



PROJECT CONCEPT NOTE
CARBON OFFSET UNIT (CoU) PROJECT



Title: 35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL).

Version 1.0

Date: 07/08/2024

First CoU Issuance Period: 6 years, 0 months

First Crediting period: 6 years, 0 months

Date: 01/06/2018 to 30/06/2024





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

BASIC INFORMATION

Title of the project activity	35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL).
Scale of the project activity	Large Scale
Completion date of the PCN	07/08/2024
Project participants	Project Proponent / Owner: Fourth Partner Energy Private Limited, (FPEPL). UCR ID: 130501765
Host Party	India
Applied methodologies and standardized baselines	Type I (Renewable Energy Projects) UNFCCC Methodology Category, “ACM0002: Grid-connected electricity generation from renewable sources - Version 22.0 UCR Protocol Standard Baseline Emission Factor
Sectoral scopes	01 Energy industries (Renewable / Non-renewable Sources)
Estimated total amount of average GHG emission reductions per year	17,151 CoUs /year (17,151 tCO_{2eq}/year)

SECTION A. Description of project activity

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

The primary aim of the UCR project activity “35.58 MW Bundled Solar Power Project, initiated by Fourth Partner Energy Private Limited, (FPEPL)” is to generate electricity through clean and renewable solar energy sources. This project seeks to replace grid electricity consumption at the user end with solar power, thus reducing reliance on fossil fuels. The project involves the installation and operation of solar photovoltaic (PV) plants across ten states in India: Haryana, Delhi, Maharashtra, Andhra Pradesh, Goa, Karnataka, Gujarat, Assam, Chhattisgarh, and Jharkhand.

FPEPL, is a leading provider of integrated renewable energy solutions, primarily targeting the commercial and industrial sectors in India and extending its services to South and Southeast Asia. The project activity with a total installed capacity of 35.58 MW, distributed over 88 rooftop solar energy installations, the project supports the transition to sustainable energy by offering Renewable Energy-as-a-Service (REaaS). This allows businesses to meet nearly all their energy needs through renewable sources, contributing significantly to the decarbonization of India's corporate sector.

The project utilizes polycrystalline solar photovoltaic technology, known for its reliability and efficiency in converting sunlight into electricity. Solar PV modules consist of interconnected photovoltaic cells that directly convert sunlight into direct current (DC) electricity. This DC electricity is then converted to alternating current (AC) by inverters, making it compatible with the grid. The electricity generated from these solar plants is supplied to various companies under Power Purchase Agreements (PPA's), effectively reducing the carbon footprint of the energy consumed.

Beyond environmental benefits, the project contributes to social and economic development by creating employment opportunities during both the construction and operational phases. It also encourages the adoption of advanced solar technologies, promoting innovation and technological advancements in the renewable energy sector. In summary, the 35.58 MW Bundled Solar Power Project by FPEPL is a significant step towards a sustainable energy future, supporting both national and global efforts to combat climate change while fostering economic and technological growth.

The project is registered under the Universal Carbon Registry (UCR), which offers carbon incentives for solar programs, thereby promoting the adoption of renewable energy technologies. This project aligns with India's ambitious renewable energy targets, aiming for 450 GW of renewables and 500 GW of non-fossil capacity by 2030. FPEPL has strategically established 9 Special Purpose Vehicles (SPVs) to manage and operate 88 distinct solar plants / sites across various locations, ensuring streamlined operations and centralized management. The company now seeks to leverage this portfolio by claiming carbon credits through UCR, underscoring its commitment to sustainable energy and supporting both national and global efforts to combat climate change while fostering economic and technological growth.

SPV Name	Plants / Site Name	Capacity (kWp)	COD
FPEL Evergreen Energy Private Limited	Reddy's Laboratories Limited, Baddi (FTO-12)	377.88	09-12-2021
FPEL Evergreen Energy Private Limited	Reddy's Laboratories Limited, Baddi (FTO-8)	576.20	31-01-2022
Sun Renewables RT Private Limited	Ascendas Bangalore	753.00	09-10-2017
Daishi Patona Private Limited	Lumax Industries Ltd (Dharuhera)	713.46	01-10-2019
VSV Renewables Private Limited	BIT Mesra	700.00	20-10-2018
FP Zeus Private Limited	Koyo Bearings Bawal-HR	700.82	11-05-2022
VSV Renewables Private Limited	Metro Cash & Carry (Visakhapatnam)	521.26	10-06-2021
VSV Renewables Private Limited	Jawaharlal Nehru University	500.00	21-11-2018
FPEL Evergreen Energy Private Limited	Subros Ltd (Manesar)	497.64	13-04-2022
Sun Renewables RT Private Limited	All India Institute of Speech & Hearing (AIISH), Mysuru	472.00	06-07-2018
Daishi Patona Private Limited	FDC Ltd (Plant 3)	463.52	22-03-2021
VSV Renewables Private Limited	Lenskart (Gurgaon)	455.00	27-01-2019
VSV Renewables Private Limited	Metro Cash & Carry (Vijayawada)	450.72	28-05-2020
FPEL Evergreen Energy Private Limited	Star Wire India Ltd., Unit 2 (Chhainsa)	1,954.00	10-12-2021
FPEL Evergreen Energy Private Limited	Star Wire India Ltd., Unit 2 (Chhainsa)	624.78	10-12-2021
Sun Renewables RT Private Limited	Nitto Denko India Private Limited	400.00	10-02-2019
Daishi Patona Private Limited	D Mart (Durg)	299.97	21-01-2022
Daishi Patona Private Limited	D Mart (Bhilai-1)	360.36	11-03-2022
VSV Renewables Private Limited	Army Public School	350.00	01-09-2018
VSV Renewables Private Limited	Ask Automotive Pvt Ltd., (Unit-12)	323.40	07-12-2020
Daishi Patona Private Limited	D Mart (Rajnandgaon)	299.70	18-11-2021
VSV Renewables Private Limited	Metro Cash & Carry (Guntur)	280.06	31-05-2021
FPEL Evergreen Energy Private Limited	Bharat Seats Ltd., Gurgaon (HR)	273.30	10-09-2021
Daishi Patona Private Limited	FDC Ltd (Plant 1&2)	265.50	07-04-2021
VSV Renewables Private Limited	AA Friction Materials Pvt Ltd	227.80	19-02-2021
VSV Renewables Private Limited	Teri Gram	222.00	04-05-2019
Daishi Patona Private Limited	D Mart (Karakambadi-Tirupati)	215.00	13-03-2019
FPEL Mega Solar Private Limited	D Mart (Palanpur)	199.82	11-11-2021
FPEL Mega Solar Private Limited	D Mart (Billimora)	199.80	01-12-2021
FPEL Mega Solar Private Limited	D Mart (Ankleshwar)	199.81	24-01-2022
Daishi Patona Private Limited	D Mart (Airport Road - Rajahmundry)	192.60	06-01-2022
VSV Renewables Private Limited	D Mart (Nava Naroda)	187.50	07-09-2021

Sun Renewables RT Private Limited	Daikin Air Conditioning India Pvt Ltd	185.00	21-02-2019
FPEL Mega Solar Private Limited	D Mart (Surendra Nagar)	168.30	26-01-2022
VSV Renewables Private Limited	Solara Active Pharma, Mysore	168.96	27-11-2019
VSV Renewables Private Limited	ASK Fras-Le Friction (Unit-9)	148.40	05-01-2021
Daishi Patona Private Limited	D Mart (Charoda Bhilai)	136.60	14-10-2021
Daishi Patona Private Limited	D Mart (RCC - Rajahmundry)	130.10	04-07-2019
Daishi Patona Private Limited	D Mart (Car Port - Rajahmundry)	130.00	23-08-2019
Daishi Patona Private Limited	D Mart (Faridabad)	127.14	19-01-2022
Daishi Patona Private Limited	D Mart (Bhimavaram)	124.80	07-10-2021
Daishi Patona Private Limited	D Mart (Mangalore - II)	121.60	25-02-2021
FPEL Mega Solar Private Limited	D Mart (Yogi Chowk)	116.55	18-12-2021
Daishi Patona Private Limited	D Mart (Nelemangala)	111.00	30-01-2020
VSV Renewables Private Limited	D Mart (Anand)	110.76	12-09-2018
VSV Renewables Private Limited	D Mart (Vapi)	109.44	15-07-2021
Daishi Patona Private Limited	D Mart (Guntur Ring Road)	104.52	19-01-2020
Daishi Patona Private Limited	D Mart (Tuni)	103.40	12-08-2019
Daishi Patona Private Limited	D Mart (Vijaywada)	93.80	16-07-2020
Daishi Patona Private Limited	D Mart (Gudivada)	88.80	08-11-2020
Daishi Patona Private Limited	D Mart (Palm Heights)	86.62	02-09-2020
Daishi Patona Private Limited	D Mart (Gajuwaka)	85.80	19-11-2019
VSV Renewables Private Limited	D Mart (Jahangirapura)	75.24	15-07-2021
Daishi Patona Private Limited	D Mart (Tanuku)	74.00	19-11-2020
Daishi Patona Private Limited	D Mart (Sarjapura)	66.00	19-08-2019
VSV Renewables Private Limited	FSC Koka	66.00	07-12-2019
Daishi Patona Private Limited	D Mart (Machilipatnam)	63.18	25-10-2021
VSV Renewables Private Limited	Ask Automotive Pvt Ltd., (Unit-07)	59.40	03-11-2020
VSV Renewables Private Limited	D Mart (Kalol)	54.72	04-10-2021
VSV Renewables Private Limited	D Mart (Bhayli)	54.76	08-10-2021
Daishi Patona Private Limited	D Mart (Anand)	88.00	12-09-2018
Daishi Patona Private Limited	D Mart (Bhimavaram)	124.80	07-10-2021
Daishi Patona Private Limited	D Mart (Yelahanka)	52.00	07-05-2019
Daishi Patona Private Limited	D Mart (Anantapur)	52.00	14-12-2019
Daishi Patona Private Limited	D Mart (Eluru)	50.10	01-10-2018
VSV Renewables Private Limited	Big Basket, Ahmedabad	49.40	19-04-2019
Daishi Patona Private Limited	D Mart (Karimnagar)	45.36	01-06-2018
Daishi Patona Private Limited	D Mart (Madinaguda)	32.50	01-07-2018
Daishi Patona Private Limited	D Mart (Kakinada)	30.50	04-03-2019
Daishi Patona Private Limited	D Mart (Marripalem)	23.40	25-07-2018
Daishi Patona Private Limited	D Mart (Lal Park)	8.60	04-10-2018
FP Zeus Private Limited	Aparna Enterprises Limited - 4P	2,691.36	11-10-2022
FP Zeus Private Limited	Aparna Enterprises Limited	985.60	25-12-2019
FPEL Evergreen Energy Private Limited	Sanofi India Limited	1,809.00	28-09-2022
FP Zeus Private Limited	NCL Kondapalli Phase 2	1,592.10	18-05-2023
FPEL Evergreen Energy Private	Star Wire Chhainsa Extension	2,024.55	02-03-2023

Limited			
FP Zeus Private Limited	NCL Buildtek Limited Kavuluru	485.40	13-01-2023
FPE Andromeda	Metro Cash & carry Pvt Ltd (BESS), Bangalore	416.07	09-11-2022
VSV Renewables Private Limited	Nuvoco Vistas corp. Ltd.	1,287.00	07-08-2020
FPEL Evergreen Energy Private Limited	Ask Automotive Pvt Ltd., (Unit-12) - Ext.	422.28	10-04-2023
Sun Renewables RT Private Limited	National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore	1,144.00	23-07-2018
VSV Renewables Private Limited	ROCKMAN Industries Ltd.	1,000.30	28-04-2021
Fourth Partner Energy Private Limited	AAI TIRUPATI	1,000.00	02-07-2019
VSV Renewables Private Limited	Raymond Luxury Cotton Limited	996.63	08-03-2021
VSV Renewables Private Limited	IARI Pusa	980.85	29-03-2019
FP Zeus Private Limited	Caparo Engineering India Ltd - Phase 2 (ED)	61.04	04-12-2023
FP Zeus Private Limited	Caparo Engineering India Ltd - Phase 2 (CVPIL)	210.00	04-12-2023
VSV Renewables Private Limited	Raymond Luxury Cotton Limited	996.63	08-03-2021
FPEL Rigel Energy Private Limited	V-Mart Retail Limited (Palwal)	699.78	09-01-2024

Purpose of the project activity:

The primary objective of the 35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL) is to generate electricity using solar energy, a clean and renewable resource. This project aims to reduce reliance on grid electricity, which is predominantly sourced from fossil fuels, thereby contributing to significant reductions in greenhouse gas (GHG) emissions.

The project encompasses the installation and operation of solar power plants across ten states in India: Haryana, Delhi, Maharashtra, Andhra Pradesh, Goa, Karnataka, Gujarat, Assam, Chhattisgarh, and Jharkhand. With a total installed capacity of 35.58 MW, these 88 solar energy projects collectively harness solar radiation to produce electricity using polycrystalline solar photovoltaic technology. The estimated annual electricity generation is approximately **19,057 MWh**, based on an average Plant Load Factor (PLF) of 16.82%

Solar PV technology generates electricity without emitting GHGs or other pollutants, thus offering an environmentally friendly alternative to conventional fossil fuel-based power plants. The project is expected to displace a significant amount of fossil fuel-generated electricity, resulting in an estimated annual reduction of **17,151 tCO₂eq** in GHG emissions.

Beyond its environmental impact, the project brings substantial economic and social benefits. It

generates employment opportunities during both the construction and operational phases, contributing to local economic development. By providing a reliable source of renewable energy, the project supports energy security and reduces electricity costs for commercial and industrial users.

The project also promotes technological advancements by employing advanced solar technologies, fostering innovation, and demonstrating the feasibility and benefits of large-scale solar installations. This encourages the broader adoption of solar power and contributes to technological progress in the renewable energy sector.

In alignment with Sustainable Development Goals (SDGs), the project significantly contributes to climate action (SDG 13) by reducing GHG emissions and promoting renewable energy. It supports affordable and clean energy (SDG 7) by increasing the share of renewable energy in the energy mix, aiding the transition to a sustainable energy future. Furthermore, it stimulates decent work and economic growth (SDG 8) by creating jobs and boosting local economies.

Overall, the 35.58 MW Bundled Solar Power Project by FPEPL is a significant initiative that addresses energy needs while contributing to environmental sustainability and socio-economic development. Through the generation of clean, renewable energy, the project plays a crucial role in India's transition towards a greener and more sustainable energy landscape.

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

The 35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL) has been thoroughly evaluated to ensure it poses no significant harm to the environment or society. Environmentally, the project is classified under the “White category” by the Central Pollution Control Board (CPCB), indicating negligible risk, and it does not produce emissions or pollutants during its operation. Socially, the project generates substantial employment opportunities during construction and operational phases, contributing to local economic development and poverty alleviation, while also improving air quality and health conditions by reducing fossil fuel dependency. Economically, it offers long-term electricity cost savings for commercial and industrial clients, enhancing financial sustainability and energy security. Technologically, the project employs advanced solar technologies and remote monitoring systems, promoting broader adoption of sustainable practices and encouraging further research and development in renewable energy. The project complies with all local and national regulations, maintaining transparency and accountability. Aligning with United Nations Sustainable Development Goals (SDGs) such as Climate Action (SDG 13), Affordable and Clean Energy (SDG 7), and Decent Work and Economic Growth (SDG 8), the project supports global efforts to combat climate change and promote sustainable development. Overall, the project provides extensive environmental, social, and economic benefits, ensuring a positive contribution to sustainability objectives.

Project’s Contribution to Sustainable Development

Social well-being:

1. **Employment Generation:** The project has created substantial employment opportunities both during the construction and operational phases. This has provided jobs to local communities, thereby improving their economic conditions and reducing poverty levels in the surrounding areas.
2. **Community Development:** By providing sustained employment, the project has positively impacted the socio-economic status of the local population. This ongoing support has facilitated community development, ensuring that the benefits of the project extend beyond immediate economic gains.

Economic well-being:

1. **Investment in Clean Technology:** The project represents a significant investment in renewable energy technology, which helps to mitigate CO₂ emissions. By generating carbon offset units (CoUs), it attracts clean energy investments into the host country, promoting economic growth.
2. **Energy Security:** By replacing grid-based electricity with solar power, the project ensures that surplus power is available for nearby areas, contributing to local economic growth and enhancing the quality of life.
3. **Cost Savings:** The project offers long-term cost savings on electricity for commercial and industrial clients, enhancing their financial sustainability and energy security.

Technological well-being:

1. **Promotion of Solar Energy:** The successful implementation of the project encourages other entrepreneurs to engage in similar ventures, driving research and development in solar technology.
2. **Innovation and Efficiency:** As interest in solar energy projects grows, technology providers are motivated to develop more efficient and advanced machinery, fostering technological innovation and progress in the renewable energy sector.

Environmental well-being:

1. **Reduction of Greenhouse Gas Emissions:** The project avoids greenhouse gas (GHG) emissions and specific pollutants such as SO_x, NO_x, and SPM associated with conventional thermal power plants, thus contributing to climate change mitigation efforts.
2. **Resource Conservation:** Solar power is a clean and renewable energy source that reduces reliance on fossil fuels and helps preserve natural resources that are at risk of depletion.
3. **Minimal Environmental Impact:** The project has minimal impact on land, water, air, and soil, ensuring a positive environmental footprint. It is classified under the “White category” by the Central Pollution Control Board (CPCB), indicating minimal negative environmental impacts.

Overall, the 35.58 MW Bundled Solar Power Project by FPEPL is a comprehensive initiative that not only addresses energy needs but also significantly contributes to environmental sustainability and socio-economic development. Through the generation of clean, renewable energy, the project plays a crucial role in India’s transition towards a greener and more sustainable energy landscape.

With regards to ESG credentials:

Currently, the project has not been formally assessed for its Environmental, Social, and Governance (ESG) credentials. However, the project inherently aligns with several ESG principles, as evidenced by the following examples:

Under Environment:

The project employs clean, renewable solar energy for electricity generation, significantly reducing greenhouse gas (GHG) emissions. By transitioning from fossil fuel-based grid electricity to solar power, the project decreases carbon dioxide emissions and conserves depleting energy resources. This shift also mitigates environmental risks associated with non-renewable energy sources, including pollution and escalating power costs. The environmentally friendly nature of solar photovoltaic (PV) technology, which generates electricity without emitting GHGs or other pollutants, positions the project as a strong contributor to environmental sustainability.

Under Social:

The project has implemented robust policies to ensure fair employment practices, stringent health and safety measures, and the creation of local jobs. These efforts have positively impacted the communities where the project operates. By generating employment opportunities during both the construction and operational phases, the project supports local economic development and enhances the quality of life for community members.

Under Governance:

In terms of governance, the project proponent (PP) adheres to sound principles emphasizing transparency, accountability, and compliance with local and national regulations. These practices are well-documented in the company's annual report. The project itself is a solar power initiative owned and managed by the proponent, who has obtained all necessary No Objection Certificates (NOCs) and approvals. The electricity generated by the project is accurately monitored, recorded, and verified within the existing management framework of the company. This rigorous approach ensures the integrity and reliability of the project's operations, reinforcing its strong ESG credentials.

By addressing these aspects, the 35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL) aligns with key ESG principles, demonstrating its commitment to environmental sustainability, social responsibility, and good governance practices.




United Nations Sustainable Development Goals:

The project produces electrical power by utilizing solar energy through photovoltaic cells, thereby effectively replacing non-renewable fossil fuels. This shift promotes sustainable economic and

environmental development. In the absence of this project, equivalent power generation would have depended on fossil fuel-based power stations.

As a result, the renewable energy generated by the project significantly reduces greenhouse gas emissions. The project positively contributes to the following Sustainable Development Goals:

- SDG 13: Climate Action
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth

Development Goals	Targeted SDG	Target Indicator (SDG Indicator)
 <p>SDG 13: Climate Action</p>	<p>13.2: Integrate climate change measures into national policies, strategies and planning</p> <p>Target: 17,151 tCO₂ per annum</p>	<p>13.2.1: Number of countries that have communicated establishment or operationalization of an integrated policy/strategy/ plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)</p>
 <p>SDG 7: Affordable and Clean Energy</p>	<p>7.2: By 2030, increase substantially the share of renewable energy in the global energy mix</p> <p>Target: 19,057 MWh renewable power supplied per annum</p>	<p>7.2.1: Renewable energy share in the total final energy consumption</p>
 <p>SDG 8: Decent Work and Economic Growth</p>	<p>8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p> <p>Target: Training, O&M staff</p>	<p>8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities</p>

A.3. Location of project activity >>

Country : India.
State : Andhra Pradesh

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Metro Cash & Carry, Vizag	521.26	17.8345246,83.3563335
VSV Renewables Private Limited	Metro Cash & Carry (Vijayawada)	450.72	16.511597,80.641029
VSV Renewables Private Limited	Metro Cash & Carry, Guntur	280.06	16.3044094,80.4602905
Daishi Patona Private Limited	D Mart Tirupati (Phase 4)	215.00	13.6483868,79.4464256
Daishi Patona Private Limited	D Mart Rajahmundry	192.60	17.0338116,81.787889
Daishi Patona Private Limited	D Mart Rajahmundry roof (Phase 3)	130.10	16.988003,81.798121
Daishi Patona Private Limited	D Mart Rajahmundry Carport (Separate PPA)	130.00	16.9881035,81.7986794
Daishi Patona Private Limited	D Mart Bhimavaram	124.80	16.548685,81.5228195
Daishi Patona Private Limited	D Mart Guntur Ring Road (Phase 5)	104.52	16.319278,80.414631
Daishi Patona Private Limited	D Mart Tuni (Phase 4)	103.40	17.3585431,82.5337339
Daishi Patona Private Limited	D Mart Vijayawada Airport Road (Phase5)	93.80	16.51,80.7
Daishi Patona Private Limited	D Mart Gudivada (Phase 5)	88.80	16.4280405,80.9824402
Daishi Patona Private Limited	D Mart Gajuwaka (Phase 5)	85.80	17.6847111,83.1877942
Daishi Patona Private Limited	D Mart Tanuku (Phase 5)	74.00	16.7519754,81.7023593
Daishi Patona Private Limited	D Mart Machilipatnam (Phase 7)	63.18	16.196297,81.138474
Daishi Patona Private Limited	D Mart Bhimavaram (Phase 7)	124.80	16.548685,81.5228195
Daishi Patona Private Limited	D Mart Ananthpur (Phase 5)	52.00	14.672882,77.580667
Daishi Patona Private Limited	D Mart Eluru (Phase 2)	50.10	16.716968,81.0975

Daishi Patona Private Limited	D Mart Karimnagar (Phase 2)	45.36	18.456029,79.1214
Daishi Patona Private Limited	D Mart Madinaguda (Phase 2)	32.50	17.5039995,78.3616409
Daishi Patona Private Limited	D Mart Kakinada (Phase 4)	30.50	16.9751534,82.2471269
Daishi Patona Private Limited	D Mart Marripalem (Phase 2)	23.40	17.7443,83.2584
FP Zeus Private Limited	Aparna Enterprises	2,688.36	17.055218,82.135401
FP Zeus Private Limited	Aparna Enterprises	985.60	17.055198,82.1331923
FP Zeus Private Limited	NCL Industries	1,592.10	16.659594,80.5464578
FP Zeus Private Limited	NCL Buildtek Ltd.	485.40	16.64558733,80.5727326
FPEPL Evergreen Energy Private Limited	Solara Pharma	452.92	11.685268,79.754334
VSV Renewables Private Limited	Rockman Industries	1,000.30	13.7685036,79.613719
Fourth Partner Energy Private Limited	Airport Authority of India (AAI)	1,000.00	13.6473222,79.5447135

Country : India.
State : Assam

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	FSC Koka	66.0	28.4304051,76.6426084

Country : India.
State : Chhattisgarh

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
Daishi Patona Private Limited	D Mart Durg	300	21.169264,81.278679
Daishi Patona Private Limited	D Mart Bhillai-1	360	21.21495,81.303619
Daishi Patona Private Limited	D Mart Rajnandgaon	300	21.093061,81.058304
Daishi Patona Private Limited	D Mart Charoda Bhillai1	137	21.215735,81.44754

Country : India.
State : Delhi

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Jawaharlal Nehru University (JNU)	500	28.5392395,77.1687231
VSV Renewables Private Limited	Army Public School	350	28.600826,77.16887
VSV Renewables Private Limited	Teri Gram	222	28.426050186157227,77.1475830078125
VSV Renewables Private Limited	IARI Pusa	981	28.635557,77.1584986

Country : India.
State : Goa

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
Daishi Patona Private Limited	FDC, Plant 3	464	15.37183,73.9449015
Daishi Patona Private Limited	FDC, Plant 1&2	266	15.3651087,73.9348855
FPEPL Evergreen Energy Private Limited	Sanofi India Ltd (Goa)	1,809	15.37,73.94

Country : India.
State : Gujarat

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
FPEPL Mega Solar Private Limited	D-Mart Palanpur	200	24.15097,72.4115
FPEPL Mega Solar Private Limited	D-Mart Billimora	200	20.76340837,73.00115764
FPEPL Mega Solar Private Limited	D-Mart Ankleshwar	200	21.63463,73.01444
VSV Renewables Private Limited	D-Mart Nava Naroda	188	23.0894,72.6857
FPEPL Mega Solar Private Limited	D-Mart Surendra Nagar	168	22.71956,71.66726

FPEPL Mega Solar Private Limited	D-Mart Yogi Chowk	117	21.20768565,72.88660897
VSV Renewables Private Limited	D-Mart Sanand	111	22.987,72.3962
VSV Renewables Private Limited	D-Mart Vapi	109	20.3529261,72.9294445
VSV Renewables Private Limited	D-Mart Jhangirapura	75	21.2298672,72.7780243
VSV Renewables Private Limited	D-Mart Kalol	55	23.2499528,72.4848635
VSV Renewables Private Limited	D-Mart Bhayli	55	22.283005,73.129613

Country : India.
State : Haryana

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Myntra Bhilaspur	750	28.272592,76.870947
Daishi Patona Private Limited	Lumax Industries Ltd (Dharuhera)	713	28.217944,76.786472
FP Zeus Private Limited	Koyo Bearings India	701	28.087352,76.592281
VSV Renewables Private Limited	Myntra Phase-II (Bhilaspur)	500	28.2724234,76.8711403
FPEPL Evergreen Energy Private Limited	Subros - 2	498	28.3775019,76.8947621
VSV Renewables Private Limited	Lenskart (Gurgaon)	455	28.410252,76.998054
FPEPL Evergreen Energy Private Limited	Star Wire limited	1,954	28.274977,77.4496858
FPEPL Evergreen Energy Private Limited	Star Wire limited	625	28.318304,77.303574
Sun Renewables RT Private Limited	Nitto Denko India Limited	400	28.37,76.93
VSV Renewables Private Limited	Ask Automotive (Unit 12), Manesar	323	28.366793,76.922379
FPEPL Evergreen Energy Private Limited	Bharat Seats Ltd	273	28.493189,77.077759
VSV Renewables Private Limited	A A Friction Materials Pvt Ltd.	228	28.3753083,76.8895346

Sun Renewables RT Private Limited	Daikin Airconditioning Pvt Ltd.	185	27.96,76.38
VSV Renewables Private Limited	Ask Fras-le Friction Pvt Ltd. (Unit 9), Manesar	148	28.379223,76.887695
Daishi Patona Private Limited	DMart Faridabad BPTP (Phase-7)	127	28.366352,77.343414
Daishi Patona Private Limited	DMart Palm heights (Phase5)	87	30.834361,75.894
VSV Renewables Private Limited	Ask Automotive (Unit 7), Manesar	59	28.370539,76.923676
FPEPL Evergreen Energy Private Limited	Star Wire India Limited	2,025	28.27349,77.451256
VSV Renewables Private Limited	Nuvoco	1,287	28.4547885,76.2726801

Country : India.
State : Himachal Pradesh

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
FPEPL Evergreen Energy Private Limited	Dr. Reddy's Laboratories, Baddi (FTO 12)	378	30.923778,76.849365
FPEPL Evergreen Energy Private Limited	Dr. Reddy's Laboratories, Baddi (FTO 8)	576	30.961138,76.771881

Country : India.
State : Jharkhand

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	BIT Mesra	700	23.4188374,85.4350132

Country : India.
State : Karnataka

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
Sun Renewables RT Private Limited	Information Technology Park Ltd (ITPL) (Ascendas Bangalore)	753	12.99,77.73

Sun Renewables RT Private Limited	NVVN- AIISH	472	12.31,76.62
VSV Renewables Private Limited	Solara Active Pharma, Mysore	169	12.15038013458252,76.6979 5227050781
Daishi Patona Private Limited	DMart Mangalore	122	12.861708,74.847118
VSV Renewables Private Limited	Solara Active Pharam	169	12.15038013458252,76.6979 5227050781
Daishi Patona Private Limited	DMart Nelmangala (PPA not signed)	111	13.111976,77.375465
Daishi Patona Private Limited	DMart Sarjapura (Phase4)	66	12.8613897,77.7783115
Daishi Patona Private Limited	DMart Yelahanka (Phase3)	52	13.0986042,77.5740516
FPE Andromeda	Metro Cash & Carry India Private Limited BESS	416	12.9930075,77.7006057
Sun Renewables RT Private Limited	NVVN - NIMHANS	1,144	12.94,77.59
Sun Renewables RT Private Limited	Information Technology Park Ltd., (ITPL)(Ascendas Bangalore)	753	12.99,77.73

Country : India.
State : Maharashtra

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Raymonds	997	16.611120223999023,74.34652709960938

A.4. Technologies/measures

The project utilizes advanced solar photovoltaic (PV) technology to generate electricity, which is a clean and renewable energy source. This method is environmentally friendly as it produces no greenhouse gases (GHGs) or other harmful emissions, unlike conventional fossil fuel-based power plants. The project involves the installation and operation of a 35.58 MW solar PV power generation facility spread across multiple locations.

Photovoltaic Modules:

- The core technology used in this project is the photovoltaic module, which comprises interconnected photovoltaic cells. These cells are sealed within an environmentally protective laminate, forming the essential components of the PV generating unit.

- When sunlight strikes these cells, they convert the solar energy directly into direct current (DC) electricity. This process is highly efficient and eco-friendly.

PV Arrays:

- Multiple PV panels mounted on a frame form a PV array. These arrays are strategically installed to maximize sunlight capture and electricity generation.

System Components:

Each power production unit within the project generally includes the following equipment:

- Solar Photovoltaic Modules: Capture solar energy and convert it into electricity.
- Inverters: Convert the DC electricity generated by the PV modules into alternating current (AC), which is compatible with the grid.
- Transformers: Adjust the voltage of the electricity for transmission and distribution.
- Circuit Breakers: Provide safety and protection for the electrical system.
- Mounting Structures: Support the PV modules and ensure they are correctly oriented towards the sun.
- Cables and Hardware: Facilitate the connection and transmission of electricity.
- Junction Boxes and Distribution Boxes: Manage and distribute the generated electricity.
- Earthing Kits: Provide grounding to protect against electrical faults.
- Control Room Equipment: Monitor and control the power generation process.
- Monitoring and Control Systems: Ensure the efficient operation of the PV arrays and the overall system.
- Evacuation Systems: Transport the generated electricity to the grid.

Technological Benefits:

The 35.58 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL) utilizes proven and reliable technology, ensuring safety and effectiveness in its application. This approach reduces operational risks and enhances the overall efficiency of the power generation process. The technology employed poses no environmental threat compared to fossil fuel-fired power plants. Solar photovoltaic (PV) systems do not emit pollutants or greenhouse gases (GHGs), significantly contributing to the reduction of environmental pollution and climate change mitigation. Additionally, the project does not involve the transfer of technology from any Annex 1 country and does not receive public funding from Official Development Assistance (ODA) or Annex I countries, ensuring its independence and sustainability.

In summary, the 35.58 MW Bundled Solar Power Project by FPEPL leverages advanced and environmentally safe solar photovoltaic technology to generate clean electricity. This project plays a crucial role in reducing GHG emissions, promoting renewable energy, and supporting sustainable development goals.

SPV	Total no. of solar PV panels	Rating of each solar PV panel (watt)	Make of solar PV panel	No. of Modules in a string	Total no. of strings	Inverter make	Main Meter number	Check Meter number
FPEPL Evergreen Energy Private Limited	1128	335	RenewSys	17/18/19/20	58	Sungrow	X1736939	NA
FPEPL Evergreen Energy Private Limited	1735	335	RenewSys	20	86	Sungrow	X1736945	X1736944
FPEPL Evergreen Energy Private Limited	1730	445	Renosola	20/19	88	Sungrow	X1750672	NA
Sun Renewables RT Private Limited	2317	325WP	TATA Power Solar	19/20/18/17	126	Delta/sungrow/kstar		NA
VSV Renewables Private Limited	2308	325	RenewSys	18/19/20	118	Sungrow	X1997545	8544825
Daishi Patona Private Limited	2162	330	RenewSys	18/19/20	110	Sungrow	X1163305 X1163301	NA
VSV Renewables Private Limited	2122	330	Renewsys	19	112	Sungrow	XG436189	X1433884
VSV Renewables Private Limited	2156	325	Adani	21 / 20	104	Fronius	X0627694, X0627697, X0627698, X0627693, X0627688, X1997554, X0627696	NA
FP Zeus Private Limited	2092	335	Renewsys	19/20	105	Sungrow	X1904302	NA
VSV Renewables Private Limited	1232	325	Renewsys	19	21	Delta	X2102758	NA
VSV Renewables Private Limited	1973	330	Vikram Solar	20/19	99	Sungrow		
Daishi Patona Private Limited	1853	325	Pholo solar	18	100	Sungrow	X1954352	NA
VSV Renewables Private Limited	1688	325	Renwesys	19/15	90	Schneider & Fronius	X0974170	
VSV Renewables Private Limited	49232	325	Renewsys	20	615	SunGrow	X0527701	X0527627
VSV Renewables Private Limited	1556	335	Renewsys	20 /19	78	Sungrow	X1997540	NA
VSV Renewables Private Limited	1544	325	Adani	16/19/20	83	Delta	X0731560 X0731558 X0452090 X1574760 X0731551 X0731565	29019923, 29019887, 29019888, 29019921, 29019922, 29019920

VSV Renewables Private Limited	1494	335	Renewsys	19/20	76	Sungrow	X1624881	8544825
FPEPL Evergreen Energy Private Limited	1508	330	RenewSys	18/19/20	77	Sungrow	X1736965	NA
Sun Renewables RT Private Limited	1475	320wp	Waree	19/20/18/15/14	72	Delta		
VSV Renewables Private Limited	1400	325	RenewSys	20	70	Schneider, Delta	17128943, 18111042	NA
VSV Renewables Private Limited	1252	360	Canadian solar	19/18	66	Sungrow	X0722955	NA
VSV Renewables Private Limited	1205	365	CANADIAN	19/18/17/16	59	Schneider		
VSV Renewables Private Limited	1255	330	Adani	20/19	63	Schneider	X1169769	
FPEPL Evergreen Energy Private Limited	4392	445	Renosola	17/18/19/20	252	Sungrow	X1669715 X1669716 X1669721 X1669720 X1669725 X1669709 X1669718 X1669722	NA
FPEPL Evergreen Energy Private Limited	1404	445	Renosola	18	78	Sungrow	X1424329	NA
Sun Renewables RT Private Limited	1195	335	Waree	19/20	61	Sungrow	X0823862	X0823877
Daishi Patona Private Limited	606	495	Trina solar	18 / 17	34	SunGrow	X1624888	NA
Daishi Patona Private Limited	1078	450, 495	Longi, Trina Solar	18 / 17	43	SunGrow	X1736950	NA
VSV Renewables Private Limited	1077	325	Waree	19/18/17	58	Delta	X0616861/X0639732/X0639734/X0616870/X0639735	NA
VSV Renewables Private Limited	980	330	Renewsys	20	49	Sungrow	X1390404	NA
VSV Renewables Private Limited	346	325	Waree	19	18	Delta	X1341954	X1341954
Daishi Patona Private Limited	887	335	RenewSys	20/19/18/17	48	SunGrow		
Daishi Patona Private Limited	666	450	Longi solar	19 / 18	36	SunGrow	X1624920	NA
VSV Renewables Private Limited	836	335	Renewsys	19	44	Sungrow	X1575712	NA
VSV Renewables Private Limited	840	325	Renewsys	20	42	Schneider	17160546	17160546

FPEPL Evergreen Energy Private Limited	816	335	Renewsys	17/18/19/20	43	Sungrow	X1592406, X1592404, X1592403	NA
VSV Renewables Private Limited	8550	325	Adani	19/20	442	Sungrow / Sofar/Schneider	540180084202 540180084201 540180084337 540180084338	19072212310 18052146064 18052146068 18052146069
VSV Renewables Private Limited	680	335	Renewsys	18/20	35	Sungrow	X1475906	NA
VSV Renewables Private Limited	600	370	Waree	14/15/16/17/18/19/20	34	Delta	X0938601	NA
FPEPL Cosmic Private Limited	658	330	Hanwha Q	18	36	SolarEdge	XE493982	na
Daishi Patona Private Limited	664	325	Rezosola	20/18	34	Schneider	D0100444	NA
Daishi Patona Private Limited	428	450	Longi Solar	17/19/18	24	Sungrow	X1813636	NA
Daishi Patona Private Limited	220	450	longi	19/18	12	Sungrow	X1624907	19415333
Daishi Patona Private Limited	140	315	Vikram	20	7	schneider & sofar	Y0325496	19415333
VSV Renewables Private Limited	512	330wp	Renewsys	19/20	26	Sungrow	X1111126 X1111131	NA
VSV Renewables Private Limited	443	330	Renewsys	18/19	24	Sungrow	X1252168	NA
Daishi Patona Private Limited	400	370	Renewsys	17/18	23	Sungrow	X1369475	X0922294
Daishi Patona Private Limited	303	350	Longi	20/19/17/18	16	Sungrow	X1613979	NA
Daishi Patona Private Limited	400	325	RenewSys	20	20	Schneider	X0527623	NA
Daishi Patona Private Limited	400	325	RenewSys	20	20	Schneider	X0527615	NA
Daishi Patona Private Limited	326	390	Rezosola	18/19	18	Sungrow	X1475901	540400027063,
4PE Distributed Solar Services Private Limited (ReNew Distributed Solar Services Private Limited)	397	315	Vikram Solar		25	Delta	Schneider Conzerv EM6436	Schneider Conzerv EM6436
Daishi Patona Private Limited	320	390	Renewsys	17/18	18	Sungrow	X1575713	NA

Daishi Patona Private Limited	320	380wp	Renewsys	18/ 17	18	Sungrow	X1575717	NA
Daishi Patona Private Limited	300	370wp	Renewsys	18 / 17	17	Sungrow	D0043139	NA
Daishi Patona Private Limited	312	335	Vikram	18 /20	17	Sungrow	X1224833	NA
Daishi Patona Private Limited	310	330	Renewsys	21 /20	15	Fronious	X0527631	NA
VSV Renewables Private Limited	308	325	Renewsys	20,19	16	Delta	17122068	NA
Daishi Patona Private Limited	300	325	Vikram Solar	20	15	Sungrow	19246108	X0889532
VSV Renewables Private Limited	64	380	Renewsys	16	4	Solis	X1316472	NA
VSV Renewables Private Limited	90	380	Renewsys	18	5	Solis	X1316476	NA
VSV Renewables Private Limited	95	380	Renewsys	19	5	Solis	X1970298	NA
Daishi Patona Private Limited	255	370	RenewSys	17	15	Sungrow	X1246877	19414948
Daishi Patona Private Limited	280	335	Vikram Solar	20	14	Sungrow	X1224831	NA
Daishi Patona Private Limited	240	370	Renewsys	17 /18	14	Sungrow	X1427300	NA
Daishi Patona Private Limited	231	375	Vikram Solar	19/20	12	Sungrow	X1163312	X0923718
Daishi Patona Private Limited	260	330	Renewsys	20	13	Sungrow	X0527697	NA
Daishi Patona Private Limited	200	370	Renewsys	18 /19	11	Sungrow	X1255956	NA
Daishi Patona Private Limited	200	330wp	Renewsys	20	10	Fronius	X0722890	NA
VSV Renewables Private Limited	200	330	Renewsys	20	10	Delta	X0682304	NA
Daishi Patona Private Limited	162	390	Renewsys	18	9	Sungrow	X0527686	NA
VSV Renewables Private Limited	185	325	Renewsys	18	10	Delta	X0547826	NA
VSV Renewables Private Limited	180	330	Renewsys	20	9	Sungrow	X1390402	NA
Daishi Patona Private Limited	160	325wp	Renewsys	20	8	Delta	X0722719	NA
Daishi Patona Private Limited	160	325	Renewsys	20	8	Sungrow	X0527682	NA
VSV Renewables Private Limited	156	325	Waaree	19	8	Delta	MSP53450	na

VSV Renewables Private Limited	156	325	Waaree	19	8	Delta	MSP53452	NA
Daishi Patona Private Limited	152	330	JA Solar	19	8	Delta	17128920	NA
VSV Renewables Private Limited	152	325	sri savitr solar	19	8	Delta	X0547821	NA
VSV Renewables Private Limited	152	325	sri savitr solar	19	8	Delta	X0767295	na
Daishi Patona Private Limited	147	315	Trina Solar	19 / 18 / 18	8	Fronious	X0452153	NA
VSV Renewables Private Limited	128	330	Vikram Solar	20/18/17	7	SunGrow		
VSV Renewables Private Limited	120	325	Emmvee Solar	20	6	Solis	Secure Elite 440	NA
Daishi Patona Private Limited	100	325	waree	20	5	Fronious	X1997581	NA
Daishi Patona Private Limited	100	305	Renesola	20	5	Schneider	18170244	NA
Daishi Patona Private Limited	73	320	Renewsys	18 / 19	4	Delta	X0452155	NA
FP Zeus Private Limited	4984	540	JA Solar	20 / 18	250	Sungrow	X1857887 X1857889 X1857934 X1857920 X1857933 X1857922	NA
FP Zeus Private Limited	3080	320	Renewsys	20	154	Ingeteam	X1861215 X1861225	X1861226, X1861218
FPEPL Power Private Limited	4566	545 Watt	JA	20/18	237	SunGrow	X1926281 X2102788 X1926286 X1926282 X1796136	0
FPEPL Evergreen Energy Private Limited	5400	335	Renewsys	20	270	SunGrow	X1954346 X1967393 X1954348	
FP Zeus Private Limited	3538	450	Renesola	26 / 23	140	SunGrow	X2046050	NA
FPEPL Evergreen Energy Private Limited	4500	450	Renesola	19,20	226	Sungrow	X2002065, X2002066, X2002059, X 2002061	NA
FPEPL Evergreen Energy Private Limited	847	545	Vikram Solar	20	42	Schneider	22080797	na
FP Zeus Private Limited	1449	335	Renewsys	20 / 18 / 19	73	Sungrow	X1834129	NA
FPE Andromeda	1242	335wp	Renewsys	20/ 19	63	Sungrow	X1967402	NA
FP Zeus Private Limited	344	540	RenewSys	18	6	Delta	81630325	na

FP Zeus Private Limited	380	335	RenewSys		18	Sungrow	X1438779	X1438780
VSV Renewables Private Limited	3900	330	Vikram Solar	30	130	Sungrow	HRT88448	540180132195
VSV Renewables Private Limited	3857	325	Sri savitr	17/18/19/20		Sungrow	ORL00321,302,305,324,304,325,301,322,323,303	X1336759, X1834132,35, X1336765,60,57, X1997528, X1336762.
FPEPL Evergreen Energy Private Limited	782	540	Renewsys	18/19/20	41	Sungrow	X1997589	NA
FPEPL Evergreen Energy Private Limited	3772	335	Renewsys	20	746	Sungrow	X1693667	
VSV Renewables Private Limited	3680	335	Renewsys	20	184	Sungrow	ORL00586	X1970308
VSV Renewables Private Limited	3635	330	Renewsys	19 / 20	185	Schneider	X0974168 X0974169 X0974171	
VSV Renewables Private Limited	2986	335	Renewsys	17 / 18 / 19 / 20	158	Sungrow	X1575725 X1698036 X2357284 X1698032	NA
Fourth Partner Energy Private Limited	3080	325	Adani	20	154	Schneider Sungrow	X0842101	NA
VSV Renewables Private Limited	3020	325	Waaree	18/19/20	160	Delta	X0808410, X1169758, X0808411, X1970270, X1698020, X0808401	NA
FP Zeus Private Limited	499	545	Renewsys	18/19/20	26	Sungrow	X2002069 X2002063	NA
FPEPL Evergreen Energy Private Limited	2505	545	Renewsys	106/07/14	20/19/18	Sungrow	X1926269 X1926277	X1926269 X1926277
FPEPL Evergreen Energy Private Limited	2142	545	Renewsys	19	18	Sungrow	X2093863	23077201
FPEPL Rigel Energy Private Limited	1284	545	Renosola	19/20	65	Sungrow	X1592432	NA
Daishi Patona Private Limited	360	315450	Vikram Solar, longi solar	20/19/18	19	schneider & sungrow & sofar	X1624907 Y0325496	19415333
Daishi Patona Private Limited	176	390	Renewsys	18/17	10	Sungrow	X1624883	19492022
Daishi Patona Private Limited	180	540	Renewsys	18	10	Sungrow	X1970307	X0889058
Daishi Patona Private Limited	254	330	Renewsys	19/20	13	Sungrow	X1736957	NA

Daishi Patona Private Limited	176	390	Renewsys	18/17	10	Sungrow	X1624883	19492022
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A.5. Parties and project participants >>

Party (Host)	Participants
India	<p>Project Proponent / Owner: Fourth Partner Energy Private Limited, (FPEPL).</p> <p>Address: Fourth Partner House, H No 4-9-10, HMT Nagar, Hyderabad-500076. Telangana State.</p> <p>Contact Person: Akhil Katara</p> <p>Email id: carboncredits@fourthpartner.co</p> <p>UCR ID: 130501765</p>

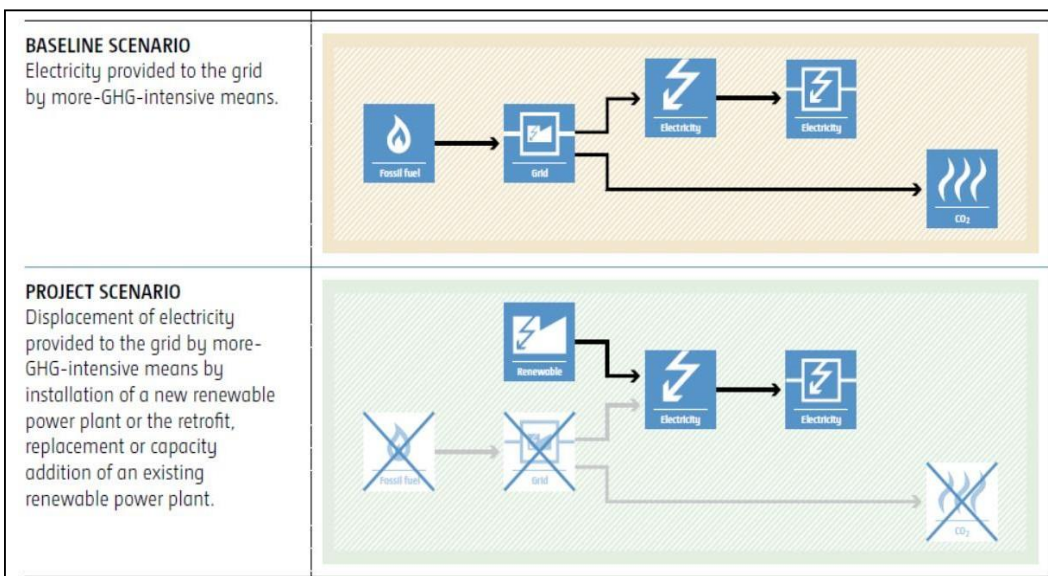
A.6. Baseline Emissions>>

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

In the absence of the project, the equivalent amount of electricity would have been generated by the existing grid-connected power plants and newly added power plants, which are predominantly fossil fuel-based. This grid predominantly relies on fossil fuel-based power plants, making it highly carbon-intensive. Therefore, the baseline scenario for the project is aligned with the grid-based electricity system, representing the situation before the project was implemented.

Schematic diagram showing the baseline scenario:

Baseline Scenario:



A.7. Debundling>>

This project activity is not a debundled component of a larger carbon or GHG registered 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 - ACM0002, “(Title: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources, Ver 22.0)

The project activity entails generating electricity from renewable solar energy, with an installed capacity of 35.58 MW, qualifying it as a large-scale project. The project follows the methodology ACM0002, version 22.0, and the applicability of this methodology is detailed below:

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

This project activity is included within the UCR Standard Positive List of technologies and is within the large-scale CDM thresholds (e.g. installed capacity is 35.58 MW). The positive list comprises of the project being a greenfield plant /unit.
Project activity involves installation of a 35.58 MW renewable electricity generation plant (solar farm) connected to the regional power grid.
The project activity involves installation of Solar PV (SPV). Hence, the activity is not a hydro power project or combined heat and power (co-generation) systems.
Project is not an activity that involves switching from fossil fuels to renewable energy at the site of the project activity.
The project activity is a new installation, it does not involve any retrofit measures nor any replacement.
Landfill gas, waste gas, wastewater treatment and agro-industries projects are not relevant to the project activity. No biomass is involved, the project is only a solar power project.
The technology/measure allowed under the grid connected Solar PV based generation systems displace equivalent quantity of electricity from the regional grid in India. The

<p>testing/certifications; all the equipment of the solar project activity will be complying with applicable national/ international standards. The above details may be verified from one or more of the following documents:</p> <ul style="list-style-type: none"> • Technology Specification provided by the technology supplier. • Purchase order copies • EPC contracts • Power purchase agreement • Project commissioning certificates, etc
<p>The project activity is a voluntary coordinated action.</p> <p>As per the Ministry of Environment and Forest (MoEF), Govt. of India Office Memorandum dated 13/05/2011, it had received specific clarification regarding the applicability of EIA Notification, 2006 in respect of Solar Photo Voltaic (PV) Power plants. It was further clarified in the above memorandum that both Solar PV power projects are not covered under the ambit of EIA notification, 2006 and no environment clearance is required for such projects under provisions thereof.</p>
<p>This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s). Hence this methodology is applicable and fulfilled for the solar project activity.</p>
<p>The project activity involves installation of new power plants at listed sites where there was no renewable energy power plant operating prior to implementation of project.</p>
<p>Project and leakage emissions from biomass are not applicable.</p>

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:

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

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

The project boundary for the 35.58 MW Bundled Solar Power Project encompasses the physical and operational limits within which the solar power generation occurs, specifically including the solar photovoltaic (PV) power plants and the electrical grid to which these plants are connected. According to the applicable methodology ACM0002, version 22.0, the spatial extent of the

project boundary includes both the entire facility where the solar PV modules are installed and operated, and the Indian Grid System, encompassing all power plants physically connected to the electricity system to which the project power plant is connected. This ensures that all emissions from electricity generation within this grid are considered in the project's baseline and monitoring activities.

In the baseline scenario, the source is grid-connected electricity generation, and the greenhouse gases (GHGs) included are CO₂ (carbon dioxide), as it is the primary GHG emitted from fossil fuel-based power plants that dominate the Indian grid. CH₄ (methane) and N₂O (nitrous oxide) are excluded for simplification and conservativeness, ensuring that baseline emissions are not overstated. For the project activity, the source is the greenfield solar power project, and GHGs included are CO₂, which is excluded as solar PV technology does not emit CO₂ during electricity generation. Similarly, CH₄ and N₂O are excluded for the same reasons as in the baseline scenario.

The project involves utilizing solar radiation as the energy source, converted into electricity through photovoltaic cells. The generated direct current (DC) is converted into alternating current (AC) via inverters before being fed into the regional grid. There are no sources of GHG emissions within the project boundary, as solar power generation does not involve combustion processes or the release of gases.

The project boundary, as defined, ensures a comprehensive inclusion of all relevant sources and sinks associated with the project activity. By focusing on CO₂ emissions in the baseline and excluding it in the project scenario, the methodology ensures a conservative and robust estimation of emission reductions. This approach underscores the project's contribution to reducing greenhouse gas emissions by replacing carbon-intensive grid electricity with clean solar power. This structured and detailed approach highlights the environmental integrity of the 35.58 MW Bundled Solar Power Project, ensuring its alignment with sustainable development goals and global efforts to combat climate change.

	Source	GHG	Included?	Justification/Explanation
Baseline	Grid connected electricity.	CO ₂	Included	Major source of emission
		CH ₄	Excluded	Excluded for simplification. This is conservative.
		N ₂ O	Excluded	Excluded for simplification. This is conservative.
Project Activity	Greenfield Solar Power Project	CO ₂	Excluded	Excluded for simplification. This is conservative.
		CH ₄	Excluded	Excluded for simplification. This is conservative.
		N ₂ O	Excluded	Excluded for simplification. This is conservative.

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

As per the approved consolidated methodology ACM0002. version – 22.0, the baseline scenario is the following:

“The baseline scenario is that in the absence of the project, the equivalent amount of electricity would have been generated by the existing grid-connected power plants and newly added power plants, which are predominantly fossil fuel-based”.

Project Activity and Baseline: The project involves establishing a new solar power plant to harness green energy from solar sources. The electricity generated will serve as a captive supply for a specific purpose. In the absence of this project, an equivalent amount of power would have been sourced from the Indian grid, which primarily relies on fossil fuel-fired plants. Therefore, the baseline for the project activity is the same amount of power produced by the Indian grid.

Grid Emission Factor: The term “grid emission factor” refers to the CO₂ emission factor (measured in tCO₂/MWh) associated with each unit of electricity provided by an electricity system. For Indian projects not previously verified under any GHG program, the UCR recommends using a conservative estimate of 0.9 tCO₂/MWh for the years 2013-2023. Additionally, for 2021-2024, the combined margin emission factor calculated from the CEA database in India indicates higher emissions than the default value. Consequently, the same emission factor has been applied to calculate emission reductions using a conservative approach. Net GHG Emission Reductions and Removals

Thus, $ER_y = BE_y - PE_y - LE_y$

Where:

ER_y = Emission reductions in year y (tCO₂/y)

BE_y = Baseline Emissions in year y (tCO₂/y)

PE_y = Project emissions in year y (tCO₂/y)

LE_y = 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:

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

BE_y = Baseline emissions in year y (tCO₂)

$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed to the PPA as a result of the implementation of the UCR project activity in year y (MWh)

$EF_{grid,y}$ = UCR recommended emission factor of 0.9 tCO₂/MWh has been considered.

Estimated annual baseline emission reductions (BE_y)

= 19,057 MWh/year * 0.9 tCO₂/MWh

= 17,151 tCO₂/year

Project Emissions (PE_y)

As per ACM0002. version – 22.0, only emissions associated with fossil fuel combustion, emissions from the operation of geothermal power plants due to the release of non-condensable gases, and emissions from a water reservoir of Hydro should be accounted for the project emission. Since the project activity is a solar electric power project, its emission from renewable energy plants is nil. Thus, PE = 0

Leakage Emission

As per ACM0002. version - 22.0, '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 = 0

Estimated Emission reductions in year y (ER_y)

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, $ER_y = 17,151 - 0 - 0$
 $= 17,151 \text{ tCO}_2/\text{year}$ (i.e., 17,151 CoUs/year)

B.6. Prior History>>

The project activity is a 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 as a whole has not been applied for any other environmental crediting or certification mechanism. Hence project will not cause double accounting of carbon offset units or credits (i.e., CoUs).

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

There are no changes to the start date of the 1st crediting period.

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

This is PCN version 1.0 and hence there are no changes applicable.

Applied Methodology

ACM0002, “(Title: Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources, Ver 22.0)

This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to user(s).

B.9. Monitoring period number and duration>>

First Issuance Period : 01/06/2018 to 30/06/2024 (inclusive of both dates).
First Monitoring Period : 01/06/2018 to 30/06/2024
First Crediting Period : 06 years, 00 months

B.10. Monitoring plan>>

Key Data Monitored: Quantity of net electricity generated per year.

1. Monitoring Plan Objective and Organization

The project proponent (PP) oversees and monitors the electricity generated by the project, with all relevant data electronically archived since June 1st, 2018. To ensure reliability and transparency, PP has established Quality Assurance and Quality Control (QA&QC) measures that effectively manage data reading, recording, auditing, and archiving. Data is monitored daily and submitted to PP. Additionally, PP has implemented QA&QC measures to ensure the accuracy of metering devices and maintain operational safety. These devices are regularly calibrated and inspected according to state electricity board specifications, ensuring accurate readings.

Data/Parameter	EG _{PJ, facility, y}
Data unit	MWh
Description	Net electricity supplied to the Indian grid facility by the project activity.
Source of data Value(s) applied	Joint meter reading report/Energy generation report.
Measurement methods and procedures	Daily: Direct measurement using electricity meters
Monitoring frequency	Continuously, aggregated at least annually Calibration Frequency: The calibration will be done

	following the relevant applicable National Guidelines updated from time to time during the operation of the project activity.
QA/QC procedures:	<p>Monitoring frequency: Continuous Measurement frequency: Hourly Recording frequency: Monthly</p> <p>The electricity meter will be subject to regular maintenance and testing in accordance with the stipulation of the meter supplier or national requirements. The calibration of meters, including the frequency of calibration, should be done in accordance with national standards or requirements set by the meter supplier. The accuracy class of the meters should be in accordance with the stipulation of the meter supplier or national requirements. If these standards are not available, and meter supplier does not specify, calibrate the meters every 3 years and use the meters with at least 0.5 accuracy class (e.g. a meter with 0.2 accuracy class is more accurate and thus it is accepted).</p> <p>In case of missing data due to meter failure or other reasons for a certain period of time, the following options to estimate electricity consumption may be applied: (a) A conservative value based on rated capacity and full operational hours (8760 hours).</p>
Purpose of data	Calculation of baseline emissions

Data / Parameter:	EF, CO ₂ , GRID, y
Data unit:	tCO ₂ /MWh
Description:	<p>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 as a fairly conservative estimate for Indian projects not previously verified under any GHG program.</p> <p>Hence, the same emission factor has been considered to calculate the emission reduction under conservative approach.</p>
Source of data:	UCR Standard Protocol As per Standard

Measurement procedures (if any):	Fixed
Monitoring frequency:	Ex-ante fixed parameter
Purpose of data:	For the calculation of Emission Factor of the grid
Any comment:	-