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**TEMPLATE**

# MONITORING REPORT

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VERSION **v. 1.1**

RELATED SUPPORT- **TEMPLATE GUIDE Monitoring Report v. 1.1**

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Key Project Information

0 - Description of project

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## KEY PROJECT INFORMATION

### Key Project Information

<b>GS ID (s) of Project (s)</b>	GS7071
<b>Title of the project (s) covered by monitoring report</b>	400 MW Solar Power Project at Bhadla, Rajasthan
<b>Version number of the PDD/VPA-DD (s) applicable to this monitoring report</b>	07
<b>Version number of the monitoring report</b>	03
<b>Completion date of the monitoring report</b>	18/04/2022
<b>Date of project design certification</b>	10/04/2020
<b>Date of Last Annual Report</b>	18/10/2021
<b>Monitoring period number</b>	3 <sup>rd</sup>
<b>Duration of this monitoring period</b>	1/10/2020 to 30/09/2021 (Inclusive of both the dates)
<b>Project Representative</b>	EKI Energy Services Limited
<b>Host Country</b>	India
<b>Activity Requirements applied</b>	<input type="checkbox"/> Community Services Activities <input checked="" type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
<b>~</b>	ACM0002- Grid-connected electricity generation from renewable sources - Version 20.0 <sup>1</sup>

<sup>1</sup><https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

<b>Product Requirements applied</b>	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
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**Table 1 - Sustainable Development Contributions Achieved**

Sustainable Development Goals Targeted	SDG Impact	Amount Achieved	Units/ Products
SDG 7 Affordable and Clean Energy	MWh of renewable energy generated	1,006,796.48	MWh
SDG 8 Decent work and Economic growth	Employment generation	20	Employed
	Training	09	Training
SDG 13 Climate Action	Verified Emission Reductions (VERs)	943,156	tCO <sub>2</sub> e

**Table 2 – Product Vintages**

Start Dates	End Dates	Amount Achieved		
		SDG 13		
01/10/2020	31/12/2020	225,084 tCO <sub>2</sub> e		
01/01/2021	30/09/2021	718,072 tCO <sub>2</sub> e		

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## SECTION A. DESCRIPTION OF PROJECT

### A.1. 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.
7. Listing of GS4GG PDD on Sustain-cert done on 08/01/2019

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.

During the current monitoring period 01/10/2020 to 30/09/2021 (Inclusive of both the dates), the project resulted in emission reductions of 943,156 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:	<b>Amount</b>
<b>Period</b>	
01/10/2020 to 31/12/2020	225,084
01/01/2021 to 30/09/2021	718,072

## 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>2</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)

<sup>2</sup>Sourced from DPR of the project activity.

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



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>3</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>4</sup> - Version 07.0 (EB 100, Annex 04)
- Methodological Tool- Tool for the demonstration and assessment of additionality<sup>5</sup> - Version 07.0.0 (EB 70, Annex 08)
- Methodological Tool- Investment analysis<sup>6</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

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<sup>3</sup><https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

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

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

<sup>6</sup><https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-27-v7.0.pdf>

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:

<b>Sr. No.</b>	<b>Particulars</b>	<b>Details</b>
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 <sup>0</sup>
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
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
2.	Technology used	Polycrystalline
3.	Rating of Solar Modules	325 to 330 Wp
4.	Angle from horizontal at which the array is installed	200
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.1.1 Forward Action Requests

One FAR had been raised during the previous verification. During this present monitoring period also the Covid pandemic scenario exists and separate stakeholders meeting could not have been arranged. During present verification period VVB interacted with the local stakeholders, whoever present at plant site and get their concerns and feedback.

#### B.2. Post-Design Certification changes

B.2.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or 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

The start date of crediting period under GS4GG has been changed to 01/01/2019

#### B.2.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

Not Applicable.

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

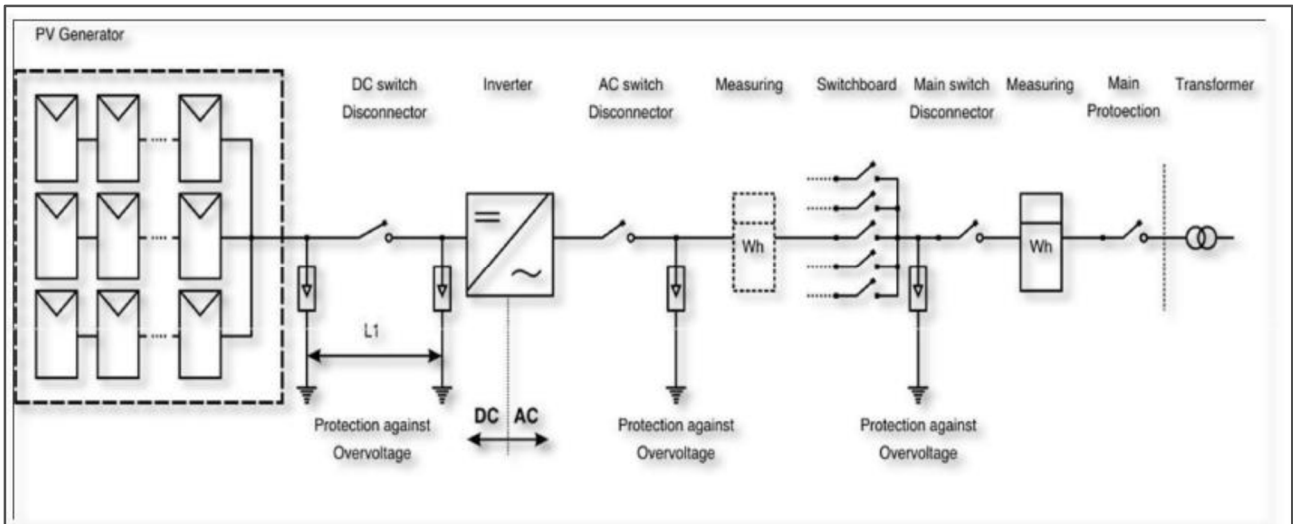
There has not been any change in the PDD during the current monitoring period.

### 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 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.

Single line diagram of the project is as below.



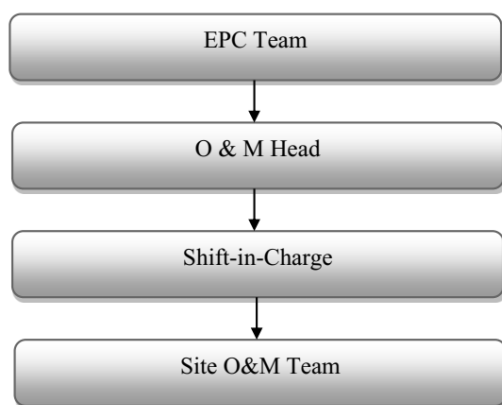
### Monitoring roles and responsibilities

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. Therecords 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.

**Data Measurement:**

The export and import energy are 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 readings are taken jointly and signed by the representatives of the state electricity board and project investors. Based on the

readings invoices are 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, it 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. Routine maintenance of string combiner box, inverters,

transformers are carried out during the present monitoring period and hence there is no such major breakdown occurs during the present monitoring period.

**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.

SECTION D. DATA AND PARAMETERS

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

<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 20187
Value(s) applied)	0.9610

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<sup>7</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)

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 or measurement methods and procedures	<p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid, BM,y} * W_{BM}$ <p>Where:</p> <p>EF<sub>grid,BM,y</sub>= Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)</p> <p>EF<sub>grid,OM,y</sub>= Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)</p> <p>W<sub>OM</sub> = Weighting of operating margin emissions factor (%) = 75%</p> <p>W<sub>BM</sub>= 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

<b>Relevant SDG Indicator</b>	<b>7.2.1 Renewable energy share in the total final energy consumption</b>	
<b>Data/parameter:</b>	<b>EG<sub>PJ, y</sub></b>	
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	Calculated	
Source of data	<p>Monthly joint meter reading reports.</p> <p>The data is being calculated based on measurements from more than one meter considering import/export and losses between two substations as multiple meters are involved in the project activity.</p> <p>Net electricity supplied to the grid is the difference of export, import and any other losses</p>	
Value(s) of monitored parameter	1,006,796.48	
	Period	Net power generated
	01/10/2020 to 31/12/2020	240,271.27
	01/01/2021 to 31/08/2021	766,525.21
Monitoring equipment	Main Meters & Check Meters	
Measuring/reading/recording frequency:	Continuous measurement and monthly recording	
Calculation method (if applicable):	Thus, Net electricity supplied to the grid by the project plant in a given month = Export, kWh – Import, kWh	

	Common metering at the substation: All the plants
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	(including the project activity solar plant and other
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	investors solar plant) are connected to a Pooling
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	substation 132/220 KV GSS II and further electricity is
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	transferred to 220/400 KV RRVNL substation. The
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	<p>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>
<p>QA/QC procedures:</p>	<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>8</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. 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> <p>The billing is raised based on substation meters.</p>
<p>Purpose of data:</p>	<p>To Monitor the SDG 7 Indicator</p>

<sup>8</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)

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.
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<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	943,156	
	Period	Emission Reductions achieved
	01/10/2020 to 31/12/2020	225,084
	01/01/2021 to 31/08/2021	718,072
Monitoring equipment	Not Applicable	
Measuring/reading/recording frequency:	Monthly recording	
Calculation method (if applicable):	The baseline emissions are the product of electrical energy baseline EG <sub>PJ,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	<p>2020 : 20</p> <p>2021 : 20</p> <p>Further below is the breakup of employment generated during the monitoring period</p> <table border="1" data-bbox="624 1375 1426 1621"> <thead> <tr> <th>Year</th> <th>Skilled</th> <th>Unskilled</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>2020</td> <td>15</td> <td>5</td> <td>20</td> </tr> <tr> <td>2021</td> <td>15</td> <td>5</td> <td>20</td> </tr> </tbody> </table> <p>Employment agreement and salary slips of persons directly getting employment opportunity from the project activity. The average hourly earnings of a person are higher than the local level.</p> <p>The same can be crosschecked during on site visit by means of attendance register and physical interviews and Salary Slips. The Project thus provides</p>			Year	Skilled	Unskilled	Total	2020	15	5	20	2021	15	5	20
Year	Skilled	Unskilled	Total												
2020	15	5	20												
2021	15	5	20												

	<p>employment opportunities and pays salaries and welfares and also helps to increase the income and living standards of the employees.</p> <p>No occupational injuries has been reported In the current monitoring period.</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:	-
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<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	Nos.
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	2020: 03			
	2021: 06			
	Below is the schedule of Trainings conducted during the current monitoring period:			
	Sr No	Topic	Date	Number of Participant
	1.	Awareness Training Program on no smoking, tobacco & alcohol	21/09/2020	12
	2.	Driving Safety Training	25/09/2020	11
	3.	Technical Training	10/10/2020	11
	4.	Fire Fighting Training	14/02/2021	15
	5.	Electrical Appliance	24/02/2021	13
	6.	First Aid Training (100MW)	23/04/2021	14
7.	First Aid Training (300MW)	23/06/2021	14	
8.	Defensive Driving Training	24/07/2021	4	
9.	Electrical Safety Training	13/08/2021	11	

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. Comparison of monitored parameters with last monitoring period**

Not applicable as the project is non community servies.

**D.4. Implementation of sampling plan**

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Not Applicable

## SECTION E. CALCULATION OF SDG IMPACTS

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

Baseline Value of SDG 13: 943,156 tCO<sub>2</sub>e

Baseline Value of SDG 7: 0

Baseline Value of SDG 8:0

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

Project value of SDG 13 = 0

Project value of SDG 7 = 1,006,796.48 MWh

**Project value of SDG 8** = Employment 20 persons and 9 trainings conducted during the current monitoring period.

### E.3. Calculation of leakage

The project activity is a renewable energy project and no fossil fuel is burnt within the project boundary due to the project activity and hence no leakage emissions are considered in the approved PDD.

### E.4. Calculation of net benefits or direct calculation for each SDG Impact

SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
13	Climate Action	943,156 tCO <sub>2</sub> e	0	943,156 tCO <sub>2</sub> e
7	Affordable and Clean Energy Contribution to Climate Security & Sustainable Development	0	1,006,796.48 MWh	1,006,796.48 MWh
8	Decent Work and Economic Growth	0	20 people employed	20 people employed
	Trainings provided to staff	0	09 Trainings provided to staff	09 Trainings provided to staff

### E.5. Comparison of actual SDG Impacts with estimates in approved PDD

SDG	Values estimated in ex ante calculation of approved PDD for this monitoring period	Actual values <sup>9</sup> achieved during this monitoring period
13	779,933 tCO <sub>2</sub> e	943,156 tCO <sub>2</sub> e
7	832,550 MWh	1,006796.48 MWh
8	1 training /annum and 10 people employed	9 training and 20 people employed

#### E.5.1. Explanation of calculation of value estimated ex ante calculation of approved PDD for this monitoring period

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 (EGPJ, y) with the CO<sub>2</sub> baseline emission factor for the electricity displaced due to the project (EF<sub>grid,CM,y</sub>) as follows:

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

Where,

EF<sub>grid,CM,y</sub> = Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (t CO<sub>2</sub>/MWh)

EGPJ,y = Net electricity supplied to the Indian grid (MWh)

BE<sub>y</sub> = Baseline emissions in year y (tCO<sub>2</sub>)

Baseline emissions

<sup>9</sup>Whenever emission reductions are capped, both the original and capped values used for calculations must be transparently reported. Use brackets to denote original values.

$$\begin{aligned}
 BE_y &= EG_{PJ,y} \times EF_{grid,CM,y} \\
 &= 832,550 * 0.9368 \\
 &= 779,933 \text{ tCO}_2\text{e (round down value)}
 \end{aligned}$$

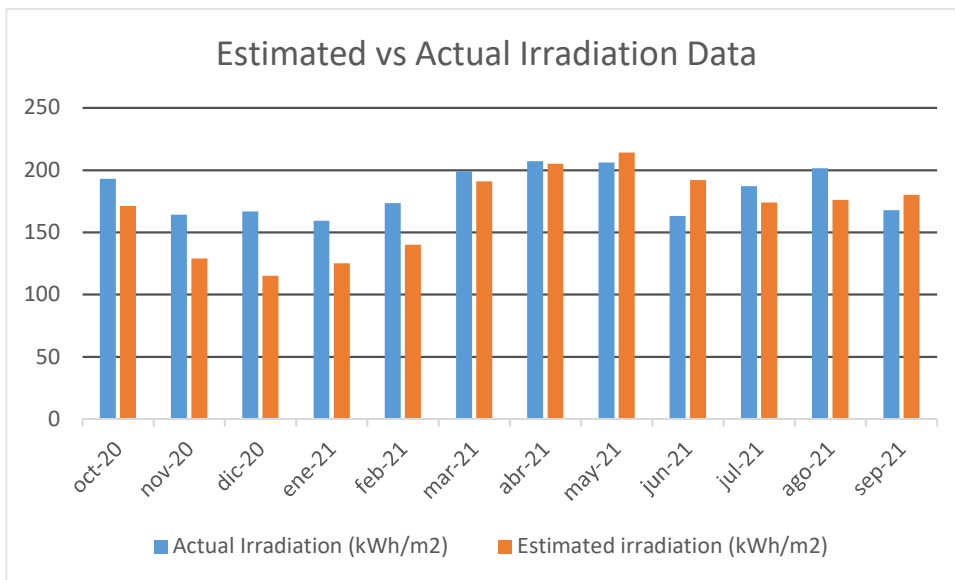
For SDG 8

Employment opportunities created for 10 persons and 1 training estimated ex ante in the approved PDD.

**E.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD**

The emission reductions as per the approved PDD for the current monitoring period is estimated to be 779,933 tCO<sub>2</sub>e whereas during the current monitoring period the emission reductions claimed are 943,156tCO<sub>2</sub>e, which is approximately 20.93% higher than the estimated emission reductions for the same monitoring period.

During the present monitoring period, the project witnessed an increase of 20.93% in emission reductions as compared to ex-ante emissions, which is due to higher PLF achieved as increased solar radiation as one of the major factor and is thus nature dependent and not in control of PP. The below figure has shown that during the present monitoring period most of the months higher solar irradiation has been received at site than the estimated irradiation given in the third party PLF report.



The plant has received 8.73% higher radiation than estimated during the present monitoring period.

During the present monitoring period the plant has achieved very high Grid Availability and Plant Availability factor than estimated in the third party PLF report. These factors have helped to achieve higher generation than estimated generation. Further no design change in the project activity has taken place and even with an increased PLF which is

achieved during this monitoring period, the equity IRR of the project is well below the benchmark and thus there is no impact on additionality of the project activity.

## SECTION F. SAFEGUARDS REPORTING

No	1	
Indicator	<b>9.4 Nonhazardous Waste</b>	
Mitigation measure	Collect domestic wastes (organic and other wastes) generated by the 20 employees and handover to the vendor	
Chosen parameter	Quantity of domestic waste	
Current situation of parameter	The parameter is monitored for disposal on regular basis.	
Estimation of baseline situation of parameter	N.A.	
Future target for parameter	No action required as domestic wastes are disposed regularly.	
Way of monitoring	How	Monitoring of domestic waste
	When	Daily
	By who	Monitored by the project owner

No	1	
Indicator	<b>9.5 Hazardous Waste</b>	
Mitigation measure	Safe storage and hand over to authorized vendor to avoid contamination of soil.	
Chosen parameter	Number of broken PV modules	
Current situation of parameter	The parameter is monitor and maintain record of generation of hazardous waste in terms of damaged solar PV modules. No broken PV modules has been identified during the present monitoring period.	
Estimation of baseline situation of parameter	N.A.	
Future target for parameter	Future target of the parameter is safely store and hand over to the authorized vendor. No broken	

		modules has been identified during the present monitoring period and hence no action on handing over the broken modules to the vendor is occurred.
Way of monitoring	How	Monitoring of broken solar modules
	When	Ongoing, monitored at least annually
	By who	Monitored by the project owner

## SECTION G. STAKEHOLDER INPUTS AND LEGAL DISPUTES

### G.1. List all Inputs and Grievances which have been received via the Continuous Input and Grievance Mechanism together with their respective responses/mitigations.

Grievance registrar has been kept at the plant gate. This registrar is accessible to all for submission of complaints. Following grievances had been raised during the present Monitoring Period. Project owner had addressed all the grievances with priority.

Date of Complaint	Topic	Date of resolution	Response from project owner
07/10/2020	Clean Water not Available	12/10/2020	Clean Water arranged at site for staff
21/12/2020	Lack of Emergency Facilities	30/12/2020	Proper First Aid Kit placed at site
18/03/2021	Site office is not cleaned regularly	22/03/2021	Cleaning schedule has been prepared to maintain the site premises clean

### G.2. Report on any stakeholder mitigations that were agreed to be monitored.

Not Applicable

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

As confirmed by the Project Proponent, no legal contest or dispute arose pertaining to this project activity during the annual reporting period (01/10/2020 – 30/09/2021).



### Annexure 1: Calibration Details

For SB Energy One Private Limited:

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

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

Meter Number	Accuracy Class & Make	Calibration Date	Due date of Calibration

2843339 (Main Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2843340 (Check Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861545 (Standby Meter)	0.2 s, Elster	15/09/2019	14/09/2024
For Plot L5 B			
2861546 (Main Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861547 (Check Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861548 (Standby Meter)	0.2 s, Elster	15/09/2019	14/09/2024
For Plot L5 C			
2861549 (Main Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861550 (Check Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861551 (Standby Meter)	0.2 s, Elster	15/09/2019	14/09/2024
For Plot L5 D			
2861552 (Main Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2861553 (Check Meter)	0.2 s, Elster	15/09/2019	14/09/2024
2843326 (Standby Meter)	0.2 s, Elster	15/09/2019	14/09/2024

**For SB Energy Three Private Limited:**

<b>Meter Number</b>	<b>Accuracy Class &amp; Make</b>	<b>Calibration Date</b>	<b>Due date of Calibration</b>
For Plot P2F1			
RJB92278 (Main Meter)	0.2 s, Elster	25/09/2019	24/09/2024

RJB92275 (Check Meter)	0.2 s, Elster	25/09/2019	24/09/2024
RJB92281 (Standby Meter)	0.2 s, Elster	25/09/2019	24/09/2024
For Plot P2F2			
RJB92279 (Main Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92276 (Check Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92282 (Standby Meter)	0.2 s, Elster	25/09/2019	24/09/2024
For Plot P2F3			
RJB92280 (Main Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92277 (Check Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92283 (Standby Meter)	0.2 s, Elster	24/09/2019	23/09/2024

<b>Meter Number</b>	<b>Accuracy Class &amp; Make</b>	<b>Calibration Date</b>	<b>Due date of Calibration</b>
For Plot P3F1			
RJB92288 (Main Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92289 (Check Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92292 (Standby Meter)	0.2 s, Elster	24/09/2019	23/09/2024
For Plot P3F2			
RJB92285 (Main Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92284 (Check Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92291 (Standby Meter)	0.2 s, Elster	24/09/2019	23/09/2024

For Plot P3F3			
RJB92286 (Main Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92287 (Check Meter)	0.2 s, Elster	24/09/2019	23/09/2024
RJB92290 (Standby Meter)	0.2 s, Elster	24/09/2019	23/09/2024

## Revision History

Version	Date	Remarks
1.1	14 October 2020	<p>Hyperlinked section summary to enable quick access to key sections</p> <p>Improved clarity on Key Project Information Section for POA monitoring</p> <p>Forward action request section</p> <p>Improved Clarity on SDG contribution/SDG Impact term used throughout</p> <p>Clarity on safeguard reporting</p> <p>Clarity on design changes</p> <p>Leakage section added for VER/CER projects</p> <p>Addition of Comparison of monitored parameters with last monitoring period</p> <p>Provision of an <a href="#">accompanying Guide</a> to help the user understand detailed rules and requirements</p>
1.0	10 July 2017	Initial adoption