PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT

Title: 50 MW Solar Project by Sunshakti Solar Power Projects Pvt Ltd in Telangana

Version 1.0

Date 18/06/2025

First CoU Issuance Period: 7 years, 10 months, 18 days

Date:02/11/2017 to 31/12/2024

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

BASIC INFORMATION	
Title of the project activity	50 MW Solar Project by Sunshakti Solar Power Projects Pvt Ltd in Telangana
The scale of the project activity	Large-Scale Solar Project
Completion date of the PCN	18/06/2025
Project participants	M/S Sunshakti Solar Power projects private Limited
Host Party	India
Applied methodologies and standardized baselines	ACM0002-Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0
Sectoral scopes	01 Energy industries (Renewable/Non-renewable Sources)
Estimated amount of total GHG emission reductions	**82,191** CoUs (Annually)

SECTION A. Description of project activity

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

The project activity titled '50 MW Solar Power Plants in Telangana by M/s Sunshakti Solar Power Projects Private Limited' is located in Pedayyipally, in the South side of Hyderabad in Telengana with latitude and longitude are 18.22° N and 78.32° E respectively. The project site Pedayyipally is located in the sun belt of ~ 5.5-5.6 kWh/m2 per day.

Name	Plant capacity	Site	Commissioning Date
M/S Sunshakti Solar Power projects private Limited	50MW	Pedayyipally	2/11/2017

The power produced by the 50MW is evacuated at 132 KV level with Interconnection Point at 220/132 KV Kamareddy SS. The generated Power is being sold to Telangana State Northern Power Distribution Company Limited (TSNPDCL).

The details of the registered project are as follows:

Purpose of the project activity:

The project activity displaces an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The estimated lifetime of the project activity is considered as 25 years for solar technology. In the Pre- project scenario the entire electricity, consumed by the customers or delivered to the grid by, would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. The generation of power from solar photovoltaics is a clean technology as there is no fossil fuel-fired or no GHG gases are emitted during the process. A photovoltaic module consists of several photovoltaic cells connected by circuits and sealed in an environmentally protective laminate, which forms the fundamental building blocks of the complete PV generating unit. Several PV panels mounted on a frame are termed PV Array. Thus, project activity leads to a reduction the GHG emissions as it displaces power from fossil fuel-based electricity generation in the regional grid. The technological details have been provided in Section A.4. Since the project activity generates electricity through solar energy, a clean renewable energy source it will not cause any

negative impact on the environment and thereby contributes to climate change mitigation efforts.

The Crediting Period of the Project activity is 7 years in which total estimated electricity generation is **745,127** MWh and total GHG emission reduction estimated is **657,528** tCO2e. Also, the annual average estimated emission reductions from project activity are 2,11,361 tCO2e/annum with the average plant load factor of **21.64**%. This annual average net electricity generation and annual average GHG emission reductions are with application of degradation factor of 0.5% from second year.

Satellite View of Sun Shakti Solar Project

A.2 Do no harm or Impact test of the project activity>>

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

Social benefits:

- The project activity will contribute to socio-economic development through improving the infrastructure for road network and other mode of communications in the remote part of the state during both the construction and operational period.
- The project activity will utilize renewable energy source for electricity generation instead of fossil fuel-based electricity generation which would have emitted gaseous, liquid and/or solid effluents/wastes. Thus, the project causes no negative impact on the surrounding environment and contributes to environmental well-being.
- The project activity will contribute towards reduction of the GHG emissions as well as emission of pollutants like SOx, Suspended Particulate Matters (SPMs) etc. by avoiding equivalent amount of power generation from fossil fuel-based power plants.

Environmental benefits:

- Utilizing Solar energy instead of burning fossil fuels for electricity generation significantly decreases the emission of harmful pollutants, fostering cleaner air, water, and soil.
- Leveraging Solar energy aids in preserving natural resources and minimizing detrimental impacts on the environment, contributing to overall ecological well-being.
- Moreover, harnessing Solar energy offers a sustainable alternative to burning fossil fuels, which not only mitigates pollution but also conserves natural habitats and biodiversity, supporting healthier ecosystems and enhancing environmental resilience.

Economic benefits:

- The project will generate electricity utilizing renewable source like Solar, thus will increase the contribution of renewable based power generation in the region and will also help in reducing the demand - supply gap of the respective grid.
- The project activity involves substantial amount of investment, thus will contribute towards generation of direct and indirect employment opportunities as per the requirement of the skilled and semi-skilled manpower.
- Use of a renewable source of energy reduces the dependence on imported fossil fuels and associated price variation, thereby leading to increased energy security.

SDG Goals	Description
Goal 3 	This Project activity Ensures healthy lives and promote well-being for all at all ages by Providing Sports Promotion (Training to promote Olypmic Sport) like, Horse Riding • Dressage • Show Jumping
Goal 4 	This Project activity is promoting SDG4 by giving Learning Enhancement Programme (LEP), Second Chance Programme (SCP) and Vocational Skills Development Programme to their Gujarat Branch.
Goal 7 	This Solar energy project will generate clean electricity at a more accessible price for consumers. By utilizing a renewable resource, the project contributes to a growing share of clean energy sources in the global energy mix, ultimately reducing reliance on fossil fuels.
Goal 8 	This Solar project strengthens the local community by generating employment for the locals wherein a safe and inclusive work environment that empowers women is promoted.
Goal 13 	This 50 MW Solar power project meets the SDG 13 goal by displacing fossil fuel-based energy generation by producing clean energy. This project is expected to reduce **82,191** tCO_2 emissions per year.

A.3. Location of project activity >>

The latitude and longitude details:

The site is located in Pedayyipally, Kamareddy District in the South side of Hyderabad in Telengana with latitude and longitude are 18.22° N and 78.32° E respectively. The site is situated at the height of about 490 m above MSL (Mean Sea Level).

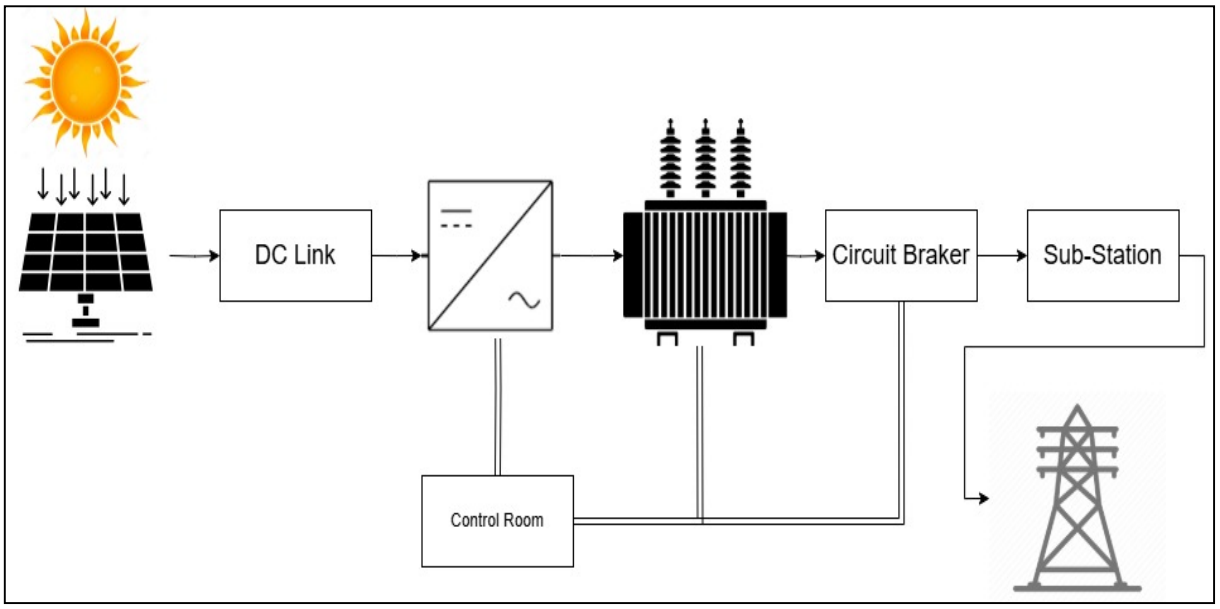
The location of the project site has been shown below:

Name	Plant capacity	Site	Geo-coordinate
M/S Sunshakti Solar Power projects private Limited	50MW	Pedayyipally	18.22° N and 78.32° E

A.4. Technologies/measures >>

PV modules generate direct current (DC) electricity, and it is necessary to convert into alternating current (AC) and adjust the voltage levels before powering equipment designed for normal main supply and before interfacing with grid. Conversion would be achieved by using an electronic inverter and the associated control and protection devices. All these components of the systems are termed as power conditioning unit. After conversion from DC to AC, it would be exported to the grid. In case the plant needs DC electricity, the energy generated from SPV array would be stored in batteries and can be used as and when required.

This 50 MW grid connected solar PV power plant at Pedayyipally would comprise of the following main components.



PV Array

The solar PV system relies on PV modules as its foundational components, with each module converting sunlight into DC electricity through its integrated solar cells. These crystalline silicon (Si) cells are connected in series and hermetically sealed within the module, ensuring durability and optimal performance in various weather conditions. Encased in an anodized aluminum frame, the cells are protected by a high-transmission toughened glass superstrate and a tedlar/polyester rear cover, with EVA (UV stabilized polymer) sheets encapsulating them. Electrical output is managed through a PVC module terminal box at the module's rear. Our plant exclusively uses crystalline modules, chosen for their efficiency and availability, with each module generating 20-35 V and 215-335 Wp DC power depending on the specific rating and solar irradiance. In the plant's design, modules are connected in series to form strings, precisely matching the inverter's input voltage, and multiple strings are then connected in parallel to create the solar array, fulfilling the plant's overall power requirements.

A typical example of total number of modules (Tier 1) required for the proposed capacity and its specifications (with all relevant standards) are as under:

Sl. No.	Head	Value
1.	Type of solar cell	Poly-crystalline
2.	Peak power rating	320 W_p
3.	PV modules in series/string	20
4.	Voltage at maximum power	37.56 V
5.	Current at maximum power	8.52 A
6.	Dimensions	1956 mm x 991 mm x 45 mm
7.	Weight	26.0 kg
8.	Frame	Anodized aluminum

Mounting Structure

The design of the mounting structure (single axis tracker) would be such that the tracker axis would be placed at N-S direction and the inclination of tracker is 0o, and rotation angle +58o and –58o (with backtracking). Each structure would be capable of supporting cluster of modules.

Power Conditioning Unit

Solar PV modules generate DC power, which is converted into 50 Hz 3-phase AC power at grid voltage for grid connectivity. PV modules would be arranged in suitable number of clusters and each cluster will have suitable number of inverters of efficiency of >98.6% in maximum power point (MPP) voltage range to convert generated DC power of each module to 50 Hz 3-phase AC power. Inverters will operate on maximum power point tracking (MPPT) mode to ensure maximum output from the PV modules/array. The inverters would have power measurement sensors, which would turn on the inverters when output power from solar modules exceeds threshold value. The system automatically starts in the morning and begins to export power to the grid, provided there is sufficient solar radiation and in the evening when output power from the modules falls below the threshold level then inverter would turn off. In the event of grid disturbances, the inverter would be disconnected from the grid and reconnected automatically when the grid stabilizes. When the exported power is lower than a threshold for a pre-determined time the inverter turn to sleep mode and disconnect from the grid. Total harmonic distortion of the inverters would be less than 3%.

Parameters

Sl. No.	Head	Value
1.	Continuous rating	43 kW
2.	MPPT operating voltage range	200 V ~ 1,000 V
3.	Output frequency	50 Hz ± 5%
4.	Maximum DC voltage	1100
5.	IP protection	565

b) Power Quality

To monitor and control the parameters of DC/AC power in the inverter, a power monitoring unit would be provided. This unit would monitor the grid power parameters and inverter power parameters and adjust them accordingly for proper synchronization. Inverter AC power quality would be continuously monitored and controlled to within the following limits:

- +10% to -18% voltage tolerance for normal operation once connected
- ±3% voltage tolerance during synchronization
- +1% to -5% frequency tolerance
- < 3% total harmonic distortion with no single harmonic > 2%
- Power factor range - 0.8 LG, 0.8 LD

C) Maximum Power Point Tracker (MPPT)

PV modules give maximum power output at a single set of generated voltage and generated current. MPPT is microprocessor-based unit and for a given radiation level it will track the maximum power point of the module to get maximum power output from the modules.

Terminal box is a part of a PV module, from which electrical output is taken. Each PV module would be provided with three by-pass diodes in the terminal box

A.5. Parties and project participants >>

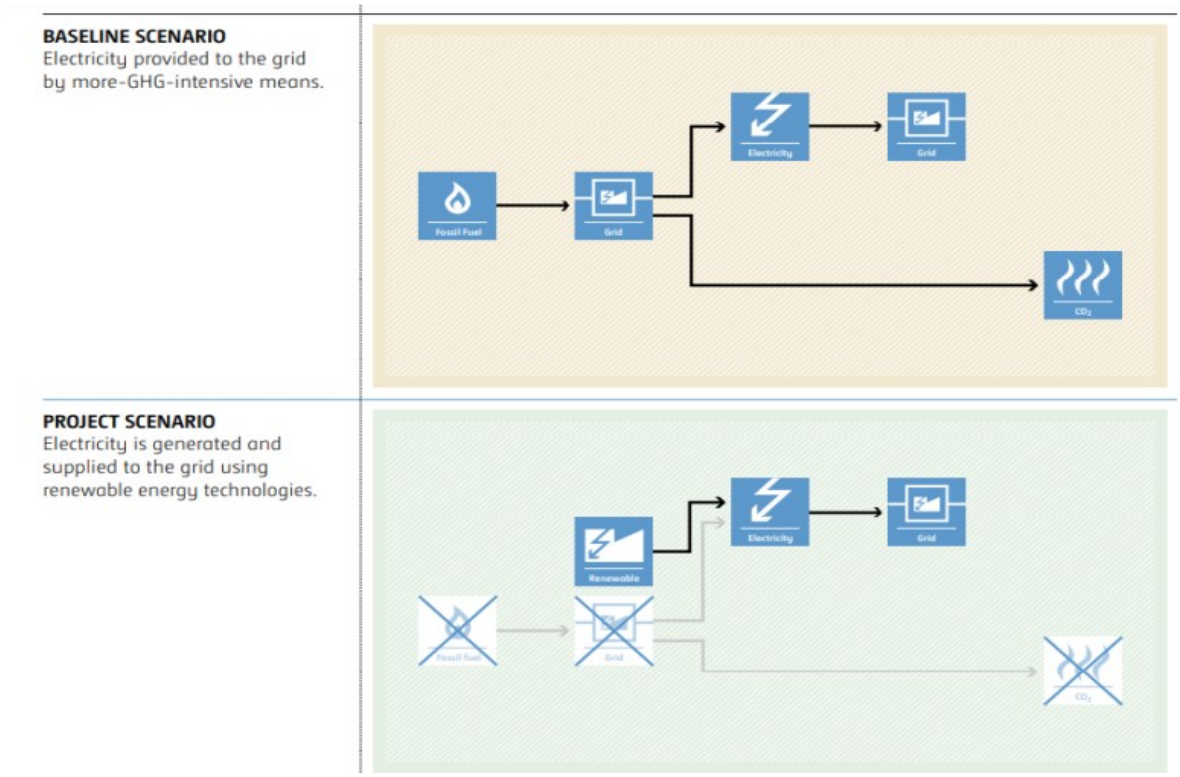
Party (Host)	Participants
India (Host)	Sunshakti Solar Power Projects Pvt Ltd

A.6. Baseline Emissions>>

The baseline scenario identified at the PCN stage of the project activity is:
The scenario existing prior to the implementation of the project activity, is electricity delivered to the facility by the project activity that would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources. This is a green field project activity. There was no activity at the site of the project participant prior to the implementation of this project activity. Hence pre-project scenario and baseline scenario are the same.

As per the approved consolidated methodology ACM0002 Version 22, if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: "If the project activity is the installation of a Greenfield power plant, the baseline scenario is 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 to the grid".

The Schematic diagram showing the baseline scenario:



A.7. Debundling>>

This Project is not a debundled 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 **- Renewable Energy Projects**

CATEGORY- ACM0002., Consolidated baseline methodology for grid-connected electricity generation from renewable sources -Version 22.0

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

Applicability Criteria.	**Applicability status**
1)This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plant(s)/unit(s); (d) Involve a rehabilitation of (an) existing plant(s)/unit(s), or (e) Involve a replacement of (an) existing plant(s)/unit(s). (f) Install a Greenfield power plant together with a grid-connected Greenfield pumped storage power plant. The greenfield power plant may be directly connected to the PSP or connected to the PSP through the grid.	The proposed project involves establishing a new grid-connected renewable Solar power plant, confirming to the specified criteria.
2) In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation project activities that: (a)Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic1 or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s). (e) Integrate a BESS together with a Greenfield power plant that is operating in coordination with a PSP. The BESS is located at site of the greenfield renewable power plant.	The project entails installing a new grid-connected renewable Solar power project without the integration of a Battery Energy Storage System (BESS). Therefore, this condition does not apply to the project activity.
3)The methodology is applicable under the following conditions: (a) Hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit; (b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power	The proposed project involves installing new Solar power plants without integrating a Battery Energy Storage System (BESS). Thus, the mentioned criterion does not apply

capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity; (c) In case of Greenfield project activities applicable under paragraph 7(a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g., by referring to feasibility studies or investment decision documents); (d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies2 may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g., week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period. (e) In case the project activity involves PSP, the PSP shall utilize the electricity generated from the renewable energy power plant(s) that is operating in coordination with the PSP during pumping mode	
4)In case of hydro power plants, one of the following conditions shall apply: a)The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs; or b)The project activity is implemented in an existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (7) is greater than 4 W/m2; or c)The project activity results in new single or multiple reservoirs and the power density calculate equation (7), is greater than 4 W/m2. d)The project activity is an integrated hydro power project involving multiple reservoirs, where the power density of any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m2, all of the following conditions shall apply. (i)The power density calculated using the total installed	The proposed project involves the installation of Solar power plants/units. Hence, the mentioned criterion is not applicable.

capacity of the integrated project, as per equation (8), is greater than 4 W/m2; (ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii)Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m2 are: a) Lower than or equal to 15 MW; and b) Less than 10 per cent of the total installed capacity of integrated hydro power project.	
5)In the case of integrated hydro power projects, project proponent shall: a)Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or b)Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability indifferent seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	The proposed project activity involves the installation of Solar power plants/units. Therefore, the mentioned criteria are not applicable.
6) In the case of PSP, the project participants shall demonstrate in the PDD that the project is not using water which would have been used to generate electricity in the baseline.	The proposed project activity involves installing solar power plants/units. Therefore, the specified criteria are not applicable.
7)The methodology is not applicable to: a)Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b) Biomass-fired power plants;	The proposed project activity involves installing solar power plants/units. Therefore, the specified criteria are not applicable.
8)In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance	The proposed project activity involves installing solar power plants/units. Therefore, the specified criteria are not applicable.

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

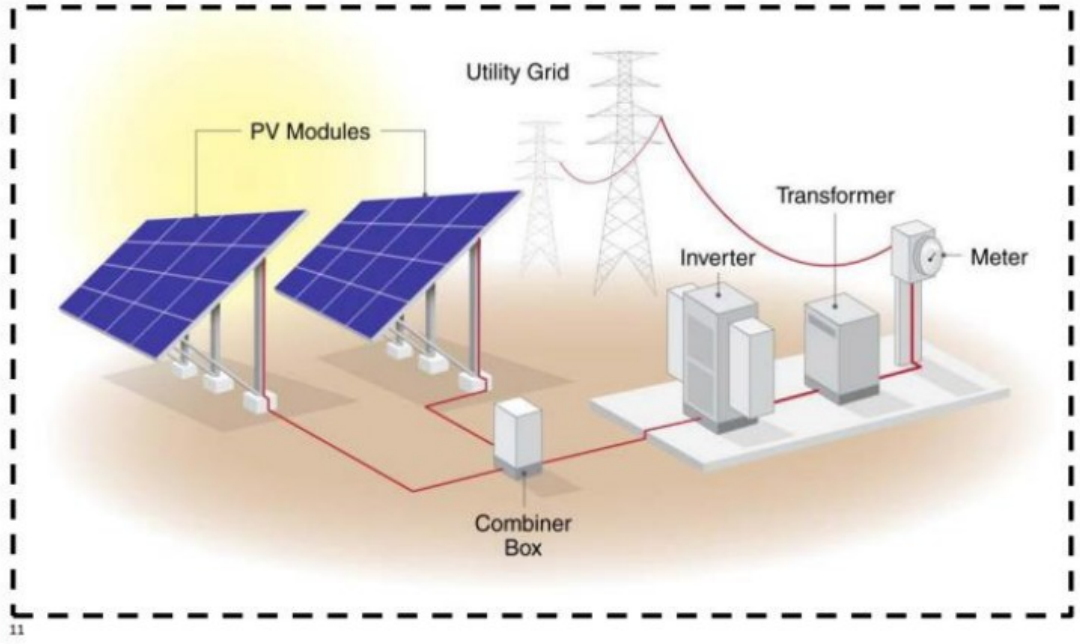
There is no double accounting of emission reductions in the project activity due to the following reasons:

- Project is uniquely identifiable based on its location coordinates,
- Project has dedicated commissioning certificate and connection point,
- Project is associated with energy meters which are dedicated to the consumption point for project developer.

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

As per applicable methodology, 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. Hence, the project boundary includes the project site where the power plant has been installed, associated power evacuation infrastructure, energy metering points, switch yards and other civil constructs and connected to the Indian grid of Telangana.

Project boundary:



Project Boundary

The baseline study of the Indian grid shows that the main sources of GHG emissions under the baseline scenario are CO_2 emissions from the conventional power generating systems. Other emissions are that of CH_4 and N_2O but both emissions have been excluded for simplification. The project activity generates.

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Grid connected electricity generation	CO_2	Yes	In the baseline scenario, the electricity would have been sourced from the Indian grid which in turn would be connected to fossil fuel fired power plants which emit CO_2.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.
Project Scenario	Greenfield solar energy conversion system	CO_2	No	The project activity does not emit any emissions.
		CH_4	No	No methane is expected to be emitted.
		N_2O	No	No nitrous oxide is expected to be emitted.

B.5. Establishment and description of baseline scenario >>

As per the approved consolidated methodology ACM0002. version - 22, 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 involves setting up of a new grid connected solar power plant to harness the green power from solar energy. 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.

As per approved consolidated methodology ACM0002, version 22.0, emission reduction is estimated as difference between the baseline emission and project emission after factoring into leakage

Emission reductions are calculated as per methodology ACM0002, Version 22.0 Equation 17 :

$$ER_y = BE_y - PE_y \quad \textbf{(Eq. 1)}$$

Where,

ER_y = Emissions reductions in year y (t CO2)
BE_y = Baseline emissions in year y (t CO2)
PE_y = Project emissions in year y (t CO2)

Baseline Emissions

The baseline emissions as per methodology ACM0002, Version 22.0, para 57; encompass solely the CO2 emissions stemming from electricity generation in power plants displaced by the project activity. The methodology operates on the assumption that any electricity generation exceeding baseline levels would have originated from established grid-connected power plants and the integration of new grid-connected power plants.

The Baseline emissions as per methodology ACM0002, Version 22.0 Equation 11 in year y can be calculated as follows:

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

Where:

BE_y= Baseline emissions in year *y* (tCO_2/yr)

$EG_{PJ,y}$= 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/yr)

$EF_{grid,y}$= Grid Emission factor in year y (tCO_2/MWh)

Since the project activity is the installation of a new grid connected renewable power plant (green field project), hence, $EG_{PJ,y}$ has been calculated as:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

$EG_{PJ,y}$ = 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/yr)
EGfacility,y = Quantity of net electricity generation supplied by the project plant/unit to the grid in year *y* (MWh/yr)

A "grid emission factor" denotes the CO2 emission factor (measured in tCO2/MWh) associated with each unit of electricity supplied by an electricity system. The UCR suggests employing an emission factor of 0.9[1] from 2013 to 2023 and Emission Factor of 0.757 tCO2/MWh for 2024 as a

[1]As per UCR CoU Standard Update: 2024 Vintage UCR Indian Grid Emission Factor Announced | by Universal

cautious estimate for Indian projects.

Project Emission:
Regarding project emissions, ACM0002 version 22.0 specifies that only emissions related to fossil fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, and emissions from water reservoirs of hydroelectric plants should be taken into account. Since the project involves a Solar power project, emissions from renewable energy plants are negligible.
Hence (PEy = 0).

Leakage Emission:
Leakage, as outlined in ACM0002 version 22.0, para 5.6, is considered to be zero as there is no transfer of energy-generating equipment in the project activity.
Hence (LEy = 0).

While the actual emission reduction achieved during the initial crediting period will be submitted during the first monitoring and verification, an ex-ante estimation is provided for reference.

Estimated Annual or Total baseline emission reductions (BEy)= 82,191 CoUs /year (82,191 tCO_{2eq}/year)

Year	Net Generation	Baseline Emissions	Project Emissions	Leakage	Emission Reductions	EF
	MWh	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO_2e)	(tCO2/MWh)
Year 1	94783.20	85304.88	0.00	0.00	85304.88	0.9
Year 2	94309.28	84878.36	0.00	0.00	84878.36	0.9
Year 3	93837.74	84453.96	0.00	0.00	84453.96	0.9
Year 4	93368.55	84031.69	0.00	0.00	84031.69	0.9
Year 5	92901.71	83611.54	0.00	0.00	83611.54	0.9
Year 6	92437.20	83193.48	0.00	0.00	83193.48	0.9
Year 7	91975.01	82777.51	0.00	0.00	82777.51	0.9
Year 8	91515.14	69276.96	0.00	0.00	69276.96	0.757
Total Emission reduction	**745127**	**657528**	**0**	**0**	**657528**	
Average Emission Reduction	62094	54794	0	0	82,191	

B.6. Prior History>>

The project activity is a ground mounted Large -scale solar project and this project was never applied under any other GHG mechanism prior to this registration with UCR. Also, the capacity or the total project has not been applied for any other GHG mechanism. Hence project will not cause double accounting of carbon credits (i.e., COUs)

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

The start date of crediting under UCR is considered as 02/11/2017, and no GHG emission reduction has been claimed so far.

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

There are no permanent changes from registered PCN monitoring plan and applied methodology

B.9. Monitoring period number and duration>>

First Issuance Period: 7 years, 10 months, 18 days – 02/11/2017 to 31/12/2024

B.8. Monitoring plan>>

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

Data/Parameter	EFGrid,y
Data unit	tCO2 /MWh
Description	A "grid emission factor" refers to a CO2 emission factor (tCO2/MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO2/MWh for the 2013 – 2023 years & 0.757 tCO2/MWh for 2024 onwards 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 conservative approach.
Source of data Value(s) applied	UCRCoUStandardAug2022updatedVer6_090822220127104470.pdf (rackcdn.com) https://medium.com/@UniversalCarbonRegistry/ucr-cou-standard-update-2024-vintage-ucr-indian-grid-emission-factor-announced-ddb790cdc603
Measurement methods and procedures	-
Monitoring frequency	Ex-ante fixed parameter
Purpose of data	For the calculation of Emission Factor of the grid

Data and Parameters to be monitored

Data / Parameter:	$EGpj_{,y}$ net
Data unit:	MWh
Description:	Net electricity supplied to the Indian grid facility by the project activity.
Source of data:	Joint Meter Reading Report
Measurement procedures (if any):	Data Type: Measured Monitoring equipment: Energy Meters are used for monitoring Calibration frequency: Once in 5 years (considered as per provision of CEA India). Cross checking: Quantity of net electricity supplied to or consumed at PP's facility will be cross checked from the monthly bills or invoices raised by TSNPDCL/NPDCTL whichever is applicable. The Net electricity supplied to the grid will be calculated by the values of electricity export to the grid. The Net electricity is recorded as following: Thus, EGPJ,y = EGNet,Export
Value Applied	**62,094 MWh** (Annualized average value has been considered here for an ex-ante estimation only, whereas this is an-ex post parameter hence actual value shall be applied during monitoring and verification)
Monitoring frequency:	Monthly The net energy exported to the grid is measured every month using calibrated energy meter by the State Electricity Board authorities in the presence of the project implementer or its representatives. The meter/s shall be jointly inspected and sealed by authorised representatives of the company and the state utility. Measuring procedure: Will be measured by an export import energy meter. The net electricity exported by the project plant would either be directly sourced as a measured parameter or be calculated by deducting the amount of imported electricity from the total amount of exported electricity. Accuracy class of energy meter: 0.2s
QA/QC procedures:	Continuous monitoring, hourly measurement by site In-charge, monthly recording in Sub-station. Tri-vector (TVM)/ABT energy meters with accuracy class 0.2s.
Purpose of Data	Calculation Of Baseline Emission