



# Monitoring Report

## CARBON OFFSET UNIT (CoU) PROJECT



**Title:** 998.64 kWp Grid Connected Rooftop Solar Plant at Berger Paints, Jejuri, Maharashtra, India  
Version 2.0

Date 20/12/2022

First CoU Issuance Period: 01 years, 10 months, 23 Days

Date: 09/10/2020 to 31/08/2022



Monitoring Report (MR)  
CARBON OFFSET UNIT (CoU) PROJECT

Monitoring Report	
Title of the project activity	998.64 kWp Grid Connected Rooftop Solar Plant at Berger Paints, Jejuri, Maharashtra, India
UCR Project Registration Number	Project ID: 225
Version	Version 2.0
Completion date of the MR	20/12/2022
Monitoring period number and duration of this monitoring period	Monitoring Period Number: 01 Duration of this monitoring Period: (first and last days included (09/10/2020 to 31/08/2022)
Project participants	Berger Paints (India) Limited
Host Party	INDIA
Applied methodologies and standardized baselines	AMS-I.D : “Grid connected renewable electricity generation”, version 18.0
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of GHG emission reductions for this monitoring period in the registered PCN	Year 2020: 222 CoUs (222 tCO <sub>2</sub> eq)
	Year 2021: 949 CoUs (949 tCO <sub>2</sub> eq)
	Year 2022: 680 CoUs (680 tCO <sub>2</sub> eq)
<b>Total:</b>	<b>1851 CoUs (1851 tCO<sub>2</sub>eq)</b>

## SECTION A. Description of project activity

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

#### a) Purpose of the project activity and the measures taken for GHG emission reductions >>

The project, Grid Connected Rooftop Solar Plant is located in Village Jejuri, Pune District, State Maharashtra, Country INDIA.

The project activity is a renewable power generation activity at Berger Paints, Jejuri a leading paint manufacturer. The project activity involves commissioning of 998.64 KWp Grid Connected Rooftop Solar Plant. The solar plant was completed in single phase and put to use on 9<sup>th</sup> October 2020.

The purpose of the project activity is to utilize the solar energy source for clean electricity generation. The net generated electricity from the project activity will be used in the manufacturing facility for its captive consumption. The proposed project has been synchronized with the national grid.

The project activity has been designed for electricity generation for captive consumption which otherwise would have been imported from the grid. In the absence of the project activity an equivalent amount of electricity would have been generated from the connected/new power plants in the integrated the Indian grid system, which is predominantly based on fossil fuels. On the contrary the operation of solar modules is emission free throughout the lifetime of the project activity. The project activity doesn't involve any GHG emission sources.

#### b) Brief description of the installed technology and equipment>>

The project activity involves "Solar PV system" as the technology. The system is designed at a capacity of 998.64 Kwp. The solar modules are mounted on module mounting structures of Al-Zn alloy coated steel on top of sheet roofs of the Berger paints manufacturing facility.

The solar module is a packaged, connected assembly of solar cells which uses the incident photons from the sun light and converts it into electricity. The solar module generates DC power which is converted to AC power at 400 V with the help of inverters. The output from the Inverters has been conned to 4 no's ACDBs, wherein the electricity generated will be recorded using Multi-Function Meters (MFM) and then connected to the facility's LT panel.

The generated power will be utilized for captive consumption within the facility and any excess/unutilized real-time energy will be stepped up to 33KV using a 1600 KVA transformer and supplied/exported to the national grid through a net meter installed by the Electricity Distribution company i.e. Maharashtra State Electricity Distribution Company Limited.

#### c) Relevant dates for the project activity (e.g., construction, commissioning, continued operation periods, etc.)>>

The following are the key milestone dates of the project: -

- Duration of crediting period: - 09/10/2020 to 31/08/2022 (1 Year,10 Months and 23 Days)
- CEIG approval date: - 29<sup>th</sup> September 2020
- Project Commissioned: - 04<sup>th</sup> October 2020
- Put to use date: - 09<sup>th</sup> October 2020

UCR Project ID or Date of Authorization: Project ID: 225

Start Date of Crediting Period: 09/10/2020

d) Total GHG emission reductions achieved or net anthropogenic GHG removals by sinks achieved in this monitoring period>>

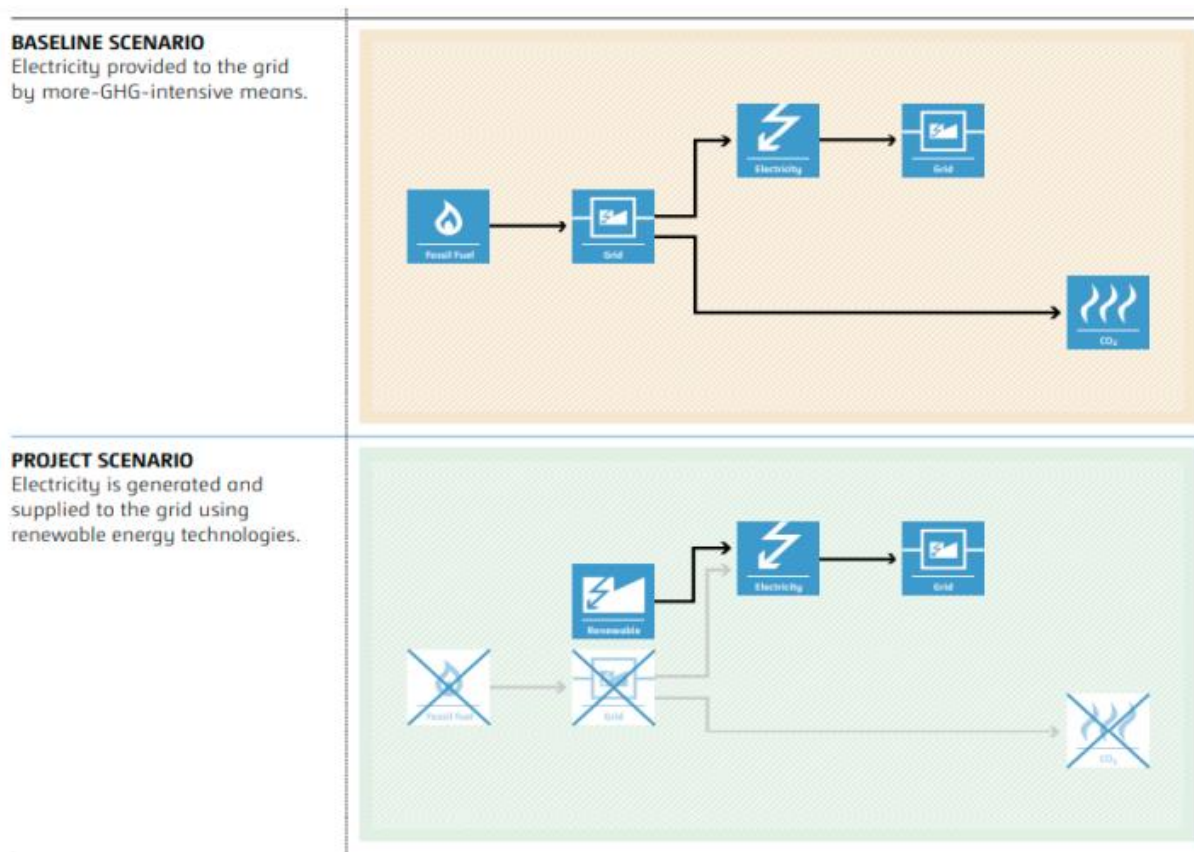
The total GHG emission reductions achieved in this monitoring period is as follows:

Summary of the Project Activity and ERs Generated for the Monitoring Period	
Start date of this Monitoring Period	09/10/2020
Carbon credits claimed up to	31/08/2022
Total ERs generated (tCO <sub>2eq</sub> )	<b>1851 CoUs (1851 tCO<sub>2eq</sub>)</b>
Leakage	0

e) Baseline Scenario>>

The baseline scenario identified at the PCN stage of the project activity is:

In the absence of the project activity the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants. Hence baseline scenario of the project activity is the grid-based electricity system, which is also the pre-project scenario.



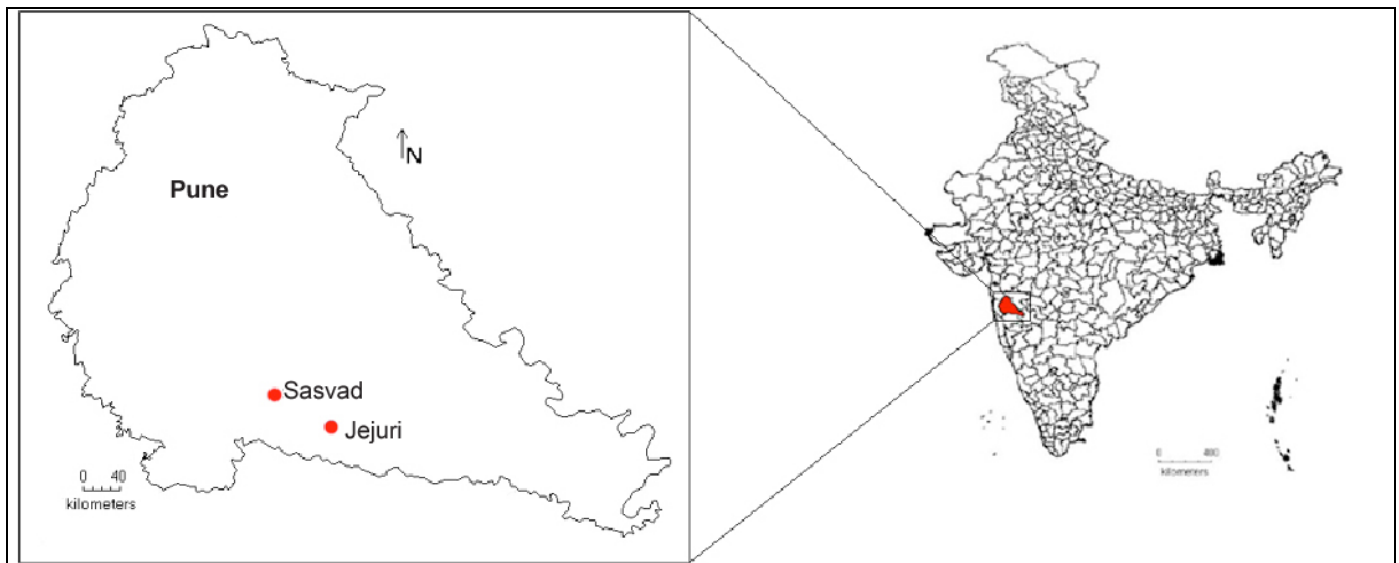
A.2. Location of project activity>>

Country: INDIA.  
District: Pune  
Village: Jejuri  
State: Maharashtra

Pin Code: 412303

The project location is situated in village Jejuri of Pune district in the state of Maharashtra. The nearest railway station to the project site is at Jejuri. The project location can be approached by road with a distance of 2.8 Kms from Jejuri. Nearest Airport is Pune International Airport.

The geographic co-ordinate of the project locations 18°27'51.202" N and 74° 17'17.477" E.,  
The representative location map is included below:



The solar modules are installed on 4 different buildings of the Berger Paints manufacturing facility.  
Building wise capacity details are given below.

Top view of the building are given below.





Building Name	1.Solid Colour Building	2.New Protection Building	3.New Resin Building	4.New Auto Building
No. of Modules	428	816	285	956
Capacity-KWp	171.2	326.4	115.4	387.2

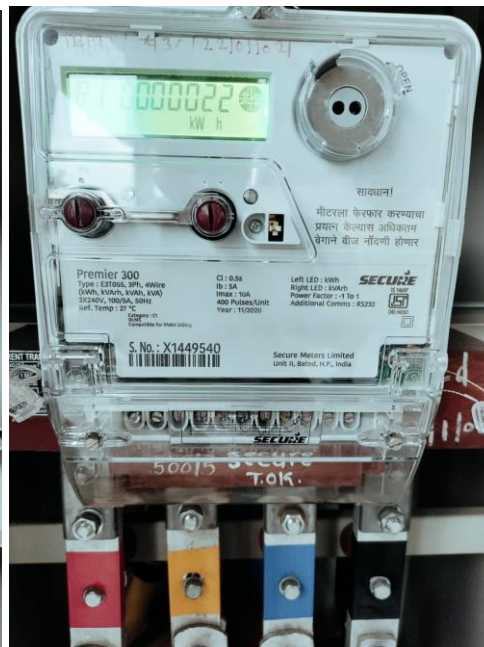
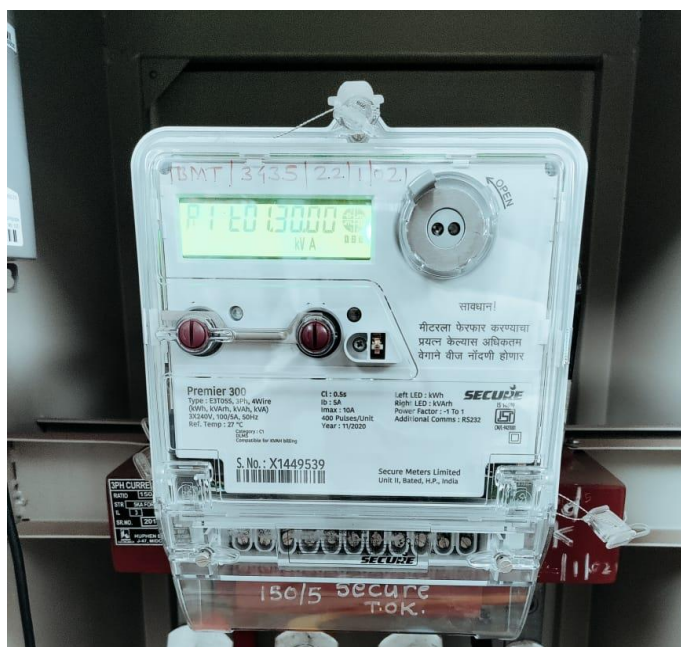


Figure 1: Energy Meters

### A.3. Parties and project participants >>

Party (Host)	Participants
INDIA	Berger Paints (India) Limited Plot No. G-35, MIDC, Jejuri Village, Pune, Maharashtra, India, 412303.

### A.4. References to methodologies and standardized baselines >>

SECTORAL SCOPE – 01, Energy industries (Renewable/Non-renewable sources)

TYPE I - Renewable Energy Projects

CATEGORY- Grid-connected electricity generation from renewable sources

The applied methodologies - AMS. I.D. (Title: “Grid connected renewable electricity generation”, version 18.0)

The project activity has installed capacity of 998.64 Kwp which is less than 15MW. Hence, it will qualify for a small-scale project activity under Type-1 of the small-scale methodology.

### A.5. Crediting period of project activity >>

Duration of crediting period: - 09/10/2020 to 31/08/2022 (1 Year, 10 Months & 23 Days)

Length of the crediting period corresponding to this monitoring period: 1 Year, 10 Months & 23 Days.

### A.6. Contact information of responsible persons/entities >>

#### Contact Person-1 (Project Proponent)

Name of the Person: - Durga prasad date

Contact Details: - 7755941294

Mail ID:- [durgaprasaddate@bergerindia.com](mailto:durgaprasaddate@bergerindia.com)

#### Contact Person-2 ( Aggregator) )

Name : Narendar Bolledhu

C1, 3<sup>rd</sup> Floor, Spaces and More Building,

Vittal Rao Nagar, Madhapur,

Hyderabad-500081.

Contact No: +91 81868 79038

E-mail: [narendra@zenithenergy.com](mailto:narendra@zenithenergy.com)

## SECTION B. Implementation of project activity

### B.1. Description of implemented registered project activity >>

a) Provide information on the implementation status of the project activity during this monitoring period in accordance with UCR PCN>>

The project, Grid Connected Rooftop Solar Plant is located in Village Jejuri, Pune District, State Maharashtra, Country INDIA.

The project is commissioned on 4<sup>th</sup> October 2020 and put to operation starting from 9<sup>th</sup> October 2020

The following are the key milestone dates of the project: -

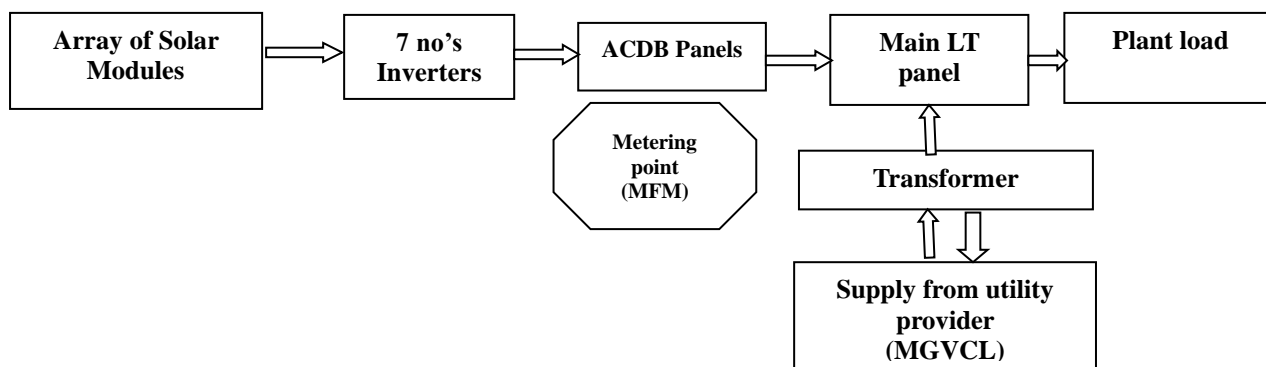
- Duration of crediting period: - 09/10/2020 to 31/08/2022 (1 Year,10 Months and 23 Days)
- CEIG approval date: - 29<sup>th</sup> September 2020
- Project is commissioned on: - 04<sup>th</sup> October 2020
- Put to use date: - 09<sup>th</sup> October 2020

b) For the description of the installed technology(ies), technical process and equipment, include diagrams, where appropriate>>

The details of the technologies adopted for the project are as follows:

The project activity involves “Solar PV system” as the technology. The system is designed at a capacity of 998.64 KWp. The solar modules are mounted on the module mounting structures on sheet roof of the facility. The solar module is a packaged, connected assembly of solar cells which uses the incident photons from the sun light and converts it into electricity. The solar module generates DC power which is converted to AC power with the help of inverters. The output from the Inverters will be fed to the ACDBs, wherein the electricity generated will be recorded and then connected to the facility’s LT panel.

Project boundary diagram:





## Technical details of the major equipment

Description	Qty						
Nominal Power	998.64 KWp						
Solar Modules	Make: Jinco Solar Technology: Mono Crystalline PERC Rating: 400 Wp & 405 Wp No. of modules: 2485						
Inverters	Type: String inverters Make: Delta <table border="1"> <tr> <th>Rating</th><th>Qty</th></tr> <tr> <td>70 kW</td><td>8 no's</td></tr> <tr> <td>50 kW</td><td>5 no's</td></tr> </table>	Rating	Qty	70 kW	8 no's	50 kW	5 no's
Rating	Qty						
70 kW	8 no's						
50 kW	5 no's						
Transformer	Rating: 1600 KVA Voltage ratio: 33/0.415 KV Make: Voltamp						
Energy Meters	1) Make: Secure Sr. No: X1449540 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no  2) Make: Secure Sr. No: X1449539 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no  3) Make: Secure Sr. No: X1449538 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no  4) Make: Secure Sr. No: X1449537 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no						

The system was supplied and commissioned by M/s Mahindra Susten Private Limited and has Mono Crystalline PERC type (400 Wp & 405 Wp) modules. The installed system has net metering facility to transfer the excess units to grid.



The solar power generated will be recorded in the 4 no's energy meters provide at the 4 no's ACDB panels and will be utilized for captive consumption within the premises of the manufacturing facility of Berger paints and any excess real-time energy will be exported to the grid, which will be recorded in the net metering.

## **B.2 Do no harm or Impact test of the project activity>>**

There was no harm identified from the project and hence no mitigations measures are applicable.

**Rational:** As per ‘Central Pollution Control Board (Ministry of Environment & Forests, Govt. of India)’, final document on revised classification of Industrial Sectors under Red, Orange, Green and White Categories (07/03/2016), it has been declared that solar project activity falls under the “White category”. White Category projects/industries do not require any Environmental Clearance such as ‘Consent to Operate’ from PCB as such project does not lead to any negative environmental impacts.

There are social, environmental, economic and technological benefits which contribute to sustainable development.

- **Social benefits:**
- The project would help adding more employment opportunities as compared to regular employees, such as during the construction and operation phases of the solar rooftop plant.
- Also, the project activity directly contributes to the development of renewable infrastructure in the region which will motivate other fellow industries in the region to adopt solar technology for green power.
- **Environmental benefits:**
- The project activity will generate power using zero emissions solar based power generation facility at the rooftop which helps to reduce GHG emissions and specific pollutants like SO<sub>x</sub>, NO<sub>x</sub>, and SPM associated with the conventional thermal power generation facilities.
- Also, being a renewable resource, use of solar energy to generate electricity contributes to resource conservation.
- It reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion.
- Thus, the project causes no negative impact on the surrounding environment contributing to environmental well-being.
- **Economic benefits:**
- The project is a clean technology investment decided based on carbon revenue support, which signifies flows of clean energy investments into the host country.
- The project activity requires temporary and permanent, skilled and semi-skilled man power at the solar project location; this will create additional employment opportunities in the region.
- The generated electricity will be utilized for captive consumption, thereby reducing the demand from the grid.

### B.3. Baseline Emissions>>

The baseline scenario identified at the PCN stage of the project activity is:

The project activity is a new installation of rooftop solar plant of 998.64 KWp established for captive consumption of Berger paints manufacturing facility and excess energy will be exported/supplied to the national grid.

The project activity displaces equivalent electricity that would be provided to the grid by more-GHG-intensive means.

In the absence of the project activity the equivalent amount of electricity would have been imported from the regional grid (which is connected to the unified Indian Grid system), which is carbon intensive due to predominantly sourced from fossil fuel-based power plants.

### B.4. Debundling>>

This Grid Connected Rooftop Solar Plant at Berger Paints, Jejuri project is not a debundled component of a larger project activity.

## Section C: Application of methodologies and standardized baselines

### C.1. References to methodologies and standardized baselines >>

SECTORAL SCOPE – 01, Energy industries (Renewable/Non-renewable sources)

TYPE I - Renewable Energy Projects

CATEGORY- Grid-connected electricity generation from renewable sources

The applied methodologies - AMS. I.D. (Title: “Grid connected renewable electricity generation”, version 18.0)

The project activity has installed capacity of 998.64 KWp which is less than 15MW. Hence, it will qualify for a small-scale project activity under Type-1 of the small-scale methodology.

### C.2. Applicability of methodologies and standardized baselines >>

The project, is a grid connected rooftop Solar Plant of 998.64 KWp capacity. The project activity falls under small scale project activity. Hence, AMS. I.D. (Title: “Grid connected renewable electricity generation”, version 18.0) has been applied. The applicability of methodology to the project case is justified below:

Applicability Criterion	Project Case
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as Wheeling.	The project activity is a Renewable Energy Project i.e., Solar PV project (SPV) for captive consumption and excess energy will be supplied to national grid, which falls under applicability criteria option 1  (a) The energy generated will be utilized for captive consumption within the premises of the manufacturing facility of Beepee Coating and any excess real-time energy will be exported to

	<p>the grid</p> <p>Hence the project activity meets the given applicability criterion as well as satisfies the applicability illustration mentioned in Appendix of AMS-ID Table 1 – Scope of AMS-I.D version 18.</p>
<p>2. This methodology is applicable to project activities that:</p> <p>(a) Install a Greenfield plant;</p> <p>(b) Involve a capacity addition in (an) existing plant(s);</p> <p>(c) Involve a retrofit of (an) existing plant(s);</p> <p>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or</p> <p>(e) Involve a replacement of (an) existing plant(s).</p>	<p>The option (a) of applicability criteria 2 is applicable as project is a Greenfield plant /unit. Hence the project activity meets the given applicability criterion.</p>
<p>3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</p> <p>(a) The project activity is implemented in existing reservoir, with no change in the volume of the reservoir; or</p> <p>(b) The project activity is implemented in existing reservoir, where the volume of the reservoir(s) is increased and the power density as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup>.</p> <p>(c) (c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m<sup>2</sup></p>	<p>The project is a Solar PV (SPV) rooftop Installation, hence this criterion is not applicable.</p>
<p>4. If the new unit has both renewable and nonrenewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The proposed project is 998.64 Kwp SPV i.e., only component is renewable power project below 15MW, thus the criterion is not applicable to this project activity.</p>
<p>5. Combined heat and power (co-generation) systems are not eligible under this category</p>	<p>The project is SPV project and thus the criterion is not applicable to this project activity.</p>
<p>6. In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct1 from the existing units.</p>	<p>The project is a new installation of 998.64 KWp SPV plant and is not a capacity addition of renewable energy generation at an existing renewable power generation facility. Hence, this criteria is not applicable.</p>
<p>7. In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, rehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW.</p>	<p>The project is a new installation of 998.64 KWp SPV plant and is not a retrofit, rehabilitation or replacement. Hence, this criteria is not applicable</p>
<p>8. In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid, then the baseline for the electricity component shall be in</p>	<p>The project is a new installation of 998.64 KWp SPV plant. Hence, this criterion is not applicable.</p>



accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as “AMS-I.D. Version 18, C.: Thermal energy production with or without electricity” shall be explored.	
9. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.	Not biomass involved, the project is only a SPV project and thus the criterion is not applicable to this project activity.

### C.3 Applicability of double counting emission reductions >>

This project activity was not registered with any other GHG program for carbon credits prior to this monitoring period. Hence this project will not cause any double accounting of carbon credits.

### C.4. Project boundary, sources and greenhouse gases (GHGs)>>

As per applicable methodology AMS-I.D. Version 18, “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project power plant is connected to.”

Thus, the project boundary includes the solar PV system and the Indian grid system.

The Project is executed at Jejuri, Maharashtra, India. The project focuses on installation of 998.64 Kwp roof top solar power plant which is meant for capacitive use. The excess energy generated from the system is sent to the grid by net metering system. The project helps to reduce the GHG’s by reducing consumption of energy from the grid.

	Source	GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO <sub>2</sub>	Yes	Main emission source
		CH <sub>4</sub>	No	Main emission source
		N <sub>2</sub> O	No	Main emission source
Project Activity	Greenfield Solar PV Project Activity	CO <sub>2</sub>	No	No CO <sub>2</sub> emissions are emitted from the project
		CH <sub>4</sub>	No	Project activity does not emit CH <sub>4</sub>
		N <sub>2</sub> O	No	Project activity does not emit N <sub>2</sub> O

### C.5. Establishment and description of baseline scenario (UCR Protocol) >>

This section provides details of emission displacement rates/coefficients/factors established by the applicable methodology selected for the project.

As per the approved consolidated methodology AMS-I.D. Version 18, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

**“The baseline scenario is that the 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 into the grid”.**

The project activity generates green power from solar energy to use for captive purpose via grid interface through net metering arrangement. In the absence of the project activity, the equivalent amount of power would have been supplied by the Indian grid, which is fed mainly by fossil fuel fired plants. The power produced at grid from the other conventional sources which are predominantly fossil fuel based. Hence, the baseline for the project activity is the equivalent amount of power produced at the Indian grid.

A "grid emission factor" refers to a CO<sub>2</sub> emission factor (tCO<sub>2</sub>/MWh) which will be associated with each unit of electricity provided by an electricity system. An emission factor of 0.9 tCO<sub>2</sub>/MWh for the 2014- 2020 years, recommended by the UCR as a fairly conservative estimate for Indian projects not previously verified under any GHG program is used for baseline emission calculation. The same grid emission factor of 0.9 tCO<sub>2</sub>/MWh has been considered for the entire monitoring period, as a conservative measure.

### **Net GHG Emission Reductions and Removals**

Thus,  $ER_y = BE_y - PE_y - LE_y$

Where:

- $ER_y$  = Emission reductions in year y (tCO<sub>2</sub>/y)
- $BE_y$  = Baseline Emissions in year y (t CO<sub>2</sub>/y)
- $PE_y$  = Project emissions in year y (tCO<sub>2</sub>/y)
- $LE_y$  = Leakage emissions in year y (tCO<sub>2</sub>/y)

### **Baseline Emissions**

Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EGPJ,y \times EF_{grid,y}$$

- $BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>)
- $EGPJ,y$  = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
- $EF_{grid,y}$  = Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (t CO<sub>2</sub>/MWh)

### **Project Emissions**

As per AMS-I.D. version-18, only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of Hydro should be accounted for the project emission. Since the project activity is a solar power project, project emission for renewable energy plant is nil.

Thus,  $PE_y = 0$ .

### **Leakage**

As per paragraph 22 of AMS-I.D. version-18, 'If the energy generating equipment is transferred from another activity, leakage is to be considered.' In the project activity, there is no transfer of energy generating equipment and therefore the leakage from the project activity is considered as zero.

**Hence, LEy= 0**

The actual emission reduction achieved during the first CoU period shall be submitted as a part of first monitoring and verification. However, for the purpose of an ex-ante estimation, following calculation has been submitted:

Estimated baseline emission reductions (BEy)

= 2057.55 MWh \*0.9 =1851 tCO<sub>2</sub>eq (1 Year, 10 Months & 23 Days)

An Emission factor of 0.9 tCO<sub>2</sub>/MWh has been selected as per UCR standard

## **C.6. Prior History>>**

The project activity was put to use on 09<sup>th</sup> October 2020. The crediting period is from 09/10/2020 to 31/08/2022. The project activity has not applied to any other GHG program for generation or issuance of carbon offsets or credits for the said crediting period.

## **C.7. Monitoring period number and duration>>**

First Issuance Period: 1 years, 10 months 23 days – 09/10/2020 to 31/08/2022

## **C.8. Changes to start date of crediting period >>**

There is no change in the start date of crediting period.

## **C.9. Permanent changes from PCN monitoring plan, applied methodology or applied standardized baseline >>**

As per PCN, the estimated emission reductions for the crediting period from 09/10/2020 to 31/08/2022 are 2568 tCO<sub>2</sub>, which is working out to 1355 tCO<sub>2</sub>e per annum.

The actual emission reductions for the period from 09/10/2020 to 31/08/2022 are 1851 tCO<sub>2</sub> for 692 days i.e., 976 tCO<sub>2</sub>e per annum.

There are no permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents Changes to project design during the current monitoring period.

## **C.10. Monitoring plan>>**

**Data and Parameters available at validation (ex-ante values):**

Data/Parameter	EF <sub>grid,CM, y</sub>
Data unit	tCO <sub>2</sub> /MWh
Description	Combined margin CO <sub>2</sub> emission factor for grid connected power generation in year y
Source of data	The UCR Standard 0.9 tCO <sub>2</sub> /MWh for the 2014- 2020

Value(s) applied	As per recommendation by The UCR Standard for the 2014- 2020 years for Indian projects not previously verified under any GHG program. The same grid emission factor of 0.9 tCO <sub>2</sub> /MWh has been considered for the entire monitoring period, as a conservative measure.
Measurement methods and procedures	Yearly
Monitoring frequency	Calculation of baseline emission
Purpose of data	

**Data and Parameters to be monitored (ex-post monitoring values):**

Data / Parameter:	EG <sub>PJ, y</sub>
Data unit:	MWh
Description:	Quantity of net electricity generated for captive consumption and the excess/unutilized energy will be supplied by the project power plant to the grid in year y.
Source of data:	<p>Energy Meter records and/or monthly generation statement</p> <ol style="list-style-type: none"> <li>1) Make: Secure Sr. No: X1449540 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no</li> <li>2) Make: Secure Sr. No: X1449539 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no</li> <li>3) Make: Secure Sr. No: X1449538 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no</li> <li>4) Make: Secure Sr. No: X1449537 Type: E3T055 Class: 0.5s Meter Calibration Date: 13/11/2020 Calibration validity: 12/11/2022 Qty: 1 no</li> </ol>

Value(s) applied	2057.55 – based on actual generation
Measurement methods and procedures	<p>Monitoring equipment: Energy Meters are used for monitoring</p> <p>Archiving Policy: Paper &amp; Electronic</p> <p>Calibration frequency: Once in five years (as per provision of CEA).</p> <p>Difference of starting reading of current month and ending reading of previous month will be considered for arriving at the gross generation from the project activity. The sum of energy generation from the 4 meters will be considered for computation gross generation from the project activity.</p> <p>Cross Checking: Quantity of net electricity supplied to the grid will be cross checked from the monthly bills or invoices.</p>
Measurement Frequency:	Monthly
Purpose of Data	The Data/Parameter is required to calculate the baseline emission.
QA/QC procedures applied:	If the current energy meter fails in recording the generation, we will not claim any COUs for that period.



**998.64 kWp Grid Connected Rooftop Solar Plant at Berger Paints, Jejuri, Maharashtra,**

**Year 2020**

<b>Month-Wise Energy Delivered to Grid</b>							
<b>Month</b>	<b>Gross Electricity Generation</b>	<b>Aux Consumption</b>	<b>Net Generation</b>	<b>Net Electricity Generation</b>	<b>Recommended Emission factor</b>	<b>Total CoUs generated</b>	<b>Net Emission Reductions</b>
	<b>kWh</b>	<b>kWh</b>	<b>kWh</b>	<b>MWh</b>	<b>tCO2/MWh</b>	<b>tCO2</b>	<b>tCO2</b>
From 09/10/2020 to 31/10/2020	74022.63	0.75	74021.88	74.02	0.9	66.62	66.62
Nov-20	97700.39	0.75	97699.64	97.70	0.9	87.93	87.93
Dec-20	75418.36	0.75	75417.61	75.42	0.9	67.88	67.88
<b>Total</b>	<b>247141.38</b>	<b>3.00</b>	<b>247139.13</b>	<b>247.00</b>		<b>222.00</b>	<b>222.00</b>

**Year 2021**

<b>Month</b>	<b>Gross Electricity Generation</b>	<b>Aux Consumption</b>	<b>Net Electricity Generation</b>	<b>Net Electricity Generation</b>	<b>Recommended Emission factor</b>	<b>Total CoUs generated</b>	<b>Net Emission Reductions</b>
	<b>kWh</b>	<b>kWh</b>	<b>kWh</b>	<b>MWh</b>	<b>tCO2/MWh</b>	<b>tCO2</b>	<b>tCO2</b>
Jan-21	62582.48	0.75	62581.73	62.58	0.90	56.32	56.32
Feb-21	43260.53	0.75	43259.78	43.26	0.90	38.93	38.93
Mar-21	87323.52	0.75	87322.77	87.32	0.90	78.59	78.59
Apr-21	134156.47	0.75	134155.72	134.16	0.90	120.74	120.74
May-21	110673.55	0.75	110672.80	110.67	0.90	99.61	99.61
Jun-21	124804.98	0.75	124804.23	124.80	0.90	112.32	112.32
Jul-21	88920.52	0.75	88919.77	88.92	0.90	80.03	80.03
Aug-21	89311.44	0.75	89310.69	89.31	0.90	80.38	80.38

Sep-21	82248.96	0.75	82248.21	82.25	0.90	74.02	74.02
Oct-21	85081.45	0.75	85080.70	85.08	0.90	76.57	76.57
Nov-21	73150.38	0.75	73149.63	73.15	0.90	65.83	65.83
Dec-21	73348.78	0.75	73348.03	73.35	0.90	66.01	66.01
<b>Total</b>	<b>1054863.04</b>	<b>9.00</b>	<b>1054854.04</b>	<b>1054.00</b>		<b>949.00</b>	<b>949.00</b>

**Year 2022**

Month	Gross Electricity Generation	Aux Consumption	Net Electricity Generation	Net Electricity Generation	Recommended Emission factor	Total CoUs generated	Net Emission Reductions
	kWh	kWh	kWh	MWh	tCO2/MWh	tCO2	tCO2
Jan-22	80163.56	0.75	80162.81	80.16	0.90	72.15	72.15
Feb-22	81120.75	0.75	81120.00	81.12	0.90	73.01	73.01
Mar-22	67861.72	0.75	67860.97	67.86	0.90	61.07	61.07
Apr-22	97058.75	0.75	97058.00	97.06	0.90	87.35	87.35
May-22	133107.86	0.75	133107.11	133.11	0.90	119.80	119.80
Jun-22	108251.03	0.75	108250.28	108.25	0.90	97.43	97.43
Jul-22	80871.44	0.75	80870.69	80.87	0.90	72.78	72.78
Aug-22	107124.53	0.75	107123.78	107.12	0.90	96.41	96.41
<b>Total</b>	<b>755559.64</b>	<b>6.00</b>	<b>755553.64</b>	<b>755.00</b>		<b>680.00</b>	<b>680.00</b>

**Total emission Reduction calculation For the Project Activity**

Month	Gross Electricity Generation	Aux Consumption	Net Electricity Generation	Net Electricity Generation	Recommended Emission factor	Total CoUs generated	Net Emission Reductions
	kWh	kWh	kWh	MWh	tCO2/MWh	tCO2	tCO2
From 09/10/2020 to 31/08/2022	2057564.06	18.00	2057546.81	2056.00	0.90	1851.00	1851.00