PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT

Title: 14.335 MW Bundled Solar Power Projects by Jay International

Version 1.0

Date: 10.07.2025

First CoU Issuance Period: 05 years

Date: 01/01/2020 to 31/12/2024

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

BASIC INFORMATION	
Title of the project activity	14.335 MW Bundled Solar Power Projects by Jay International
Scale of the project activity	Small Scale
Completion date of the PCN	25.06.2025
Project participants	M/s Jay International (PP) Yojan Solution Pvt. Ltd. (Aggregator)
Host Party	INDIA
Applied methodologies and standardized baselines	Applied Baseline Methodology: AMS-I.D.: "Grid connected renewable electricity generation", version 18 Standardized Baseline: UCR Protocol Emission Factor
Sectoral scopes	01 Energy industries (Renewable/Non-Renewable Sources)
Estimated amount of total GHG emission reductions	58,532 CoUs (58,532 tCO_2e)

SECTION A. Description of project activity

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

The proposed project titled under UCR is **"14.335 MW Bundled Solar Power Projects by Jay International."** This bundled activity includes grid-connected, ground-mounted Solar PV installations located across two Indian states.

In the state of **Gujarat**, the project is situated in **Jamnagar District**, covering the following locations: Dhudasiya and Modpar villages in Taluka: Jamnagar; Moti Matli village in Taluka: Kalawad; and Khiri village in Taluka: Jodiya.

In the state of **Maharashtra**, the project is located in **Nashik District**, specifically at Musalgaon village in Sinnar Taluka.

This is an operational project that consistently reduces greenhouse gas (GHG) emissions and is currently being registered under the **Universal Carbon Registry (UCR).**

Purpose of the project activity:

The proposed bundled project comprises **grid-connected, ground-mounted Solar PV installations** with a **total installed capacity of 14.335 MW**. The electricity generated under this bundled solar initiative is distributed through two distinct mechanisms:

(i) A portion is allocated for **captive use by designated industrial and commercial consumers** through wheeling agreements with the grid, and

(ii) The remaining capacity is utilized for **sale to third-party consumers** under long-term Power Purchase Agreements (PPAs) or through **open access arrangements**, depending on the regional regulatory framework.

The project has been conceptualized and promoted as a **bundled solar initiative** by the **Project Proponent (PP)**, in collaboration with the entities listed below.

Jay International, a Gujarat-based manufacturer of brass components, has been duly authorized by several co-located solar project owners to serve as their representative for the purpose of project submission, coordination, and ongoing management under the carbon credit project, ensuring compliance and coordination with the relevant processes.

The details of the Solar PV installations in **Jamnagar district** are provided below:

No.	Project	Latitude	Longitude	Date of Commissioning	Total Installed Capacity (MW)
1	DS RE Energy	22.319737	70.306511	27-12-2019	0.972
2	JTK Industries	22.316691	70.306388	31-12-2019	0.902
3	Yug Energy	22.319737	70.306511	31-12-2019	0.516
4	BJV Enterprise	22.316691	70.306388	31-12-2019	0.599
5	Vitrag Sun Power	22.5786889	70.2324944	25-11-2021	1
6	Vitrag Solar Energy	22.579164	70.232636	25-11-2021	1
7	SSK Power	22.358387	70.236552	09-12-2021	0.547

8	Sunlight Energy	22.357619	70.237153	09-12-2021	0.547
9	Arka Power	22.358968	70.23605	09-12-2021	0.547
10	Naranbhai Nandania	22.3594639	70.23615	09-12-2021	0.547
11	RLZ Energy	22.32715	70.290177	10-03-2022	0.599
12	SRK Power	22.327363	70.28969	10-03-2022	0.599
13	Sunrise Energy	22.327193	70.289969	10-03-2022	0.599
14	Urza Solar	22.327306	70.289782	10-03-2022	0.599
15	KD Power	22.327243	70.289352	11-03-2022	0.648
16	TNM power	22.327373	70.28874	11-03-2022	0.599
17	Jay International	22.316869	70.304418	06-06-2022	0.399
18	Rupam Overseas	22.316973	70.305628	23-08-2022	0.596
TOTAL					11.815

The details of the Solar PV installations located **Nashik district** is provided below

No.	Project	Latitude	Longitude	Date of Commissioning	Total Installed Capacity (MW)
19	Ashoka Institute of Medical Sciences & Research	19.860089	73.037859	11-09-2022	2.52

The bundled solar project includes entities located in **Jamnagar district, Gujarat**, all of which operate under **Paschim Gujarat Vij Company Ltd. (PGVCL)** through executed **Power Purchase Agreements (PPAs) and Wheeling Agreements** for the sale and transmission of solar electricity.

In contrast, the project component located in **Nashik district, Maharashtra i.e. Ashoka Institute of Medical Sciences and Research** functions under the **Open Access mechanism**, facilitated by the **Maharashtra State Electricity Transmission Company Ltd. (MSECL)**. This allows the institute to directly procure solar electricity for captive use across the state grid infrastructure.

The purpose of the bundled solar project is to generate electricity using a clean, renewable resource—**solar energy**—and to mitigate greenhouse gas (GHG) emissions by replacing fossil fuel-based grid electricity. In the absence of this initiative, an equivalent volume of power would likely have been produced by carbon-intensive thermal plants.

With an estimated output of approximately **68187.8 MWh** during the crediting period, the project distributes solar electricity through two mechanisms: direct wheeling for captive use and third-party sales via long-term PPAs. The systems utilize advanced PV technologies such as polycrystalline, multi-crystalline, and Mono-PERC modules, ensuring zero-emission generation throughout their operation.

The project installations are aligned with the regional distribution networks of PGVCL and MSECL, supporting clean energy supply in both Gujarat and Maharashtra. It is expected to reduce **58,532 tCO_2e** over the 1st crediting period (**January 2020 – December 2024**), contributing meaningfully to India's renewable energy and climate mitigation goals without causing environmental harm.

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

This **Greenfield** solar power initiative introduces clean electricity generation in regions currently dependent on fossil fuel-dominated grid power. Despite India's growing renewable energy capacity, the national grid maintains a high emission factor, establishing a relevant baseline for assessing project impact.

In accordance with Ministry of Environment, Forest and Climate Change (MoEFCC) guidelines, the project delivers comprehensive benefits across four key sustainability dimensions:

Social Development Impact

The project has played a vital role in generating employment for the local workforce during its construction phase. Following implementation, it has continued to offer stable and long-term job opportunities to the local community, with this positive impact expected to persist throughout the project's operational lifespan. These sustained employment opportunities are anticipated to contribute significantly to poverty reduction and socio-economic development in the surrounding region.

Economic Value Creation

The project initiative is driving meaningful economic growth by creating vital employment opportunities within local communities. The project generates both short-term construction jobs and long-term positions across a broad range of skill levels, supporting inclusive workforce development.

Powered by strategic carbon revenue funding, this investment in sustainable energy not only ensures enduring economic benefits but also enhances the stability and capacity of the regional power grid. As energy reliability improves, surrounding areas become more attractive to complementary industries, stimulating the emergence of a dynamic economic hub. Local residents gain from rising property values, expanded career prospects, and improved quality of life.

This integrated approach to infrastructure and community development promotes a resilient economic ecosystem that aligns environmental stewardship with measurable social impact.

Technological Advancement

Research and development investments by technology providers have increased proportionally with market demand, resulting in improved efficiency metrics for next-generation solar equipment. The technology improvement cycle, driven by demonstrated project success, creates sustainable conditions for continued innovation in the renewable energy sector. Technologies including polycrystalline, multi-crystalline, and Mono-PERC modules demonstrates efficiency in optimization. This project demonstrations the operation for technological advancement by proving the viability of commercial-scale solar power generation.

Environmental Performance

The project delivers quantifiable environmental benefits through displacement of fossil fuel-generated electricity. Key environmental advantages include zero operational greenhouse gas emissions, elimination of particulate matter and other air pollutants, and minimal water consumption compared to thermal generation. This approach preserves natural resources while aligning with India's Nationally Determined Contributions (NDCs) under the Paris Agreement.

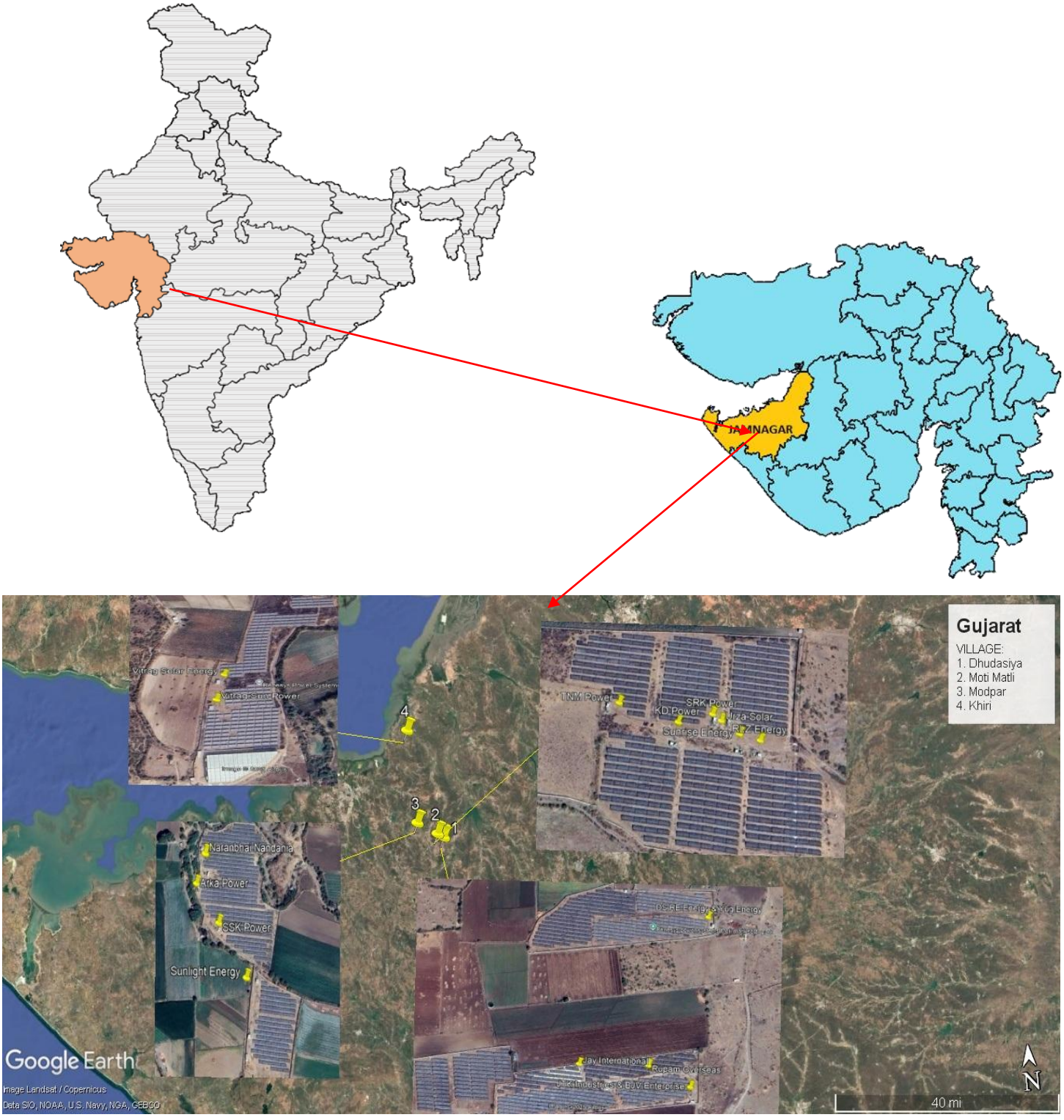
This project not only advances clean energy transition objectives but also delivers substantial co-benefits that align with India's sustainable development priorities and international climate commitments.

SDG	Relevant SDG Target	Description – How the Project Contributes
 SDG 7 Affordable and Clean Energy	Target 7.2: By 2030, increase substantially the share of renewable energy in the global energy mix.	The project deploys solar photovoltaic technology to generate renewable electricity, thereby increasing the share of clean energy in the regional power mix and enhancing energy security.
 SDG 8 Decent Work and Economic Growth	Target 8.4: Improve progressively, through 2030, global resource efficiency in consumption and production.	The project supports sustainable industrial growth by creating skilled and semi-skilled employment during installation, operation, and maintenance of solar facilities while promoting clean technology.
 SDG 13 Climate Action	Target 13.2: Integrate climate change measures into national policies, strategies and planning.	This **14.335 MW** bundled solar meet the SDG 13 goal by saving fossil fuel and produce clean energy. The project is expected to reduce **58,532 tCO_2** emissions per year by displacing fossil fuel-based grid electricity with solar power, thereby contributing to climate change mitigation and low-carbon development.

A.3. Location of project activity >>

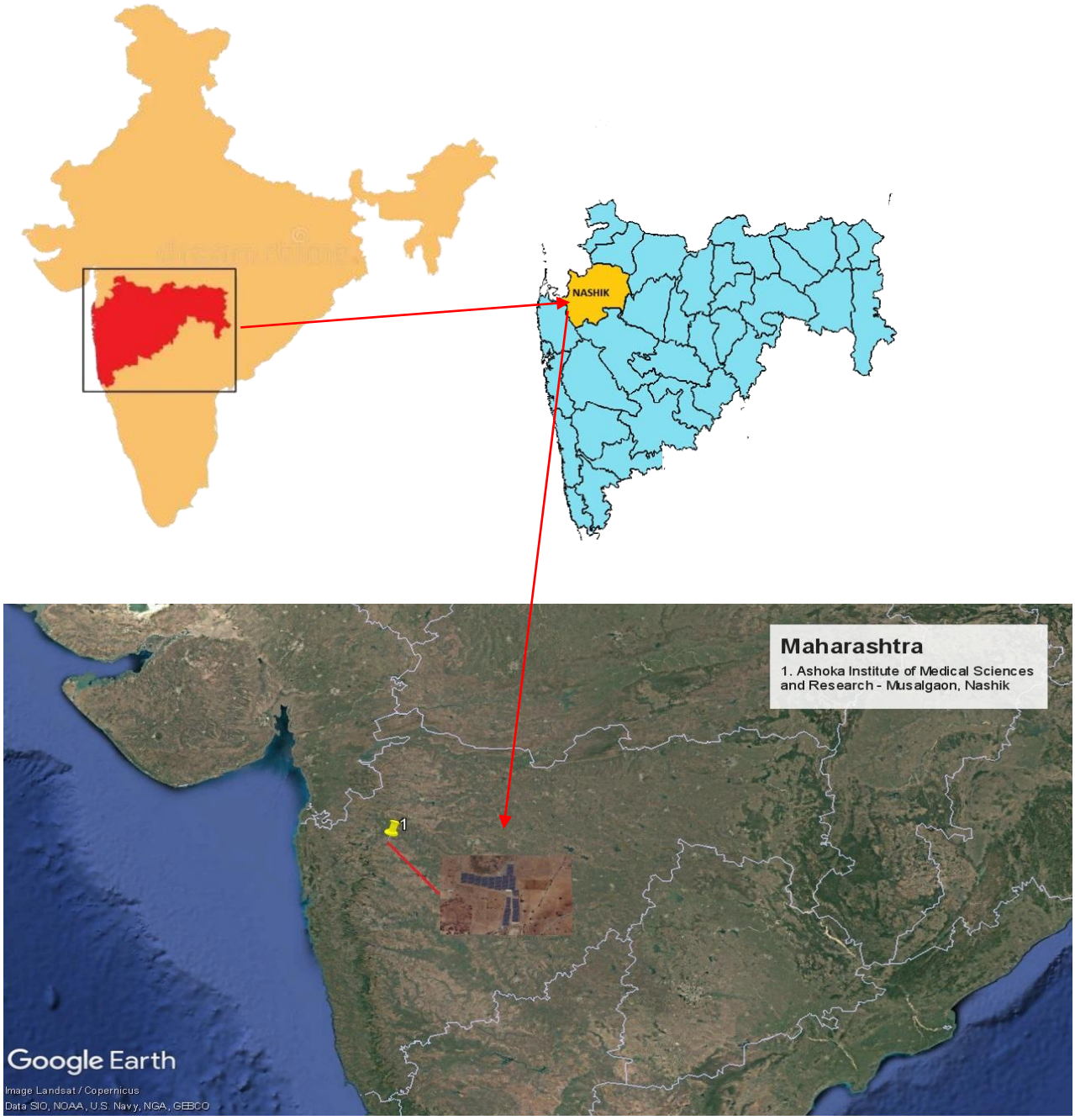
Gujarat-Based Installations (under PGVCL - Jamnagar District)

No.	Entity Name	Country	State	District	Tehsil	Village	Code (PIN)
1	Jay International	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
2	JTK Industries	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
3	DS RE Energy	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
4	Yug Energy	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
5	BJV Enterprise	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
6	Rupam Overseas	India	Gujarat	Jamnagar	Jamnagar	Dhudasiya	361130
7	KD Power	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
8	RLZ Energy	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
9	SRK Power	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
10	Sunrise Energy	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
11	TNM Power	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
12	Urza Solar	India	Gujarat	Jamnagar	Kalawad	Moti Matli	361013
13	SSK Power	India	Gujarat	Jamnagar	Jamnagar	Modpar	360531
14	Sunlight Energy	India	Gujarat	Jamnagar	Jamnagar	Modpar	360531
15	Arka Power	India	Gujarat	Jamnagar	Jamnagar	Modpar	360531
16	Naranbhai Nandania	India	Gujarat	Jamnagar	Jamnagar	Modpar	360531
17	Vitrag Sun Power	India	Gujarat	Jamnagar	Jodiya	Khiri	361250
18	Vitrag Solar Energy	India	Gujarat	Jamnagar	Jodiya	Khiri	361250



Maharashtra-Based Installation (under MSECL - Open Access)

No.	Entity Name	Country	State	District	Tehsil	Village	Code (PIN)
19	Ashoka Institute of Medical Sciences & Research	India	Maharashtra	Nashik	Sinnar	Musalgaon	422112

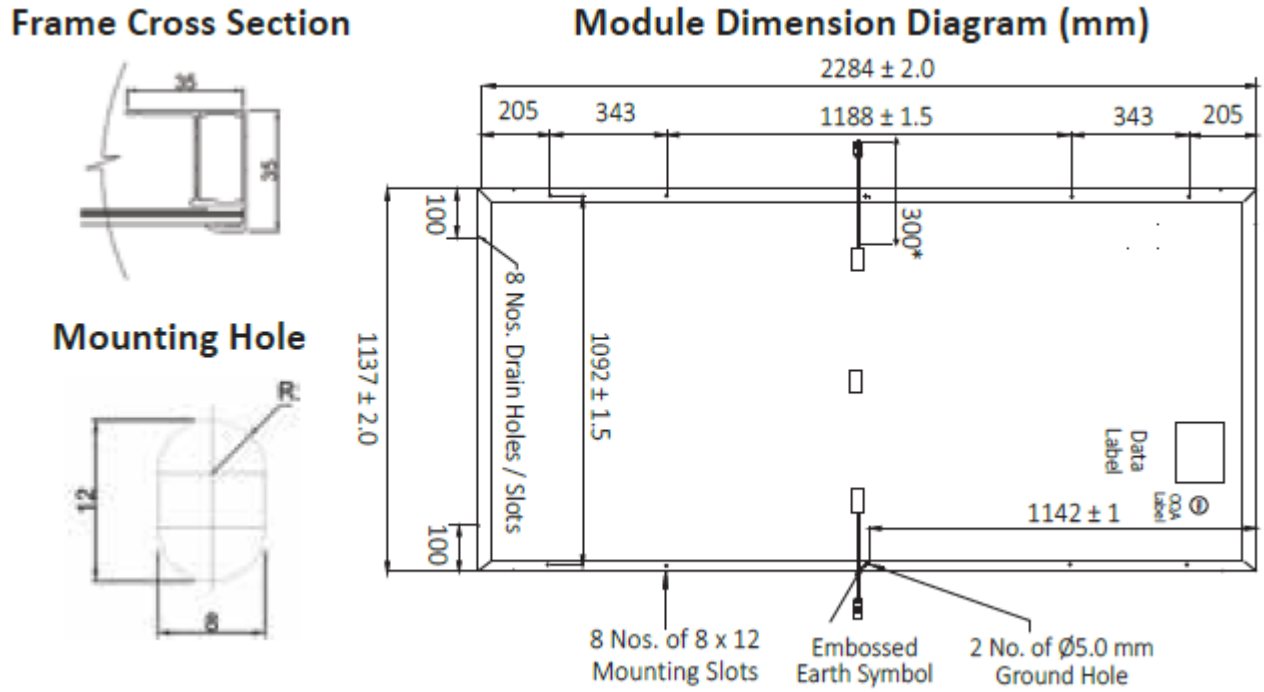


A.4. Technologies/measures >>

The solar project has a total capacity of **14.332 megawatts (MW)** and is spread across two ground-mounted installations located in **Jamnagar, Gujarat (11.815 MW)** and **Nashik, Maharashtra (2.52 MW)**. These systems utilize photovoltaic technology to convert sunlight into electricity, directly contributing to clean energy generation while displacing fossil-fuel-based power sources. The installations are designed for grid integration and long-term performance, equipped with high-efficiency modules, robust structural foundations, and smart monitoring infrastructure.

System Design and Technology

The technology employed involves **solar photovoltaic (PV) modules** mounted on fixed-tilt ground-mounted structures. The modules convert solar irradiance into direct current (DC) electricity, which is then routed through inverters that convert it to alternating current (AC) for injection into the grid. The project uses **mono PERC and polycrystalline modules**, with high module efficiencies (above 20% for mono PERC and around 17% for polycrystalline).

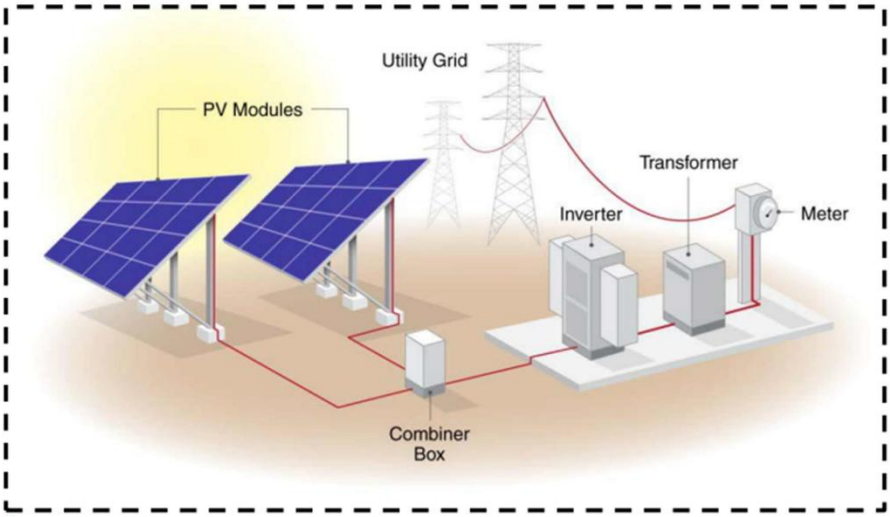


The Jamnagar site primarily uses mono PERC modules like **Waaree ARKA WSMD-540 series**, while the Nashik site uses **Navisol NSA330** polycrystalline modules.

In **Jamnagar**, the **11.815 MW** installation spans a large, prepared land area with a clear solar exposure. Ground-mounted arrays are organized in multiple strings, supported on galvanized steel structures anchored with RCC footings. Module interconnection is done through MC4-compatible connectors with DC cables routed to string inverters.

The inverters are placed in inverter rooms, and power is collected at a central transformer yard before being stepped up and transmitted to the grid. The system includes protective equipment such as lightning arresters, surge protection devices, and earthing pits.

In **Nashik**, the **2.52 MW** system follows a similar engineering approach, adapted to the regional site characteristics. The system uses **NSA330 330 Wp polycrystalline modules** arranged in long rows, each mounted on metallic structures fixed in concrete. The modules have a **module efficiency of 17.0%**, an open circuit voltage of **45.3 V**, and a short circuit current of **9.52 A**. These modules feed into centralized or distributed inverters rated for medium-scale commercial operations. The entire system is monitored through a SCADA-based control room, which tracks real-time generation, voltage, and performance.



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Project Boundary

Key Module Specifications

Specification	Jamnagar (Mono PERC)	Nashik (NSA330)
Rated Power (Pmax)	530–550 Wp	330 Wp
Module Efficiency	20.2%–21.3%	17.00%
Voltage at Max Power (Vmp)	~41.8 V	36.8 V
Current at Max Power (Imp)	~13.0 A	8.97 A
Open Circuit Voltage (Voc)	~50.0 V	45.3 V
Short Circuit Current (Isc)	~13.8 A	9.52 A
Operating Temp Range	-40 to +85 °C	-40 to +85 °C
System Voltage	1500 V	1000–1500 V

A.5. Parties and project participants >>

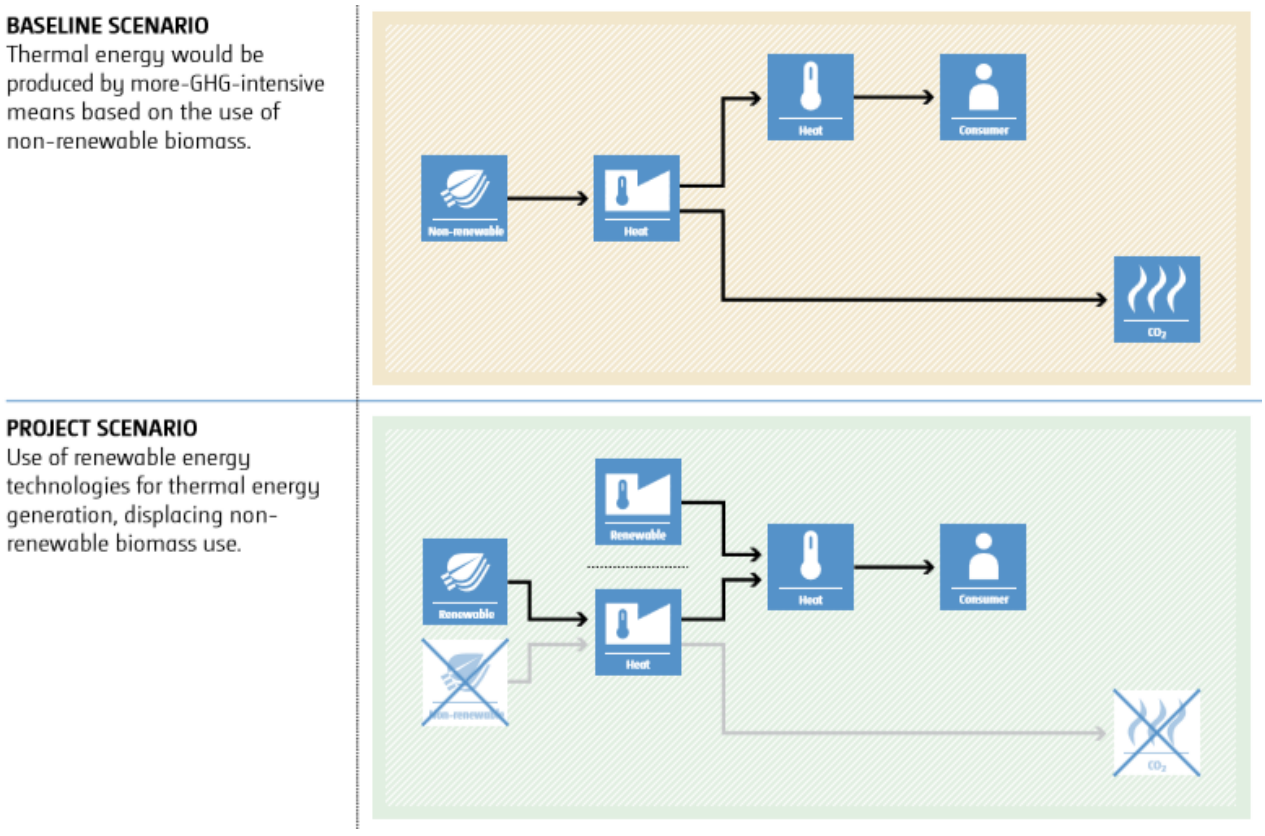
Party (Host)	Participants
INDIA	**Jay International (Project Proponent)** Address: Plot No 464, GIDC, Shankar Teri Udhyognagar, Jamnagar – 361004 Gujarat (India) **Yojan Solutions Pvt. Ltd. (Aggregator)** **UCR ID:** **UCR Contact:** naimishraval@yojan.in Contact Person: Dipti Raval Email: info@yojan.in, projects@yojan.in

A.6. Baseline Emissions>>

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

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.

Schematic diagram showing the baseline scenario:



The "grid emission factor" refers to the CO_2 emission factor (tCO_2/MWh) associated with each unit of electricity supplied by an electricity system. The UCR recommends an emission factor of **0.9 tCO_2/MWh** as a fairly conservative estimate for Indian projects that have not been previously verified under any GHG program

for the vintage years **2013–2023**.

For the **2024** vintage year, a grid emission factor of **0.757 tCO_2/MWh** has been considered. The combined margin emission factor calculated from the CEA database in India results in higher emissions than the default value.

Hence, the same emission factor has been used to calculate the emission reduction under a conservative approach

A.7. Debundling>>

This project activity is not a de-bundled component of a larger project activity. Similarly, each of the bundle members is also not a de-bundled component of any larger project activity

SECTION B. Application of methodologies and standardized baselines

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

The project activity is approved under the positive list of approved activities under the UCR CoU Standard

Sectoral Scope	01, Energy industries (Renewable/Non-renewable sources)
Type	I - Renewable Energy Projects
Scale	Small Scale
Category	AMS-I.D. (Title: "Grid connected renewable electricity generation", version 18)

Illustration of respective situations under which each of the methodology ("AMS-I.D.: Grid connected renewable electricity generation", "AMS-I.F.: Renewable electricity generation for captive use and mini-grid" and "AMS-I.A.: Electricity generation by the user") applies is included in Table 2 below.

Table 2. Applicability of AMS-I.D, AMS-I.F and AMS-I.A based on project types

	Project type	AMS-I.A	AMS-I.D	AMS-I.F
1	Project supplies electricity to a national/regional grid		√	
2	Project displaces grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid)			√
3	Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling)		√	
4	Project supplies electricity to a mini grid[5] system where in the baseline all generators use exclusively fuel oil and/or diesel fuel			√
5	Project supplies electricity to household users (included in the project boundary) located in off grid areas	√		

Applied conditions 1 and 3

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

This project activity involves generation of grid connected electricity from the construction and operation of a new solar power-based power project. The project activity has installed capacity of **14.335 MW** which will qualify for a small-scale project activity under Type-I of the Small-Scale methodology.

The project status is corresponding to the methodology AMS-I.D., version 18 and applicability of methodology is discussed 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., wind power project which sell its energy to the grid and falls under applicability criteria option 1 point (a). Thus, this project activity fulfil this criterion.
2. This methodology is applicable to project activities that: (a) Install a Greenfield plant. (b) Involve a capacity addition in (an) existing plant(s) (c) Involve a retrofit of (an) existing plant(s). Involve a rehabilitation of (an) existing plant(s)/unit(s); or Involve a replacement of (an) existing plant(s).	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
3. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: (a) The project activity is implemented in existing reservoir, with no change in the volume of the reservoir; or (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/m2. (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/m2	The project activity involves installation of Solar PV (SPV); hence, this criterion is not applicable.
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.	The proposed project is **14.335** 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.
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	There is no other existing renewable energy power generation facility at the project site. Therefore, this criterion is not applicable.

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.	
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 >>

To prevent any possibility of double counting emission reductions, the following controls are in place for the project:

- The project is distinctly identified using exact location coordinates, ensuring spatial uniqueness.
- It has a standalone commissioning certificate and a clearly assigned grid or connection point.
- Energy metering systems are exclusively installed for the project, ensuring that all recorded data pertains solely to the activities of the project proponent.

B.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.

Source		GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity generation	CO_2	Yes	Main emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source
Project	Greenfield Wind Power Project Activity	CO_2	No	No CO_2 emissions are emitted from the project
		CH_4	No	Project activity does not emit CH_4
		N_2O	No	Project activity does not emit N_2O

B.5. Establishment and description of baseline scenario (UCR Standard or Methodology) >>

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 defined as follows:

"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 current project activity involves the **installation of a new solar photovoltaic (PV) power plant** with a total capacity of **14.335 MW**, comprising **ground-mounted systems** installed across **Jamnagar, Gujarat (11.815 MW)** and **Nashik, Maharashtra (2.52 MW)**. The electricity generated from the **Jamnagar installation** is supplied to the Indian grid through **Power Purchase Agreements (PPAs)** with licensed distribution utilities or bulk consumers.

The **Nashik installation**, on the other hand, operates under the **Open Access mechanism**, where power is wheeled through the grid to be consumed at an off-site facility under a third-party agreement or captive use. Both mechanisms contribute to grid decarbonization by displacing fossil fuel-based electricity that would have otherwise been generated under the baseline scenario.

In the absence of this project activity, the equivalent amount of electricity would have been generated by the **operation of fossil fuel-based grid-connected power plants** and by the **addition of new fossil fuel-based generation sources** into the Indian electricity grid. India's power generation is still predominantly based on coal and other fossil fuels. Therefore, the baseline scenario for this solar project is the generation of an equivalent amount of electricity from conventional sources, primarily fossil fuel-based thermal power plants.

The **"grid emission factor"** refers to the amount of carbon dioxide (CO_2) emissions (in tonnes of CO_2 per

megawatt-hour) associated with each unit of electricity supplied by the electricity system. For Indian grid-connected renewable energy projects that have not been previously verified under any greenhouse gas (GHG) program, the **Universal Carbon Registry (UCR)** recommends a **default conservative emission factor of 0.9 tCO_2/MWh** for the **vintage years 2013–2023**.

However, for the **2024 vintage year**, the project uses a more recent and conservative figure of **0.757 tCO_2/MWh**, which is aligned with the **combined margin emission factor calculated by the Central Electricity Authority (CEA)** in India. This emission factor reflects a weighted average of both the operating margin and build margin and considers the growing contribution of renewable energy but still reflects the dominance of fossil fuel-based generation. As this value results in higher emissions than the default factor, it has been used for emission reduction calculations to ensure a conservative and credible approach.

In conclusion, the baseline emissions for this solar PV project are calculated as the product of net electricity generated and exported to the grid (in MWh) and the emission factor of **0.757 tCO_2/MWh for 2024 and vintage years 2013–2023 is 0.9 tCO_2/MWh**, in line with the methodology AMS-I.D. and UCR guidance.

Net GHG Emission Reductions and Removals:

Thus,

$$ERy = BEy - PEy - LEy$$

Where:

ERy = Emission reductions in year y (tCO2/y)
BEy = Baseline Emissions in year y (t CO2/y)
PEy = Project emissions in year y (tCO2/y)
LEy = Leakage emissions in year y (tCO2/y)

Baseline Emissions

Baseline emissions include only CO2 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:

$$BEy = EG_{BL,yl} \times EF_{CO_2, GRID, y}$$

Where,

***BEy*:** Baseline emissions in year y (tCO_2/y)

***EG BL,yl*:** 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, CO2, GRID, y: UCR recommended emission factor of 0.9 tCO_2/MWh for the vintage years 2013–2023 has been considered.

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

For the 2024 vintage year, a grid emission factor of 0.757 tCO_2/MWh has been considered

Project Emissions

As per Paragraph 39 of 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, PEy=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, LE=0

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

Hence Net GHG emission reduction, = 58532 -0-0 = tCO2/year (i.e., 58532 CoUs/year).

B.6. Prior History>>

Following are the key details under the prior history of the project: (a) the project was not applied under 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 >>

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

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

Not applicable.

B.9. Monitoring period number and duration>>

First Issuance Period: 05 years, 00 months – 01/01/2020 to 31/12/2024

B.8. Monitoring plan>>

Data/Parameter	UCR recommended emission factor
Data unit	tCO_2 /MWh
Description	A "grid emission factor" refers to a CO_2 emission factor (tCO_2 /MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends an emission factor of 0.9 tCO_2 /MWh for the 2013-2023 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 conservative approach.
Source of data	https://a23e347601d72166dcd6-16da518ed3035d35cf0439f1cdf449c9.ssl.cf2.rackcdn.com//Documents/UCR StandardAug2024updatedVer7_020824191534797526.pdf
Value(s) applied	0.9
Measurement methods and procedures	-
Monitoring frequency	Ex-ante fixed parameter

Data/Parameter	UCR recommended emission factor
Data unit	tCO_2 /MWh
Description	A "grid emission factor" refers to a CO_2 emission factor (tCO_2 /MWh) which will be associated with each unit of electricity provided by an electricity system. The UCR recommends a grid emission factor of 0.757 tCO_2/MWh for the 2024 vintage year as a fairly conservative estimate for Indian projects not previously verified under any GHG program.
Source of data	https://cea.nic.in/wp-content/uploads/2021/03/User_Guide_Version_20.0.pdf
Value(s) applied	0.757
Measurement methods and procedures	-
Monitoring frequency	Ex-ante fixed parameter
Purpose of data	For the calculation of the Emission Factor of the grid

Data / Parameter:	EGPJ,facility, y
Data unit:	MWh
Description:	Total electricity produced by the project activity
Source of data:	Electricity Generation data though monitoring system

Measurement procedures (if any):	Data Type: Measured Monitoring equipment: Energy Meters and inverter data are used for monitoring Recording Frequency: Continuous monitoring and Monthly recording from Energy Meters, Summarized Annually Archiving Policy: Paper & Electronic Calibration frequency: 5 years (as per CEA provision) For example, the difference between the measured quantities of the grid export and the import will be considered as net export: EGPJ,y = EGExport – EGImport
Monitoring frequency:	Monthly
Value applied:	**58532 tCOe** (Ex-ante estimate)
QA/QC procedures:	Calibration of the Main meters will be carried out once in five (5) years as per National Standards (as per the provision of CEA, India) and faulty meters will be duly replaced immediately as per the provision of power purchase agreement
Purpose of data:	The Data/Parameter is required to calculate the baseline emission.
Any comment:	Data will be archived electronically for a period of 36 months beyond the end of crediting period.