



# PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT



**Title:** 1 MW Solar Power Plant by Event Green Power Pvt Ltd, Tuticorin, Tamil Nadu.

Version 2.0

Date 01<sup>st</sup> June 2023

First CoU Issuance Period: 21<sup>st</sup> January 2023 to 30<sup>th</sup> Sep 2023

First Monitoring Period: 21<sup>st</sup> January 2023 to 30<sup>th</sup> Sep 2023

Date: 21<sup>st</sup> January 2023 to 30<sup>th</sup> Sep 2023

1<sup>st</sup> Crediting Period: 0 year 8 months



Project Concept Note (PCN)  
CARBON OFFSET UNIT (CoU) PROJECT

BASIC INFORMATION	
Title of the project activity	1 MW Solar Power Plant by Event Green Power Pvt Ltd, Tuticorin, TamilNadu
The scale of the project activity	Small Scale
Completion date of the PCN	01 <sup>st</sup> Dec 2023
Project participants	Project Proponent (PP): Event Green Power Private Limited.  UCR Aggregator: eClouds Energy LLP. UCR ID: 980949808
Host Party	INDIA
Applied methodologies and standardized baselines	Type I (Renewable Energy Projects)  UNFCCC Methodology Category AMS I.D.: “Grid connected renewable electricity generation” Ver 18  UCR Protocol Standard Baseline EF
Sectoral scopes	01 Energy industries (Renewable/Non Renewable Sources)
The estimated amount of total GHG emission reductions	1749 CoUs (1710 tCO <sub>2eq</sub> ) / per year

## SECTION A. Description of project activity

### A.1. Purpose and general description of Carbon offset Unit (CoU) project activity :

The project **M/s. Event Green Power Private Limited** is located in SF.NO.256/7,256/9,259/3,256/6, and 259/2 Village: Pasuvanthanai, Taluk: Ottapidaram, District: Tuticorin, State: Tamil Nadu, Country: India.

The details of the registered project are as follows:

#### **Purpose of the project activity:**

The ecology can benefit greatly from the usage of solar energy as a substitute energy source. Solar energy doesn't release any carbon emissions, in contrast to fossil fuels. This is a crucial element that makes it far more eco-friendly than conventional energy sources. As a result, it is far more environmentally friendly and can lessen the consequences of climate change.

The proposed project activity of 1.0 MW (i.e.,1000 kW) is the installation and operation of a solar power plant in Pasuvanthinai Village, Ottapidaram Taluk, Tuticorin District., Tamil Nadu.

Village	District	Type	Total installed capacity kW	Commissioning date
Pasuvanthinai	Tuticorin	Ground mounted	1000	21 <sup>st</sup> January 2023

According to the ex-ante estimate, this project will produce about 1944 MWh of power annually, assuming a PLF of 20% on average. The project activity produces clean energy using Mono Crystalline solar photovoltaic technology. Solar photovoltaic power generation is a clean technology because no fossil fuels are burned or greenhouse gases are released throughout the process. A photovoltaic module, which serves as the basic structural component of an entire PV-producing unit, is made up of multiple solar cells coupled by circuits and sealed in an environmentally protective laminate. The term "PV Array" refers to a group of PV panels installed on a frame. As a result, project activity reduces GHG emissions by replacing electricity produced from fossil fuels on the local grid. The technological details have been provided in Section A.4.

The project activity is anticipated to reduce CO<sub>2</sub> emissions by 1749 tCO<sub>2</sub>e per year on average, with the actual emission reduction achieved during the first CoU term to be presented as part of the initial monitoring and verification.

Since solar energy, a clean renewable energy source is used to Generate power as part of the project activity, there will be no adverse environmental effects, which helps in the fight against climate change.

## **A.2 Do no harm or Impact test of the project activity:**

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

- **Social benefits:**

During the construction phase of the project, significant employment opportunities have been generated for the local workforce, yielding positive outcomes. Furthermore, following the implementation of the project, consistent employment opportunities have been provided to the local community, ensuring sustained benefits. This trend of employment generation will persist throughout the entire lifespan of the project, contributing to poverty reduction in the surrounding region. The continuous availability of job opportunities will have a lasting impact on improving the livelihoods of the local populace.

- **Environmental benefits:**

The project will generate power through a solar-based facility that emits zero greenhouse gases (GHG) and specific pollutants such as SO<sub>x</sub>, NO<sub>x</sub>, and SPM, commonly associated with conventional thermal power generation. By utilizing solar energy, which is a clean and renewable source, the project actively contributes to reducing environmental emissions. Moreover, the use of solar energy for electricity generation promotes resource conservation, reducing reliance on fossil fuels and preserving natural resources that are rapidly depleting. The project has a minimal impact on land, water, air, and soil, ensuring negligible negative effects on the surrounding environment and actively contributing to its overall well-being.

- **Economic benefits:**

Building this project in the Tuticorin district brings notable economic benefits. Firstly, it generates employment opportunities throughout the entire project lifecycle, encompassing construction, operations, and maintenance. This not only fosters economic growth but also ensures income stability for the local community. Moreover, the solar plant contributes to the energy sector by expanding the power supply in Tamil Nadu, reducing reliance on conventional energy sources, and bolstering energy security. As a result, electricity prices become more stable, and industrial, commercial, and residential consumers can rely on a dependable source of clean energy. Furthermore, the development of solar infrastructure attracts investments and stimulates the growth of related industries like solar equipment manufacturing and installation services. Overall, these economic effects lead to increased tax revenue, improved infrastructure development, and enhanced business prospects, positioning the Tuticorin district as an attractive destination for renewable energy investments.

## **A.3. Location of project activity >>**

Country: **India.**

District: Tuticorin.

Village: **Pasuvanthanai.**

Taluk: **Ottapidaram.**

State: Tamil Nadu.

Latitude: 8.993 N

Longitude: 77.975444E

#### Map showing the location of the project activity:



#### A.4. Technologies/measures :

The project activity generates power using renewable clean solar energy. As opposed to conventional power plants, the solar photovoltaic system is one of the most environmentally beneficial technologies now in use because it produces no greenhouse gases during operation.

The main components of the entire PV generating unit, photovoltaic modules are made up of a number of solar cells coupled by circuits and sealed in an environmentally protective laminate. The term "PV Array" refers to a group of PV panels installed on a frame. The project activity has made use of dependable and tested technology to make sure that the proposed project activity will only use environmentally safe and sound technology.

Each power production unit will in general constitute the following equipment:

- Solar Photovoltaic modules
- Inverters
- Transformers Circuit breakers
- Mounting structures
- Cables and hardware.
- Junction box and distribution boxes.
- Earthing kit.
- Control room equipment.
- System for control and monitoring.
- Evacuation system

Parameter	Description
Total number of Photovoltaic Modules	2418
Rating of Photovoltaic Module	Goldi 540Wp
No. of Inverter	5
Inverter Capacity	1 MW
Invertor make	Sungrow SG 250HX-IN
Power Transformer	Supreme Power Equipment Pvt. Ltd
Make	Supreme Power Equipment Pvt. Ltd
Rating	1250KVA
Auxiliary Transformer	Intelle Isolation Transformer
Make	Intelle Isolation Transformer
Rating	16KVA

#### A.5. Parties and project participants >>

Party (Host)	Participants/Aggregator
India	<p><b>Project Owner:</b> <b>M/s.Event Green Power Private Limited</b> is located in SF.NO.256/7,256/9,259/3,256/6, and 259/2 Village: Pasuvanthanai, Taluk: Ottapidaram, District: Tuticorin, State: Tamil Nadu, Country: India.</p> <p><b>Project Aggregator:</b> <b>eClouds Energy LLP</b>, #81 West Venkatasamy Road, R.S.Puram, Coimbatore 641002, Tamil Nadu INDIA Email: <a href="mailto:nocarbon@ecloudsenergy.com">nocarbon@ecloudsenergy.com</a></p>

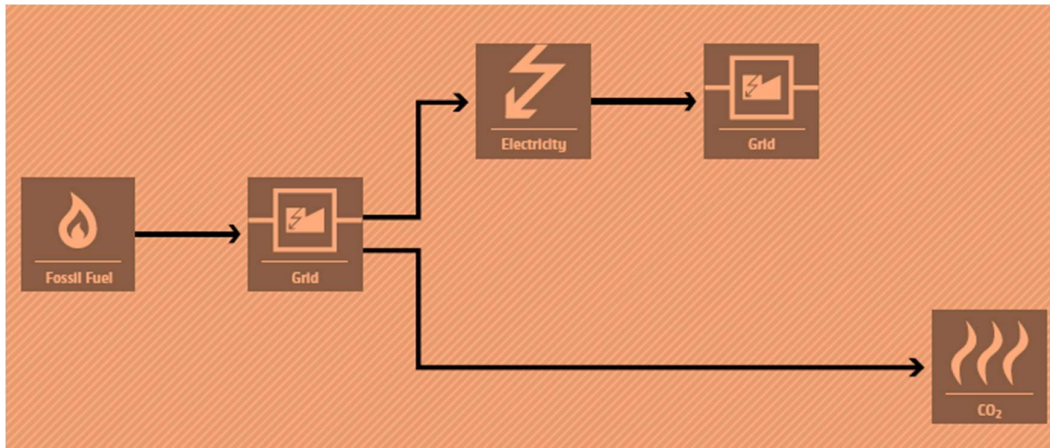
#### A.6. Baseline Emissions>>

- Grid  
The same quantity of electricity would have been continued to be imported from the National grid (which is connected to the unified Indian Grid system) in the absence of the project activity, which is carbon intensive because it is primarily produced from fossil fuel-based power plants.

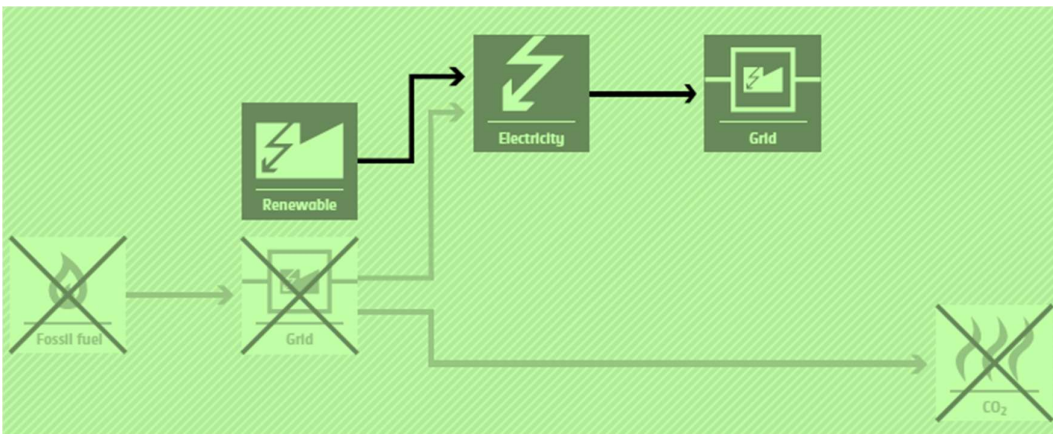
Schematic diagram showing the baseline scenario:



### **Baseline Scenario:**



### **Project Scenario:**



### **A.7. Debundling:**

This project activity is not a component of a larger project activity.

### **SECTION B. Application of methodologies and standardized baselines**

#### **B.1. References to methodologies and standardized baselines >>**

##### SECTORAL SCOPE:

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

##### TYPE:

I - Renewable Energy Projects

##### CATEGORY:

AMS. I.D. (Title: “Grid connected renewable electricity generation”, version 18)

#### **B.2. Applicability of methodologies and standardized baselines >>**

Building and operating a new solar power facility that will provide grid-connected electricity are part of

this project activity. Due to its installed capacity of 1.0 MW, the project activity will be categorized as a small-scale project activity under Type-I of the Small-Scale approach. The following discussion on how the project eligibility standard status meets the requirements of applied to the AMS-I.D., version 18 methodology:

Applicability Criterion	Project Case
<p>1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:</p> <p>(a) Supplying electricity to a national or a regional grid; or</p> <p>(b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</p>	<p>The project activity involves setting up of a grid connected renewable energy (solar) generation plant for selling it to the grid. Therefore, it meets the requirement of point (a) of criteria 1.</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) 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 activity involves installation of Solar PV (SPV). Hence, this criterion is not applicable.</p>
<p>4. If the new unit has both renewable and non-renewable 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 1.0 MW solar power project, i.e., only component is renewable power project below 15 MW, thus the criterion is not applicable to this project activity.</p>



5. Combined heat and power (co-generation) systems are not eligible under this category	This is not relevant to the project activity as the project involves only solar power generating units.
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 distinct <sup>1</sup> from the existing units.	There is no other existing renewable energy power generation facility at the project site. Therefore, this criterion is not applicable.
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.	The project activity is a new installation, it does not involve any retrofit measures nor any replacement and hence is not applicable for the project activity.
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 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.C.: Thermal energy production with or without electricity” shall be explored.	This is not relevant to the project activity as the project involves only solar power generating units.
9. In case biomass is sourced from dedicated plantations, the applicability criteria in the tool “Project emissions from cultivation of biomass” shall apply.	No biomass is involved, the project is only a solar power project and thus the criterion is not applicable to this project activity.

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

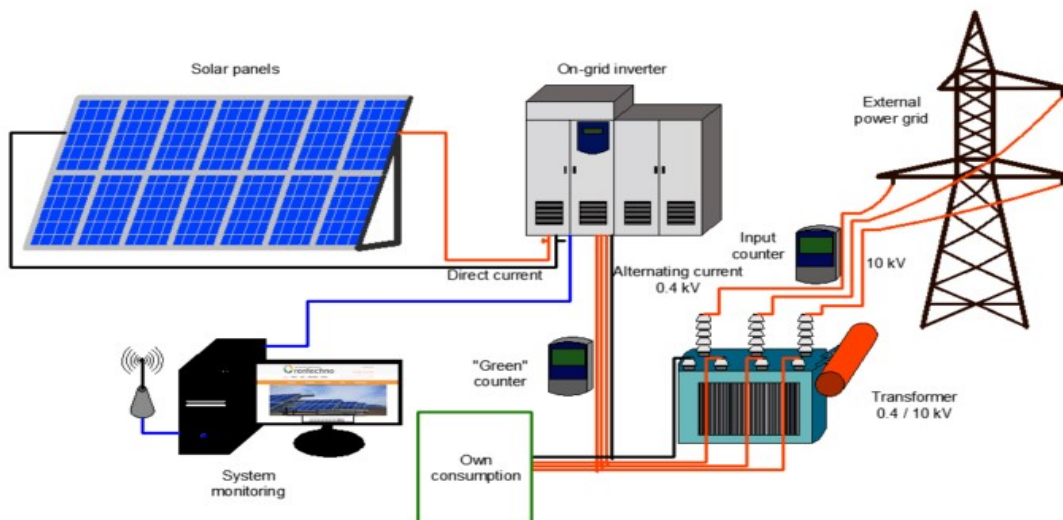
Due to the following factors, there is no double accounting of emission reductions in the project activity:

- Based on its geographic location, the project may be uniquely identified.
- The project has a specific connection point and commissioning certificate.
- The project is linked to energy meters that are devoted to the project developer's consumption point.

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

The physical location of the solar power plant, the energy metering hardware, and the associated local electrical infrastructure are all included in the project perimeter.

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



Source		Gas	Included?	Justification/Explanation
Baseline	Grid-connected electricity generation	CO <sub>2</sub>	Yes	Main emission source
		CH <sub>4</sub>	No	Minor emission source
		N <sub>2</sub> O	No	Minor emission source
		Other	No	No other GHG emissions were emitted from the project
Project	Greenfield Solar power 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
		Other	No	No other emissions are emitted from the project

## **B.5. Establishment and description of baseline scenario (UCR Standard or Methodology) :**

Net GHG Emission Reductions and Removals

Thus,  $ER_y = BE_y - PE_y - LE_y$

Where:

$ER_y$  = Emission reductions in year y ( $tCO_2/y$ )

$BE_y$  = Baseline Emissions in year y ( $t CO_2/y$ )

$PE_y$  = Project emissions in year y ( $tCO_2/y$ )

$LE_y$  = Leakage emissions in year y ( $tCO_2/y$ )

### **Baseline Emissions:**

Baseline emissions include only  $CO_2$  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:

$$BE_y = EGP_{J,y} \times EF_{grid,y}$$

Where,

$BE_y$  = Baseline emissions in year y ( $t CO_2$ )

$EGP_{J,y}$  = 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)

$EF_{grid,y}$  = UCR recommended emission factor of  $0.9 CO_2/MWh$  has been considered.

(Reference: General Project Eligibility Criteria and Guidance, UCR Standard, page 4).

### **Project Emissions:**

Since the project activity is a solar power project, project emission for renewable energy plants is nil.

Thus,  $PE_y = 0$ .

### **Leakage:**

As per paragraph 42 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 zero.

Hence,  $LE_y = 0$

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

### **Estimated annual baseline emission reductions ( $BE_y$ )**

$$= 1944 \text{ MWh/year} \times 0.9 \text{ tCO}_2/\text{MWh}$$

$$= 1,749 \text{ tCO}_2\text{e/year (i.e., 1,749 CoUs/year)}$$

## B.6. Prior History:

The project activity is a utility-scale ground-mounted solar project, and it has never been registered with UCR or under any other GHG mechanism.

## B.7. Changes to the start date of crediting period >>

There has been no claim of a reduction in greenhouse gas emissions as of the commencement date of crediting under UCR, which is 21<sup>st</sup> January 2023.

## B.8. Permanent changes from PCN monitoring plan, applied methodology, or applied standardized baseline >>

The implemented technique and registered PCN monitoring plan have not undergone any long-term alterations.

## B.9. Monitoring period number and duration>>

First Issuance Period: 0 year, 8 months –21/Jan/2023 to 30/Sep/2023

## B.10. Monitoring plan>>

The amount of net electricity supplied to the grid is one of the key metrics tracked.

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

Data / Parameter	UCR recommended emission factor
Data unit	tCO <sub>2</sub> /MWh
Description	A "grid emission factor" refers to a CO <sub>2</sub> emission factor (tCO <sub>2</sub> /MWh) that will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO <sub>2</sub> /MWh for the 2014- 2020 years as a fairly conservative estimate for Indian projects not previously verified under any GHG program. Hence, the same emission factor has been considered to calculate the emission reduction under a conservative approach.
Source of data	UCR CoU Standard Aug 2022 (Updated Ver.6)
Value applied	0.9
Measurement methods and procedures	-
Monitoring frequency	Ex-ante fixed parameter
Purpose of Data	For the calculation of the Emission Factor of the grid

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

Parameter	EG <sub>PJ,y</sub>
Data unit	MWh

Description	Quantity of net electricity generation that is produced per year is estimated as 1944 MWh and fed into the grid as a result of the implementation of this project activity in year.
Source of data Value(s) applied	Joint Meter Reading (JMR) Bilateral meter reading
Procedures	The Net electricity generation by the solar power plant is recorded by the project proponent in the record logs. At the end of every month, Energy bills generated based on the total monthly electricity exported to the grid. In case both meters are not working no emission reduction will be claimed for that period. Meters will be calibrated once in five years as per Central Electricity Authority Regulations.
Monitoring frequency	Monthly
Purpose of data	To estimate Baseline Emission
Energy Meter Make	L&T
Energy Meter S No	22005835
Energy Meter Class	0.2s

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