04/2019</td> <td>23</td> <td>45 mints</td> </tr> <tr> <td>5</td> <td>Earth Day</td> <td>24/04/2019</td> <td>23</td> <td>45 mints</td> </tr> </tbody> </table>					Sr No	Topic	Date	Number of Participant	Duration	1	Electrical shock Mock drill	14/02/2019	21	1 hour	2	Awarness training on Tobacco & Alcohol	21/02/2019	26	45 mints	3	First aid training on Snake bite	23/04/2019	14	1 hour	4	Manual Handling	22/04/2019	23	45 mints	5	Earth Day	24/04/2019	23	45 mints
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<sup>10</sup><https://clc.gov.in/clc/min-wages>

	Importance			
6	PPES Importance	24/04/2019	13	30 mints
7	Awareness training on Tobacco day	31/05/2019	34	2 hours
8	HT Cable Laying SOP	19/07/2019	10	1 Hours
9	Defensive Driving	25/07/2019	13	1 hours
10	Basic Hygiene	30/07/2019	3	1 hours
11	Arc Flash Training	03/06/2019	5	1 hours
12	First Aid	23/06/2019	23	8 hours
13	Working with Electrical Appliances	24/06/2019	20	8 hours
14	Emergency Response Preparedness	25/06/2019	20	8 hours
15	Awareness Training on ISO 45001	26/06/2019	23	8 Hours
16	Unsafe act, Unsafe Condition & PTW Training	06/07/2019	11	2 Hours
17	Safety Awareness Session	27/07/2019	14	1.5 hours
18	Fire Fighting Training	08/08/2019	9	2 hours
19	HT Panel Training	11/08/2019	5	45 mints
Monitoring equipment	-			
Measuring/reading/recording frequency:	Annual recording			
Calculation method (if applicable):	Together with the technology supplier, the Project organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.			
QA/QC procedures:	The training records for all the employees			
Purpose of data:	To Monitor the SDG 8 Indicator			
Additional comments:	-			

### D.3. Implementation of sampling plan

Not Applicable

## SECTION E. Calculation of SDG outcomes

### E.1. Calculation of baseline value or estimation of baseline situation of each SDG outcome

#### For SDG 7 and SDG 13

As per the approved methodology ACM0002, Version 20.0 (EB 105, Annex 3), CDM Sectoral Scope: 01, baseline emissions for the project activity is calculated by multiplying the net quantity of electricity supplied by this project activity ( $EG_{PJ,y}$ ) with the CO<sub>2</sub> baseline emission factor for the electricity displaced due to the project ( $EF_{grid,CM,y}$ ) as follows:

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

Where,

$EF_{grid,CM,y}$	=	Combined margin CO <sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of "TOOLo7: Tool to calculate the emission factor for an electricity system" (t CO <sub>2</sub> /MWh)
$EG_{PJ,y}$	=	Net electricity supplied to the Indian grid (MWh)
$BE_y$	=	Baseline emissions in year y (tCO <sub>2</sub> )

## Baseline emissions

$$\begin{aligned}
 BE_y &= EG_{PJ,y} \times EF_{grid,CM,y} \\
 &= 649,658 * 0.9368 \\
 &= 608,592 \text{ tCO}_2\text{e (round down value)}
 \end{aligned}$$

## For SDG 8

Employment opportunities created for 28 persons and 19 trainings conducted during the current monitoring period.

### E.2. Calculation of project value or estimation of project situation of each SDG outcome

779,933 tCO<sub>2e</sub> / annum (for SDG 13)

832,550 MWh (for SDG 7)

1 training /annum and 10 people employed (for SDG 8)

### E.3. Calculation of net benefits as difference of baseline and project values or direct calculation for each SDG outcome

No	1	
Indicator	<b>8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</b>	
Mitigation measure	N.A.	
Chosen parameter	No. of staff employed in the project activity	
Current situation of parameter	Employment has been generated during the current monitoring period, which can be checked from the employee record and the salary slips provided. During the current monitoring period, 28 people are employed due to project activity. 2019- 28	
Estimation of baseline situation of parameter	N.A.	
Future target for parameter	Hiring of skilled and unskilled personnel in the plant and providing specific trainings to them	
Way of monitoring	How	Employee rolls, pay-slips, attendance registers, etc.
	When	Annually
	By who	Monitored by the project owner

No	2	
Indicator	<b>8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training</b>	
Mitigation measure	N.A.	
Chosen parameter	Training of Staff	
Current situation of parameter	Training has been given to employees for skilled as well as unskilled jobs during the current monitoring period, which can be checked from the training records provided. During the current monitoring period, 19 trainings are being conducted. 2019- 19	
Estimation of baseline situation of parameter	N.A.	

Future target for parameter		Hiring of skilled and unskilled personnel in the plant and providing specific trainings to them
Way of monitoring	How	Training records, attendance registers, etc.
	When	Annually
	By who	Monitored by the project owner

No	3	
Indicator	<b>7.2.1 Renewable energy share in the total final energy consumption</b>	
Mitigation measure	N.A.	
Chosen parameter	Net energy generation by power plant	
Current situation of parameter	The net electricity generation during this monitoring period is 649,658 MWh, which is higher than the estimated.	
Estimation of baseline situation of parameter	N.A.	
Future target for parameter	The future target for parameter is that the annual net electricity generation will be 832,550 MWh/year.	
Way of monitoring	How	Interviews with the local inhabitants near the project sites about change in power generation and quality of electricity supplied
	When	Ongoing, monitored at least annually
	By who	Monitored by the project owner

No	4	
Indicator	SDG 13	
Mitigation measure	N.A.	
Chosen parameter	Emission reductions achieved per year	
Current situation of parameter	The net emission reductions resulted during this monitoring period is 608,592 tCO <sub>2</sub> e, which is higher than the estimated.	
Estimation of baseline situation of parameter	N.A.	
Future target for parameter	The future target for parameter is that the annual emission reductions should be 779,933 tCO <sub>2</sub> e/year.	
Way of monitoring	How	Interviews with the local inhabitants near the project sites about change in power generation and quality of electricity supplied
	When	Ongoing, monitored at least annually
	By who	Monitored by the project owner

#### E.4. Summary of ex-post values of each SDG outcome for the current monitoring period

Item	Baseline estimate	Project estimate	Net benefit
<b>SDG 7: Affordable and Clean Energy</b>	-	649,658 MWh	649,658 MWh
<b>SDG 8: Decent Work and Economic Growth</b>	-	No. of employment opportunities created: 28 No. of trainings given: 19	No. of employment opportunities created: 28 No. of trainings given: 19
<b>SDG 13: Climate Action</b>	608,592 tCO <sub>2</sub> e	-	608,592 tCO <sub>2</sub> e

#### E.5. Comparison of actual value of outcomes with estimates in approved PDD

Item	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
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<b>SDG 7: Affordable and Clean Energy</b>	554,273 MWh	649,658 MWh		
<b>SDG 8: Decent Work and Economic Growth</b>		No. of employment opportunities created: 28		
		Further below is the breakup of employment generated during the monitoring period		
		Year	Skilled	Unskilled
	2019	22	6	28
		No. of trainings given: 19		
<b>SDG 13: Climate Action</b>	519,243 tCO <sub>2e</sub>	608,592 tCO <sub>2e</sub>		

## E.6. Remarks on difference from estimated value in approved PDD

The emission reductions as per the registered PDD for the current monitoring period is estimated to be 519,243 tCO<sub>2e</sub> whereas during the current monitoring period the emission reductions claimed are 608,592 tCO<sub>2e</sub>, which is approximately 17% higher than the estimated emission reductions for the same monitoring period.

During the present monitoring period, the project witnessed an increase of 17% in emission reductions as compared to ex-ante emissions. This is mainly due to favourable environmental condition and not in control of PP during the current monitoring period from January 2019 to August 2019 which involved higher solar isolation.

## SECTION F. Stakeholder inputs and legal disputes

### F.1. List all inputs/grievances which have been received for the project during the monitoring period together with their respective answers/actions

As a part of continuous feedback from stakeholders, the grievances register is placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at site office.

Some of the inputs about the project/grievances and their resolution dates are shown below:

S. No.	Date of Complaint	Topic	Date of resolution	Remark from PP
1	03/02/2019	Street light is not available at site	05/02/2019	Street lights were installed.
2	09/06/2019	Garden is in poor condition	12/06/2019	A gardener was hired to take care of the garden at the site

### F.2. List all inputs/grievances from previous monitoring period where follow up action is to be verified in this monitoring period

Not Applicable

## F.3. Provide details of any legal contest or dispute that has arisen with the project during the monitoring period

Not Applicable

### Annexure 1: Calibration Details

For SB Energy One Private Limited:

Meter Number	Accuracy Class & Make	Calibration Date	Due Date of Calibration	Calibration Date	Due date of Calibration
For Plot L1 A					
2843291 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843292 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843293 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
For Plot L1 B					
2843294 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843295 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843296 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
For Plot L1 C					
2843297 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843298 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
2843299 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024
For Plot L1 D					
2843300 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	14/09/2019	13/09/2024
2843301 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	14/09/2019	13/09/2024
2843302 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	13/09/2019	12/09/2024

Meter Number	Accuracy Class & Make	Calibration Date	Due Date of Calibration	Calibration Date	Due date of Calibration
For Plot L4 A					
2843327 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843328 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843329 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
For Plot L4 B					
2843330 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843331 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843332 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
For Plot L4 C					
2843333 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843334 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843335 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
For Plot L4 D					
2843336 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843337 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024
2843338 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	14/09/2019	13/09/2024

Meter Number	Accuracy Class & Make	Calibration Date	Due Date of Calibration	Calibration Date	Due date of Calibration
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	Make				
For Plot L5 A					
2843339 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2843340 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861545 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
For Plot L5 B					
2861546 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861547 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861548 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
For Plot L5 C					
2861549 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861550 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861551 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
For Plot L5 D					
2861552 (MM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2861553 (CM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024
2843326 (SM)	0.2 s, Elster	17/09/2018	16/09/2023	15/09/2019	14/09/2024

**For SB Energy Three Private Limited:**

Meter Number	Accuracy Class & Make	Calibration Date	Due Date of Calibration	Calibration Date	Due date of Calibration
For Plot P2F1					
RJB92278 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	25/09/2019	24/09/2024
RJB92275 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	25/09/2019	24/09/2024
RJB92281 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	25/09/2019	24/09/2024
For Plot P2F2					
RJB92279 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92276 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92282 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	25/09/2019	24/09/2024
For Plot P2F3					
RJB92280 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92277 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92283 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024

Meter Number	Accuracy Class & Make	Calibration Date	Due Date of Calibration	Calibration Date	Due date of Calibration
For Plot P3F1					
RJB92288 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92289 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92292 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
For Plot P3F2					
RJB92285 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92284 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92291 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
For Plot P3F3					
RJB92286 (MM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92287 (CM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024
RJB92290 (SM)	0.2 s, Elster	16/09/2018	15/09/2023	24/09/2019	23/09/2024

