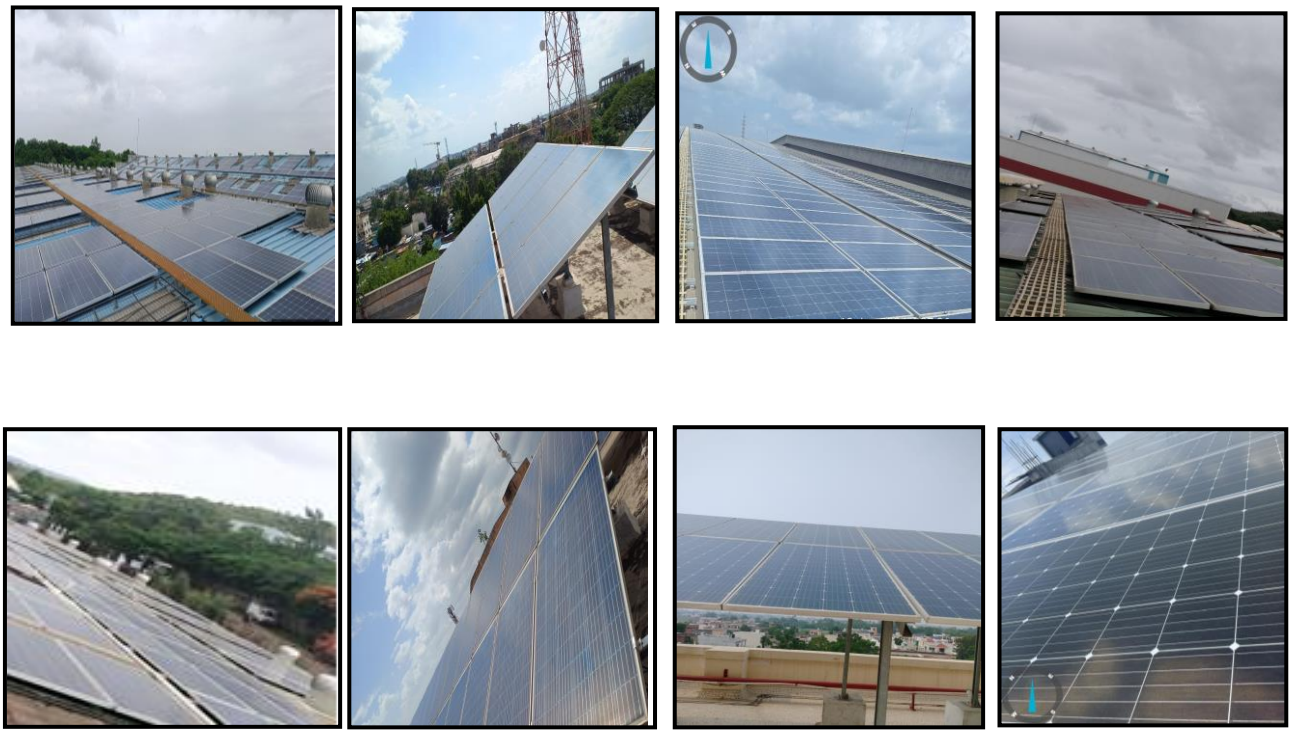
PROJECT CONCEPT NOTE

CARBON OFFSET UNIT (CoU) PROJECT



Title: 36.67 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL).

Version 1.0

Date: 12/09/2024

First CoU Issuance Period: 5years, 10 months, 00 days

Date: 01/08/2018 to 30/06/2024

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

BASIC INFORMATION	
Title of the project activity	36.67 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL).
Scale of the project activity	Large Scale
Completion date of the PCN	02/09/2024
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 amount of total GHG emission reductions	**21,057** CoUs/year (**21,057** tCO_{2eq}/year)

SECTION A. Description of project activity

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

The 36.67 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited (FPEPL) is a collection of 103 ground-mounted & rooftop solar energy projects spread across eight locations in India, including Maharashtra, Madhya-Pradesh, Tamil Nadu, Punjab, Odisha, Telangana, West Bengal and Gujarat.

Fourth Partner Energy Private Limited (FPEPL) is India's integrated renewable energy solutions provider dedicated to the Commercial & Industrial sectors. FPEPL's mission is to drive decarbonization within the corporate world, with efforts extending beyond India to South and Southeast Asia. Through Renewable Energy-as-a-Service (REaaS) model, FPEPL helps businesses meet nearly 100% of their energy needs with clean, renewable energy sources.

With nearly 70% of electricity in India being consumed by the transport and industrial sectors, Fourth Partner Energy advocates for Corporate India to take the lead in transitioning to cleaner energy sources. To support this transition, FPEPL offers a wide range of services to commercial and industrial clients, including solar, wind, hybrid systems, battery storage, EV charging, and carbon credit solutions.

While there are many renewable energy developers in India, FPEPL uniquely provides an extensive array of customized clean energy solutions under a single platform for corporate clients. Since FPEPL establishment in 2010 as a solar products and EPC company, they have rapidly become a leading provider of renewable energy solutions. This success is due to their in-house expertise in energy analysis, design, financing, procurement, construction, operation, and maintenance of renewable infrastructure services. FPEPL uses technology and innovation to help companies begin or accelerate their sustainability journeys.

The project is registered with the Universal Carbon Registry (UCR), which provides carbon incentives for solar initiatives, encouraging the use of renewable energy technologies. This initiative supports India's ambitious goals of achieving 450 GW of renewable energy and 500 GW of non-fossil fuel capacity by 2030. FPEPL has strategically created 10 Special Purpose Vehicles (SPVs) to oversee and operate 103 ground-mounted & rooftop solar energy projects across multiple locations, ensuring efficient operations and centralized control. The company now aims to capitalize on this portfolio by claiming carbon credits through UCR, highlighting its dedication to sustainable energy and contributing to national and global climate change efforts, while promoting economic and technological progress.

SPV Name	Project Name	Capacity (KWp)	COD
FPEL Evergreen Energy Private Limited	Anheuser Busch Inbev India Ltd (Foster)	770.29	04-02-2022
Daishi Patona Private Limited	D Mart (Dombivali)	767.60	22-04-2022
VSV Renewables Private Limited	Bridgestone India Pvt Ltd, PH-II	727.68	22-01-2020
VSV Renewables Private Limited	Raychem RPG Pvt Ltd (Chakan)	700.26	22-01-2021
VSV Renewables Private Limited	CWPRS	400.40	02-07-2019
VSV Renewables Private Limited	Mahindra & Mahindra Ltd (Igatpuri)	651.09	23-06-2020
Daishi Patona Private Limited	Lumax Industries Ltd (Chakan, Pune)	602.23	08-11-2019
VSV Renewables Private Limited	AIIMS (Bhopal)	600.65	16-08-2021
VSV Renewables Private Limited	Nahars Engineering Pvt Ltd	548.46	28-04-2019
VSV Renewables Private Limited	Bridgestone India Pvt Ltd	4,000.00	14-11-2019
VSV Renewables Private Limited	MSS India Pvt Ltd (Nashik)	439.82	07-10-2021
Fourth Partner Energy Private Limited	CHRI (Gwalior)	422.50	25-08-2019
VSV Renewables Private Limited	Raychem RPG Pvt Ltd (Vasai)	414.40	21-01-2021
VSV Renewables Private Limited	Metro Cash & Carry	414.15	19-10-2019
VSV Renewables Private Limited	RPK India Pvt Ltd	413.00	07-06-2019
FPEL Trinity Energy Private Limited	Mahindra Holidays & Resorts Pvt Ltd (Club Mahindra)	403.50	13-03-2018
Daishi Patona Private Limited	D Mart (Wardha)	399.96	19-01-2022
Daishi Patona Private Limited	D Mart (Adgaon)	378.00	02-03-2022
VSV Renewables Private Limited	Nagpur Metro (All)	312.68	17-10-2018
Daishi Patona Private	Rallis India Ltd		27-04-2021

Limited		307.20	
Daishi Patona Private Limited	D Mart (Yavatmal)	290.10	15-03-2021
VSV Renewables Private Limited	Nagpur Metro (All)	273.00	17-10-2018
Daishi Patona Private Limited	D Mart (Wai)	272.88	19-01-2021
VSV Renewables Private Limited	Garg Acrylics Limited	2,778.00	24-05-2019
VSV Renewables Private Limited	MANIT	250.25	01-11-2018
VSV Renewables Private Limited	Big Basket Bhiwandi	230.34	12-10-2020
VSV Renewables Private Limited	Metro Cash & Carry (Indore)	221.10	27-09-2021
FPEL Cosmic Private Limited	Roop Polymers	217.10	09-02-2020
Daishi Patona Private Limited	D Mart (Jalgaon)	197.34	28-01-2020
Daishi Patona Private Limited	D Mart (Mandsaur)	194.40	14-10-2021
Daishi Patona Private Limited	D Mart (Zirakpur Phase-II)	99.00	05-02-2022
Daishi Patona Private Limited	D Mart (Zirakpur DC)	44.40	01-04-2022
Daishi Patona Private Limited	D Mart (Satara)	181.35	04-02-2019
Daishi Patona Private Limited	D Mart (Jalna)	177.45	25-02-2019
Daishi Patona Private Limited	D Mart (Osmanabad)	177.25	20-09-2019
Daishi Patona Private Limited	D Mart (Latur)	165.00	13-08-2020
VSV Renewables Private Limited	NISM (Khalapur)	152.10	01-11-2018
Daishi Patona Private Limited	D Mart (Karjat)	148.20	11-02-2019
Daishi Patona Private Limited	D Mart (Barnala)	148.00	08-09-2020
Daishi Patona Private Limited	D Mart (Mhow)	146.88	24-01-2022
Daishi Patona Private Limited	D Mart (Hinjewadi)	135.11	22-03-2019

4PE Distributed Solar Services Private Limited	Birlasoft Limited	125.06	25-12-2016
Daishi Patona Private Limited	D Mart (Nipaniya)	118.80	03-08-2020
Daishi Patona Private Limited	D Mart (Airoli)	114.84	07-09-2020
Daishi Patona Private Limited	D Mart (Kolar Road)	110.50	07-10-2018
Daishi Patona Private Limited	D Mart (Kavesar)	109.56	03-01-2020
Daishi Patona Private Limited	D Mart (Nanded)	108.80	17-03-2019
Daishi Patona Private Limited	D Mart (Nagpur)	103.35	20-02-2019
Daishi Patona Private Limited	D Mart (Miraj)	103.35	06-02-2019
VSV Renewables Private Limited	IHM BHUBANESWAR	100.10	04-03-2019
Daishi Patona Private Limited	D Mart (Peermuchalla)	97.50	30-11-2019
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	24.32	04-08-2020
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	34.20	04-08-2020
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	36.10	04-08-2020
Daishi Patona Private Limited	D Mart (Patiala)	94.00	18-03-2021
Daishi Patona Private Limited	D Mart (Dewas)	94.38	04-12-2019
Daishi Patona Private Limited	D Mart (Panvel)	88.44	17-09-2020
Daishi Patona Private Limited	D Mart (MR-5 Indore)	79.20	20-08-2019
Daishi Patona Private Limited	D Mart (Ambegaon)	79.20	09-12-2019
Daishi Patona Private Limited	D Mart (Ratnagiri)	76.05	17-09-2019
Daishi Patona Private Limited	D Mart (Pune-Satara Road)	73.92	19-12-2019
Daishi Patona Private Limited	D Mart (Nigdi)	73.92	16-12-2019
Daishi Patona Private	D Mart (Belapur)		30-12-2019

Limited		68.64	
Daishi Patona Private Limited	D Mart (Mandigovindgarh I&II)	156.39	19-10-2021
Daishi Patona Private Limited	D Mart (Virar-1 (West))	67.93	25-09-2019
Daishi Patona Private Limited	D Mart (Aurangabad)	67.92	21-10-2019
VSV Renewables Private Limited	PMC (Main Building)	60.13	04-02-2019
Daishi Patona Private Limited	D Mart (Hadapsar)	59.67	06-02-2021
Daishi Patona Private Limited	D Mart (Ichalkaranji)	52.14	28-12-2019
Daishi Patona Private Limited	D Mart (Vasai)	52.00	16-10-2019
VSV Renewables Private Limited	BSNL Baramati	50.70	04-08-2018
VSV Renewables Private Limited	BSNL Bhosari	50.70	04-08-2018
VSV Renewables Private Limited	PMC (Mahatma Phule)	49.40	04-01-2020
VSV Renewables Private Limited	PMC (Savarkar Bhawan)	49.40	21-11-2019
Daishi Patona Private Limited	D Mart (Sangli)	49.40	29-03-2019
Daishi Patona Private Limited	D Mart (Karad)	48.18	31-12-2019
Daishi Patona Private Limited	D Mart (Badlapur-II,West)	45.00	20-02-2020
Daishi Patona Private Limited	D Mart (Seawoods)	43.56	11-03-2020
VSV Renewables Private Limited	Mahindra & Mahindra Ltd (Nashik)	42.24	01-12-2020
Daishi Patona Private Limited	D Mart (Jaysingpur)	40.96	19-09-2019
Daishi Patona Private Limited	D Mart (Ambernath)	40.96	01-10-2019
Daishi Patona Private Limited	D Mart (Virar-2 (East))	40.95	03-10-2019
VSV Renewables Private Limited	PMC (Anna Bhau Sathe)	39.00	23-01-2020
Daishi Patona Private Limited	D Mart (Amravati)	34.32	06-02-2020

Daishi Patona Private Limited	D Mart (Ratlam)	22.10	01-08-2018
Daishi Patona Private Limited	D Mart (Ujjain)	19.50	05-12-2018
FPEL Power Private Limited	Kriti Industries Ltd	2,488.47	30-03-2023
FPEL Evergreen Energy Private Limited	Garret Motions	461.62	05-10-2022
FP Zeus Private Limited	K K Nag (Urse)	185.70	18-11-2022
FP Zeus Private Limited	K K Nag (Ranjangaon)	127.30	18-11-2022
Daishi Patona Private Limited	D Mart (Ramol)	199.80	24-03-2023
Sun Renewables RT Private Limited	TRIL - IT 4 Goregaon	200.34	21-11-2022
FPEL Evergreen Energy Private Limited	Khadim India Ltd-WB	849.96	14-12-2022
VSV Renewables Private Limited	AIIMS (Bhubaneshwar)	1,253.53	16-03-2021
FPEL Evergreen Energy Private Limited	Elringklinger Automotive Components (India) Pvt. Ltd.	1,250.22	01-03-2022
VSV Renewables Private Limited	Shyam Metalics & Energy Ltd-Sambalpur, Orissa	1,232.80	04-07-2022
VSV Renewables Private Limited	Luminaz Safety Glass Pvt Ltd	1,199.55	22-04-2019
VSV Renewables Private Limited	Bridgestone	1,001.33	14-03-2019
Daishi Patona Private Limited	D Mart (Moshi)	231.09	16-01-2021
FPEL Evergreen Energy Private Limited	Parker Hannifin India Pvt Ltd-Nagpur	1,365.22	06-10-2023
FPEL Evergreen Energy Private Limited	Parker Hannifin India Pvt Ltd., Mumbai	1,167.39	05-07-2023
Daishi Patona Private Limited	D Mart (Car Port - Zirakpur)	97.20	09-02-2023
Daishi Patona Private Limited	D Mart (Zirakpur DC)	85.09	01-04-2022
	Total	**36,666.47 KWp**	

Purpose of the project activity:

The objective of the proposed project is to generate electricity using a clean and renewable source of energy i.e., solar radiation. The project activity displaces grid electricity consumption (e.g. grid import) at the user end. The project activity of 36.67 MW total capacity involves the installation and operation of a solar power plant in the 08 different states in Maharashtra, Madhya Pradesh, Tamil Nadu, Punjab, Odisha, Telangana, West Bengal and Gujarat in India.

Based on the ex-ante estimate, this project is estimated to produce approximately **23,397.58 MWh** of average renewable electricity annually, assuming PLF (Plant Load Factor) of 16.84%. The project utilizes Polycrystalline solar photovoltaic technology to generate environmentally friendly energy.

Solar photovoltaic (PV) power generation is inherently environmentally friendly because it avoids the combustion of fossil fuels and the release of greenhouse gases (GHGs).

Photovoltaic Cells: These cells, usually made of silicon, directly convert sunlight into electricity. When sunlight hits the cells, it excites electrons, generating a flow of direct current (DC) electricity.

Solar Panels or Modules: These interconnected cells form solar panels or modules. These panels are commonly seen on rooftops or in solar farms. They capture sunlight and produce electricity.

Working Principle: Sunlight energizes the electrons within the photovoltaic cells, creating an electric current. This DC electricity can be used directly for various applications.

Power Delivery: To provide solar-generated electricity to PPA recipients, the energy must first be converted to alternating current (AC). This conversion, performed by inverters, ensures efficient and reliable power delivery directly to the off takers, bypassing the grid.

When multiple PV panels are mounted on a frame, they form what is known as a PV Array. By displacing fossil fuel-based electricity generation in the regional grid, this project contributes to reducing GHG emissions. Solar PV offers clean, renewable energy, low operating costs, and job creation. It's a crucial part of our transition to a sustainable energy future.

The anticipated annual average and total yearly reduction in CO_2 emissions resulting from the project activity are estimated to be **21,057 tCO_{2eq}/yr**. The actual emission reduction achieved during the initial CoU (crediting period) will be submitted as part of the first monitoring and verification process. As the project generates electricity using solar energy, a clean and renewable source, it has no adverse impact on the environment and actively contributes to climate change mitigation efforts.

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

The 36.67 MW project meets regulatory standards and aligns with sustainable development goals. Classified as a "White category" project by the Central Pollution Control Board (CPCB), it indicates minimal environmental impact. This classification exempts the project from traditional Environmental and Social Impact Assessments (ESIA) and eliminates the need for a 'Consent to Operate' from the Pollution Control Board.

Environmentally, the solar power project produces no emissions or pollutants during its operation, ensuring no significant harm to the environment. Socially, it creates employment opportunities for local communities during both the construction and maintenance phases, thereby supporting local economies. By promoting clean energy, the project also enhances air quality and health conditions in the region, reducing reliance on fossil fuels.

Economically, the project provides long-term electricity cost savings for commercial and industrial clients, enhancing financial sustainability and energy security. Technologically, it uses advanced solar technologies and remote monitoring systems to optimize performance and efficiency, fostering the adoption of sustainable practices. In terms of sustainable development, the project significantly lowers carbon emissions, aligning with global climate goals and supporting India's renewable energy targets. Overall, the "Do No Harm" or Impact Test for FPEPL's Bundled Solar Power Project confirms that it causes no significant environmental or social harm while delivering extensive benefits aligned with sustainable development objectives.

Project's Contribution to Sustainable Development

This project is a greenfield initiative, with PPA's power serving as the baseline scenario. Historically, India's electricity grid has been largely dependent on fossil fuel-based power plants. Although the share of renewable energy is gradually increasing, the grid's emission factor remains high, establishing it as a distinct baseline.

The Government of India has defined specific indicators for sustainable development in its interim approval guidelines for projects aimed at reducing greenhouse gas (GHG) emissions. These indicators cover economic, social, environmental, and technological aspects. This project is expected to actively contribute to sustainable development in the following ways:

Social well-being:
During the construction phase, the project created substantial employment opportunities for the local workforce, benefiting both the project's development and the surrounding community. Importantly, the project has continued to provide sustained employment for local residents even after its implementation. This ongoing support helps alleviate poverty in the area, ensuring economic benefits throughout the project's lifespan.

Economic well-being:
The project is a strategic investment in clean technology, effectively reducing CO2 emissions from the grid. As a result, it qualifies for carbon credits in the form of Certified Emission Reduction Units (CERs), attracting clean energy investments to the host country. The project requires both temporary and permanent skilled and semi-skilled labor, creating additional employment opportunities in the region. By replacing grid-based electricity, the project frees up surplus power for nearby areas, contributing to local economic growth and improving the overall quality of life. Furthermore, the success of such projects can stimulate new industrial ventures and economic activities in the region. As global efforts focus on limiting warming to a 1.5-degree Celsius increase by 2030, these initiatives also offer carbon incentives for capacity upgrades or expansions. Additionally, the project can lead to higher land values for local communities, promoting comprehensive economic development.

Technological well-being:
The successful operation of this project promotes solar-based power generation and encourages other entrepreneurs to invest in similar ventures. As interest in solar energy grows, it will drive research and development efforts among technology providers, leading to more efficient and advanced machinery in the future. By demonstrating the success of solar projects in the region, this initiative encourages more investors to participate in solar power projects, contributing to technological advancement.

Environmental well-being:
The project aims to generate electricity using a zero-emission solar power facility. By harnessing solar energy, it avoids the greenhouse gas (GHG) emissions and specific pollutants like SOx, NOx, and SPM that are associated with conventional thermal power plants. Solar power, as a clean and renewable energy source, contributes to resource conservation by reducing reliance on fossil fuels and helping to preserve natural resources that are at risk of depletion. The project has minimal impact on land, water, air, and soil, ensuring a positive environmental footprint.

Using solar photovoltaic (PV) technology, the project displaces an equivalent amount of power from the regional grid, directly reducing GHG emissions associated with electricity generation in India's regional grids. As the world pushes to prevent climate disaster by accelerating the adoption of clean technologies by 2030, carbon incentive programs like the UCR CoU program play a vital role.

With regards to ESG credentials:
Currently, the project has not undergone a formal assessment of its Environmental, Social, and Governance (ESG) credentials. However, the project inherently aligns with several ESG principles through its various practices. Here are a few examples:

Environmental Criteria:
Environmental criteria involve multiple aspects of a company's practices, including energy use, waste management, pollution control, conservation of natural resources, and animal treatment. For the project proponent (PP) project, the shift towards renewable energy sources supports the

reduction of greenhouse gas (GHG) emissions and the conservation of depleting energy resources associated with the project's baseline. Environmental criteria can also be evaluated based on potential risks the company may face and how these are managed. Since the project relies on solar power generation, it mitigates environmental concerns related to non-renewable energy sources and the risk of rising power costs. Thus, the project makes a significant contribution to its ESG credentials.

Social Criteria:
Social criteria encompass various aspects of a company's impact and interactions with society, including business relationships, employment quality, and working conditions that prioritize employee health and safety. These criteria also consider the interests of other stakeholders. In this project, the project proponent has implemented strong policies to ensure fair employment practices, strict health and safety measures, and the creation of local jobs. Additionally, the organization's corporate social responsibility (CSR) initiatives directly benefit local stakeholders, enhancing social sustainability. These positive social contributions significantly bolster the project's ESG credentials.

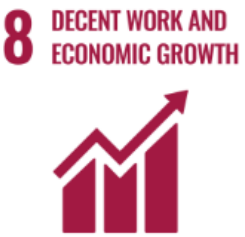
Governance Criteria:
Governance criteria relate to an organization's operational practices and accounting procedures. For this project, the project proponent adheres to robust governance principles, focusing on transparency, accountability, and compliance with local and national regulations. These practices are thoroughly documented in the company's annual report. The project itself, a solar power initiative owned and managed by the proponent, has secured all required No Objection Certificates (NOCs) and approvals. The electricity generated by the project is monitored, recorded, and verified accurately within the company's existing management framework. As a result, both the project and the proponent exhibit strong ESG credentials.

United Nations Sustainable Development Goals:

This project generates electricity by harnessing solar energy with photovoltaic cells, replacing the need for non-renewable fossil fuels. This change supports sustainable economic growth and environmental sustainability. Without this project, the equivalent electricity would have been produced by power plants that primarily rely on fossil fuels.

As a result, the project's renewable energy production leads to a decrease in greenhouse gas emissions. It contributes positively 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)
 SDG 13: Climate Action	13.2: Integrate climate change measures into national policies, strategies and planning Target: **21,057** tCO_2 per annum	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)
 SDG 7: Affordable and Clean Energy	7.2: By 2030, increase substantially the share of renewable energy in the global energy mix Target: **23,397.58** MWh renewable power supplied per annum	7.2.1: Renewable energy share in the total final energy consumption
 SDG 8: Decent Work and Economic Growth	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 Target: Training, O&M staff	8.5.1: Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

A.3. Location of project activity >>

Country : India.
State : Madhya Pradesh

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Bridgestone India Pvt Ltd, PH- II	727.68	22.6240729,75.6251395
VSV Renewables Private Limited	AIIMS (Bhopal)	600.65	23.21,77.46

Fourth Partner Energy Private Limited	CHRI (Gwalior)	422.50	26.1812352,78.1626969
VSV Renewables Private Limited	MANIT	250.25	23.212101,77.406235
VSV Renewables Private Limited	Metro Cash & Carry (Indore)	221.10	22.7717308,75.9053082
Daishi Patona Private Limited	D Mart (Mandsaur)	194.40	24.085458,75.045691
Daishi Patona Private Limited	D Mart (Mhow)	146.88	22.6011964,75.7919375
Daishi Patona Private Limited	D Mart (Nipaniya)	118.80	22.766811,75.926256
Daishi Patona Private Limited	D Mart (Kolar Road)	110.50	23.160929,77.413717
Daishi Patona Private Limited	D Mart (Dewas)	94.38	22.968,76.0757
Daishi Patona Private Limited	D Mart (MR-5 Indore)	79.20	22.7298243,75.8362493
Daishi Patona Private Limited	D Mart (Ratlam)	22.10	23.343775,75.055445
Daishi Patona Private Limited	D Mart (Ujjain)	19.50	23.137203,75.791816
FPEL Power Private Limited	Kriti Industries Ltd	2,488.47	22.630191,75.672389
VSV Renewables Private Limited	Bridgestone	1,001.33	22.6243495,75.6226051

Country : India.
State : West Bengal

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
FPEL Evergreen Energy Private Limited	Khadims India Ltd	849.0	22.864883,88.428721

Country : India.
State : Maharashtra

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
FPEL Evergreen Energy Private Limited	Anheuser Busch Inbev India Ltd (Foster)	770.29	19.8326706,75.2044208

Daishi Patona Private Limited	D Mart (Dombivali)	767.60	19.1906,73.0915
VSV Renewables Private Limited	Raychem RPG Pvt Ltd (Chakan)	700.26	18.753977,73.791604
VSV Renewables Private Limited	CWPRS	400.40	18.4460996,73.7837121
VSV Renewables Private Limited	Mahindra & Mahindra Ltd (Igatpuri)	651.09	19.6943398,73.5460288
Daishi Patona Private Limited	Lumax Industries Ltd (Chakan, Pune)	602.23	18.7538647,73.8016531
VSV Renewables Private Limited	Nahars Engineering Pvt Ltd	548.46	19.8535517,75.221375
VSV Renewables Private Limited	Bridgestone India Pvt Ltd	4,000.00	18.7681886,73.7707855
VSV Renewables Private Limited	MSS India Pvt Ltd (Nashik)	439.82	19.95,73.73
VSV Renewables Private Limited	Raychem RPG Pvt Ltd (Vasai)	414.40	19.415254,72.8732683
VSV Renewables Private Limited	Metro Cash & Carry	414.15	19.982698440551758, 73.80924224853516
VSV Renewables Private Limited	RPK India Pvt Ltd	413.00	18.150865,73.947275
Daishi Patona Private Limited	D Mart (Wardha)	399.96	20.717858,78.606928
Daishi Patona Private Limited	D Mart (Adgaon)	378.00	20.028622,73.853988
VSV Renewables Private Limited	Nagpur Metro (All)	312.68	21.0566405,79.054442
Daishi Patona Private Limited	Rallis India Ltd	307.20	20.6921071,77.063817
Daishi Patona Private Limited	D Mart (Yavatmal)	290.10	20.362693,78.103926
VSV Renewables Private Limited	Nagpur Metro (All)	273.00	21.129693,79.068715
Daishi Patona Private Limited	D Mart (Wai)	272.88	17.955792,73.956132
VSV Renewables Private Limited	Big Basket Bhiwandi	230.34	19.2759108,73.0922246
FPEL Cosmic Private Limited	ROOP POLYMERS	217.10	18.77,73.83
Daishi Patona Private Limited	D Mart (Jalgaon)	197.34	20.9907435,75.5649506
Daishi Patona Private Limited	D Mart (Satara)	181.35	17.740273,74.00911
Daishi Patona Private Limited	D Mart (Jalna)	177.45	19.8446,75.9295
Daishi Patona Private Limited	D Mart (Osmanabad)	177.25	18.214981,76.043631
Daishi Patona Private Limited	D Mart (Latur)	165.00	18.4180931,76.5820764
VSV Renewables Private Limited	NISM (Khalapur)	152.10	18.904012,73.187871
Daishi Patona Private Limited	D Mart (Karjat)	148.20	18.931049,73.321542
Daishi Patona Private Limited	D Mart (Hinjewadi)	135.11	18.5914,73.7444
4PE Distributed Solar Services Private Limited	BIRLASOFT LIMITED	125.06	18.5933,73.73427

Daishi Patona Private Limited	D Mart (Airoli)	114.84	19.1432163,72.9911726
Daishi Patona Private Limited	D Mart (Kavesar)	109.56	19.2601012,72.9687203
Daishi Patona Private Limited	D Mart (Nanded)	108.80	19.1934635,77.2848506
Daishi Patona Private Limited	D Mart (Nagpur)	103.35	21.0844767,78.9704456
Daishi Patona Private Limited	D Mart (Miraj)	103.35	16.85678,74.661781
Daishi Patona Private Limited	D Mart (Panvel)	88.44	19.0046271,73.1143167
Daishi Patona Private Limited	D Mart (Ambegaon)	79.20	18.452066,73.843898
Daishi Patona Private Limited	D Mart (Ratnagiri)	76.05	16.9967741,73.3460655
Daishi Patona Private Limited	D Mart (Pune-Satara Road)	73.92	18.479334,73.85677
Daishi Patona Private Limited	D Mart (Nigdi)	73.92	18.6467329,73.7567339
Daishi Patona Private Limited	D Mart (Belapur)	68.64	19.011215,73.0322951
Daishi Patona Private Limited	D Mart (Virar-1 (West))	67.93	19.4594092,72.8014807
Daishi Patona Private Limited	D Mart (Aurangabad)	67.92	19.9087208,75.3467642
VSV Renewables Private Limited	PMC (Main Building)	60.13	18.5238531,73.8530262
Daishi Patona Private Limited	D Mart (Hadapsar)	59.67	18.4985617,73.9348882
Daishi Patona Private Limited	D Mart (Ichalkaranji)	52.14	16.6798503,74.4608584
Daishi Patona Private Limited	D Mart (Vasai)	52.00	19.3644528,72.8148159
VSV Renewables Private Limited	BSNL Baramati	50.70	18.1523,74.5819
VSV Renewables Private Limited	BSNL Bhosari	50.70	18.621705,73.830676
VSV Renewables Private Limited	PMC (Mahatma Phule)	49.40	18.495042,73.899306
VSV Renewables Private Limited	PMC (Savarkar Bhawan)	49.40	18.522007,73.8497
Daishi Patona Private Limited	D Mart (Sangli)	49.40	16.8454445,74.5770209
Daishi Patona Private Limited	D Mart (Karad)	48.18	17.253479,74.176107
Daishi Patona Private Limited	D Mart (Badlapur-II,West)	45.00	19.1586429,73.2479395
Daishi Patona Private Limited	D Mart (Seawoods)	43.56	19.0184261,73.0153021
VSV Renewables Private Limited	Mahindra & Mahindra Ltd (Nashik)	42.24	20.001691818237305, 73.72705841064453
Daishi Patona Private Limited	D Mart (Jaysingpur)	40.96	16.7822469,74.5616289
Daishi Patona Private Limited	D Mart (Ambernath)	40.96	19.1831928,73.1653814
Daishi Patona Private Limited	D Mart (Virar-2 (East))	40.95	19.4452575,72.8153048
VSV Renewables Private Limited	PMC (Anna Bhau Sathe)	39.00	18.4769929,73.8581692
Daishi Patona Private Limited	D Mart (Amravati)	34.32	20.9380779,77.7776041
FPEL Evergreen Energy Private Limited	Garret Motions	461.62	18.590534,73.697705

FP Zeus Private Limited	K K NAG (Urse)	185.70	18.712075534763354, 73.64634636930944
FP Zeus Private Limited	K K NAG (RANJANGAON)	127.30	18.792496581,74.294819846
Sun Renewables RT Private Limited	TRIL - IT 4 Goregaon	200.34	19.1765028,72.8832232
FPEL Evergreen Energy Private Limited	ElringKlinger Automotive Components (India) Pvt. Ltd.	1,250.22	18.804,74.294
VSV Renewables Private Limited	Luminaz Safety Glass Pvt Ltd	1,199.55	19.79580958091477, 75.22330284118652
Daishi Patona Private Limited	D Mart (Moshi)	231.09	18.68077,73.83662
FPEL Evergreen Energy Private Limited	Parker Hannifin India Pvt Ltd-Nagpur	1,365.22	21.13648,78.77741
FPEL Evergreen Energy Private Limited	Parker Hannifin India Pvt Ltd., Mumbai	1,167.39	19.102466,73

Country : India.
State : Odisha

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	IHM BHUBANESWAR	100.10	20.305112,85.848464
VSV Renewables Private Limited	AIIMS (Bhubaneshwar)	1,253.53	20.1315,85.463
VSV Renewables Private Limited	Shyam Metalics & Energy Ltd-Sambalpur, Orissa	1,232.80	21.6737233,84.0441033

Country : India.
State : Tamil Nadu

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
FPEL Trinity Energy Private Limited	Club Mahindra	403.5	11.806281,79.798923

Country : India.
State : Punjab

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Garg Acrylics Limited	2,778.00	30.051106,75.036229
Daishi Patona Private Limited	D Mart (Zirakpur Phase-II)	99.00	30.620394,76.821823
Daishi Patona Private Limited	D Mart (Zirakpur DC)	44.40	30.620403, 76.821861
Daishi Patona Private Limited	D Mart (Barnala)	148.00	30.341887,75.524216
Daishi Patona Private Limited	D Mart (Peermuchalla)	97.50	30.6601031,76.8581055
Daishi Patona Private Limited	D Mart (Patiala)	94.00	30.383127,76.400803
Daishi Patona Private Limited	D Mart (Mandigovindgarh I&II)	156.39	30.655806,76.303124
Daishi Patona Private Limited	D Mart (Car Port - Zirakpur)	97.20	30.620078, 76.82177
Daishi Patona Private Limited	D Mart (Zirakpur DC)	85.09	30.437293, 76.671844

Country : India.
State : Telangana

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	24.32	17.358636,78.385286
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	34.20	17.4070678,78.5933855
VSV Renewables Private Limited	Vishal Mega Mart (Boduppal)	36.10	18.8714,79.4443

Country : India.
State : Gujarat

SPV	PPA Name	Capacity (kWp DC)	Location (Co-ordinates)
Daishi Patona Private Limited	D Mart (Ramol)	199.80	22.59053,72.39556

A.4. Technologies/measures

The project harnesses clean, renewable solar energy for electricity generation, using technology renowned for its environmental benefits. Unlike traditional power plants, solar photovoltaic (PV) systems produce no greenhouse gases (GHGs) or other harmful emissions. The project features a 36.67 MW solar PV power generation system.

Photovoltaic modules, composed of interconnected photovoltaic cells sealed in protective laminate, are the core components of the PV system. When multiple PV panels are assembled on a frame, they create a PV Array. The project utilizes reliable and well-established technology to ensure environmentally safe practices and contribute to greenhouse gas reduction.

Each power production unit generally includes:

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

The technology employed in this project presents no environmental risks compared to fossil fuel-based power plants. It is a proven, reliable technology, ensuring safety and effectiveness. Notably, the project does not involve technology transfer from Annex I countries or receive public funding from Official Development Assistance (ODA) or Annex I countries.

Technological Benefits:
The 36.67 MW Bundled Solar Power Project by Fourth Partner Energy Private Limited, (FPEPL) employs proven and reliable technology, ensuring both safety and effectiveness. This approach minimizes operational risks and boosts the efficiency of the power generation process. Unlike fossil fuel-based power plants, the solar photovoltaic (PV) systems used in this project produce no pollutants or greenhouse gases (GHGs), making a significant contribution to reducing environmental pollution and mitigating climate change. Additionally, the project does not involve technology transfer from Annex I countries or receive public funding from Official Development Assistance (ODA) or Annex I countries, maintaining its independence and sustainability. In summary, FPEPL's 36.67 MW Bundled Solar Power Project utilizes advanced and environmentally

friendly solar PV technology to produce clean electricity, playing a key role in reducing GHG emissions, promoting renewable energy, and supporting sustainable development goals.

PPA Name	Make of solar PV panel	Inverter make	Inverter model n	Inverter DC capacity (kWp)
AB Inbev Maharashtra	Renesola	SunGrow	SG110CX SG50CX SG110CX SG110CX SG110CX SG110CX	146.46kWp, 69.44kWp, 140.64kWp, 142.4kWp, 133.5kWp ,138kWp
Dmart Dombivli	Jinko Solar	SunGrow	SG100CX SG50CX SG33CX SG100CX SG50CX SG100CX SG100CX	145.8kWp ,68.67kWp,46.32kWp, 147.15kWp,68.13kWp, 145.8kWp,145.98kWp
Bridgestone, Pithampur Phase-II	PhonoSolar	Schneider	PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL25E PVSCL60E PVSCL60E PVSCL60E PVSCL60E	132kWp, 37.62kWp ,132kWp, 136.62kWp,125.4kWp, 136.62kWp,
Raychem RPG Pvt. Ltd, Chakan	Renewsys	SunGrow	SG110CX SG33KTL-M	147.4 124.66 147.4 147.4 134
CWPRS-1	Renewsys	Delta	Delta RPI 50	74.085 41.59 74.085 74.04 78 39 43.19 78 74.04 26
Mahindra (Igatpuri)	Vikram Sola	SunGrow	SG110CX, SG20KTL, SG110CX, SG110CX, SG110CX, SG110CX	125.4, 125.4, 125.4, 125.4, 20.0

Lumax Industries Ltd	Pholo solar	SunGrow	SG33KTL-M SG60KTL	81.51 81.51 81.51 81.51 81.51 29.7 29.7
AIIMS, Bhopal	RenewSys	SunGrow	SG50CX SG110CX SG110CX SG110CX SG50CX SG110CX	99 105.6 99 92.4 99 92.4 92.4 105.6 105.6 99 92.4 105.6 100.32 99 105.6 99 92.4 99 99 92.4 92.4 99 92.4 99 99 105.6 105.6 99 105.6 80 105.6 99
Nahars Engineering Pvt Ltd	Renwesys	Schneider Fronius	CL-60E, Cl-60E, CL60-E, CL60-E, CL60-E, CL60E, Fronius Eco 27, Fronius Eco 27	81.51, 81.51, 81.51, 81.51, 81.51, 29.7, 29.7
Bridgestone Chakan	Renewsys	SunGrow	SG80KTL-M	127.3 118.13 127.3 127.
MSS India	CANADIAN	Schneider	Cl36-E, CL36-E, CL60-E, CL60-E, CL60-E, Cl36-E, CL36-E, CL60-E	36.8, 37.23, 55.84, 77.76, 46.44, 45.36, 59.
CHRI (Gwalior)	waaree	SunGrow	SG50CX SG50CX PVSCL60E PVSCL60E PVSCL60E PVSCL60E SG50CX SG33CX	66 81.51 79.2 79.2 79.2 33
Raychem RPG Pvt. Ltd, Vasai	Vikram Solar	SunGrow	SG110CX SG50KTL-M-20 SG110CX SG110CX	136.5 130 136.5
Metro Cash & Carry	Adani	Schneider	CL25E, CL60E	31.35, 79.2, 79.2, 66, 79.2, 79.2

RPK India	RenewSys	SunGrow	SG50KTL-M-20 SG60KTL SG60KTL SG60KTL SG60KTL SG33KTL-M	149.98 149.98
DMart Wardha1	Renewsys		Solis-25K SG50CX SG110CX SG110CX	49.4 27.63 49.4 29.25 49.4 26 49.4 49.4 22.1
Dmart Adgaon Nashik	Jinko	SunGrow	SG110CX SG20KTL-M SG110CX SG50CX	131.7 40.89 134
Nagpur Metro (New Airport)	Waree	Delta	Delta RPI 31.2 kW	71.5 65 71.5 65
Rallis India Ltd., Akola	RenewSys	SunGrow	SG110GX, KTLM	134, 131.7, 40.89
DMart Yavatmal (Phase5)	RenewSys	SunGrow	SG110CX SG33KTL-M SG110CX	67.92 65 67.92 25 25
Metro Bhawan Nagpur	Renewsys	Schneider	PVSCL60E	21.09 29.6 29.6 56.61 33.3 39.96 16.28
DMart Wai	RenewSys	SunGrow	SG60KTL SG50KTL-M-20 SG20KTL-M SG110CX	55 55 55
Garg Acrylics	Adani	Sungrow/ Sofar/ Schneider	SG 60 KTL/80 KTL/CL-60	141.3 58.5
MANIT	Renewsys	Schneider	PVSCL60E PVSCL60E PVSCL60E PVSCL25E PVSCL25E	136.79 63
Bigbasket Mumbai	RenewSys	SunGrow	SG110CX SG110CX	22.44 69.96 104.94
Metro Cash & Carry, Indore	Sri savitr solar	Delta	Delta RPI 50.299999	66.5 59.8 64.4

			Delta RPI 21.299999 Delta RPI 50.299999 Delta RPI 50.299999 Delta RPI 21.299999 Delta RPI 21.299999	
Roop Polymers	Hanwha Q	SolarEdge	SE55K	99
DMart Jalgoan (Optimiser)	Renewsys	SolarEdge	SE17K SE55K SE82.8K	143.55 24.75
DMart Mandsaur	Longi	SunGrow	SG110CX SG20KTL-M SG20KTL-M	19.8 26.4 26.4 25.08 33 38.28
DMart Zirakpur PH 2	longi	Sungrow	SG100CX	20/20
DMart Zirakpur	Vikram	schneider sofar	PVSCL25E, 30000TL-G2	100
DMart Satara (Phase3)	RenewSys	Schneider	PVSCL25E PVSCL60E PVSCL25E PVSCL60E	146.88
DMart Jalna (Phase3)	Renewsys	Schneider	PVSCL25E PVSCL60E PVSCL60E	136.6
DMart Osmanabad (Phase4)	RenewSys	Delta	Delta RPI 50.299999 Delta RPI 50.299999 Delta RPI 50.299999	25 74 24 30.88 30.88
DMart Latur	RenewSys	SunGrow	SG60KTL SG20KTL-M SG60KTL	19.8 26.4 26.4 25.08 33

NISM (Khalapur)	Renewsys	Delta	Delta RPI 50.299999 Delta RPI 50.299999 Delta RPI 50.299999	118.8
DMart Karjat (Phase3)	RenewSys	Schneider	PVSCL60E PVSCL60E	21.12 71.28 21.12
DMart Barnala (Phase5)	Renewsys	Sungrow	SG110CX/ SG20KTL	110kwp/20kwp
Dmart Mhow	Renewsys	SunGrow	SG110CX	58.5 52
DMart Hinjewadi (Phase3)	RenewSys	Solis	Solis-25K PVSCL60E PVSCL25E PVSCL25E PVSCL25E	100
KPIT	Vikram Sola	Delta	delta RPI 50 & RPI 30	50.7 49.4
DMart (Nipanya)	Renewsys	SunGrow	SG110CX	36.1
DMart Airoli (Optimiser)	Renewsys	SolarEdge	SE17K SE55K SE17K	93.8
DMart Kollar Road (Phase2)	RenewSys	Delta	Delta RPI 50.299999 Delta RPI 50.299999	67.5 19.14
DMart Kavesar (Optimiser)	Renewsys	SolarEdge	SE17K SE27.6K SE27.6K SE17K	78
DMart Nanded (Phase3)	Renewsys	Schneider	PVSCL25E PVSCL60E PVSCL20E	76.05
DMart Hinga/Nagpur (Phase3)	RenewSys	Schneider	PVSCL25E PVSCL25E PVSCL60E	73.92

DMart Miraj (Phase3)	RenewSys	Schneider	PVSCL25E PVSCL25E PVSCL60E	73.26
IHM BHUBANESWAR	Renewsys	Delta	RPI 50 KW	49.40,50.70
DMart Peermuchalla (Phase4)	Vikram Sola	Sungrow	SG60KTL/ SG20KTL	60kwp/20kwp
Vishal Megamart	Renewsys	Solis	Solis 20k	20Kw- 1 No
Vishal Megamart	Renewsys	Solis	Solis 30K	30Kw- 1 No's
Vishal Megamart	Renewsys	Solis	Solis 30K	30Kw- 1 No's
DMart Patiala (Phase5)	RenewSys	Sungrow	SG110CX	110 kwp
DMart Dewas	Renewsys	SunGrow	SG50KTL-M-20 SG33KTL-M	50
DMart Panvel (Optimiser)	Renewsys	SolarEdge	SE17K SE55K	27.3 27.3
DMart MR-5 Indore (Phase4)	Renesys	SolarEdge	SE55K SE17K	52
DMart Ambegaon (Optimiser)	Renesys	SolarEdge	SE55K SE17K	52.8
DMart Ratnagiri (Phase4)	Renewsys	Schneider	PVSCL60E	50.68
DMart Pune Satara (Optimiser)	Renewsys	SolarEdge	SE55K	49.395
DMart Nigdi (Optimiser)	Renewsys	SolarEdge	SE55K	49.4
DMart Belapur (Optimiser)	Renewsys	SolarEdge	SE55K	49.4
DMart MandiGobindghar (Phase-7)	Renewsys	SolarEdge	SE55K	18.48 29.7

DMart Virar-1 West (Phase4)	Waree	Delta	Delta RPI 50.299999 Delta RPI 21.299999 kW	28.35 17.96
DMart Aurangabad (Phase4)	Renewsys	SunGrow	SG60KTL	44.4
PMC (Main Building)	Renewsys	Delta	Sofar 50000TL & Delta RPI 31	40.95
DMart Hadapsar (Optimiser)	RenewSys	SolarEdge	SE17K SE17K SE17K	19.5 19.5
DMart Ichalkaranji (Optimiser)	Renewsys	SolarEdge	SE27.6K SE17K	8.96
DMart Vasai (Phase4)	Renewsys	Delta	Delta RPI 50.2999	134 140.7 134 127.3 140.7 147.4 140.7 67 147.4 67 147.4
BSNL Baramati	Waaree	Delta	delta RPI 50	147.4 40.2 147.4 147.4
BSNL Bhosari	Waaree	Delta	delta RPI 50	58.86 121.5
PMC Mahatma Phule Auditorium (SECI-GOV)	sri savitr sola	Delta	Sungrow SG50CX	38.88 127.3 134
PMC Savarkar Bhavan (SECI-GOV)	sri savitr sola	Delta	delta RPI 50	54 145.8
DMart Sangli (Phase4)	sri savitr sola	Delta	Delta RPI 50.299999 kW	129.6 61.5 140.4 129.6 129.6 129.6
DMart Karad (Optimiser)	Renewsys	SolarEdge	SE17K SE27.6K	257.4 257.4 257.4 257.4
DMart Badlapur-II, West (Phase5)	Renewsys	SunGrow	SG50KTL-M-20	40.2 48.24 26.8 12.73 101.85 67 18.09 59.96 20.1 40.2
DMart Seawoods (Optimiser)	Renewsys	SolarEdge	SE17K SE17K	140.7 140.7 67 140.7 127.3 127.3 127.3 147.4
Mahindra (Nashik)	Vikram Solar	SunGrow	SG20KTL-M	19.8, 26.4
DMart Jaysingpur (Phase4)	RenewSys	SunGrow	SG33KTL-M	79.2 79.2 79.2 79.2 79.2 79.2 79.2 81.51 79.2 79.2 79.2 81.51 81.51
DMart Ambernath (Phase4)	RenewSys	SunGrow	SG33KTL-M	80.27 80.27 80.27 84.5 84.5 84.5 84.5 84.5 84.

				84.5
DMart Virar-2 East (Phase4)	Renewsys	SunGrow	SG33KTL-M	113.99 120.6 120.6 127.3 129.38 127.3 134
PMC Lokshahir AnnullBhau Sathe Sanskrutik Bhavan (SECI-GOV)	Emmvee Solar	Solis	Delta RPI 20	126 119.7 113.4 126 107.1 119.7 113.4
DMart Amravati (Optimiser)	Renewsys	SolarEdge	SE25K	48.08 30.85 30.85 49.395 48.08 49.395 52 48.085 49.395 48.08 49.36 52 32.5 49.395 49 49.395 49.395 49.36 49.36 49.395
DMart Ratlam (Phase2)			Delta RPI 21.299999	137.34 137.34 147.15 127.53 147.15 127.53 137.34 13.34
DMart Ujjain (Phase2)	Sri Savitr	Delta	Delta RPI 21.299999 kW	134.61 141.7 141.7 140.06
Kriti Industries	JA	SunGrow	SG110CX SG110CX SG110CX SG50CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG110CX SG50CX	141.7 120.99, 147.15, 68.67, 142.79, 139.52, 141.7, 141.7, 141.7, 147.15, 120.99, 130.8, 141.7, 127.53, 141.7, 147.15, 127.53, 150.42, 65.
Garett Motions	Vikram Solar	Schneider	SG100CX	63.36, 72.96, 57.6, 57.6, 21.76, 24.32, 25.6, 25.6, 25.6, 27.2,

				28.8, 19.2, 23.04, 28.8,
K.K.Nag Urse	RenewSys	Delta	Delta RPI 21.299999 Delta RPI 31.299999 Delta RPI 21.299999 Delta RPI 80.3 Delta RPI 80.3 Delta RPI 80.3 SG110CX & SG50CX	24.7, 35.1, 19.5, 84.5, 78, 84.5,
K.K.Nag Ranjhangaon	RenewSys	SunGrow	SG100CX	127.3
Avenue Supermarts Ltd (Ramol)	LONGI	SunGrow	SG110CX SG50CX	135 64.8,
TRIL (Mumbai)	Longi	SunGrow	SG100CX SG50CX	146.34 54,
Khadims India Ltd	Panasonic	SunGrow	SG100CX SG50CX SG100CX SG100CX SG100CX SG100CX SG100CX	129.6 61.5, 140.4, 129.6, 129.6, 129.6, 129.6,
AIIMS Bhubaneshwar	Sri savitr	Sungrow	SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20 SG30CX SG33KTL-M SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20 SG30CX SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20 SG30CX	65 65, 61.75, 27.8, 35.1, 52.8, 61.3, 55.5, 63.7, 24.7, 65, 54.92, 58.5, 31.85,

			SG50KTL-M-20 SG50KTL-M-20 SG50CX SG50KTL-M-20 SG33CX SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20 SG50KTL-M-20	61.7, 58.5, 66.95, 61.1, 29.9, 64.85, 65, 65, 54.6,
Elringklinger	Renewsys	Sungrow	SG110CX	
Shyam Metalics & Energy Pvt. Ltd, Sambalpur (Floating)	Renewsys	SunGrow	SG110CX	100KW - 9
Luminaz Safety Glass Pvt Ltd	Renewsys	Schneider	CL60E, Solis 66 K	79.2, 79.2, 79.2, 81.51, 79.2, 81.51, 79.2, 81.51 81.51, 79.2, 79.2, 79.2,
Bridgestone Indore	adani	Schneider	PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E PVSCL60E	80.27 80.27, 80.27, 84.5, 84.5, 84.5, 84.5, 84.5, 84.5, 84.5, 84.5,
DMart Moshi	RenewSys	SunGrow	SG33KTL-M SG20KTL-M SG110CX SG50KTL-M-20	28.88, 21.46, 120.02, 60.75,
Parker Hannifin India Pvt Ltd, Nagpur	Renewsys	Sungrow	SG110CX	141.7, 141.7, 141.7, 141.7, 141.7, 126.99, 140.61, 140.61, 68.67, 140.61, 39.24,
Parker Hannifin India Pvt Ltd, Navi Mumbai	Renewsys	Sungrow	SG100CX SG100CX SG100CX SG100CX SG100CX SG100CX	137.34 137.34, 147.15, 127.53, 147.15, 127.53,

			SG50CX SG100CX SG100CX	68.67, 137.34, 137.34,
DMart Zirakpur phase 1 & 2	Vikram longi solar	schneider sungrow& sofar	PVSCL25E/Sofar 30000TL-G2/SG1	20kwp/100 kwp
DMart MandiGobindghar (Phase-7)- phase 1	Renewsys	Sungrow	SG50X	50 kwp
D mart zirakpur car port	Renewsys	Sungrow	SG110CX	110 kwp
Dmart Zirakpur DC	Renewsys	Sungrow	SG50CX/ SG20KTL	50kwp/20kwp
DMart MandiGobindghar (Phase-7)- phase 2	Renewsys	Sungrow	SG50CX	50kwp/20kwp

A.5. Parties and project participants >>

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

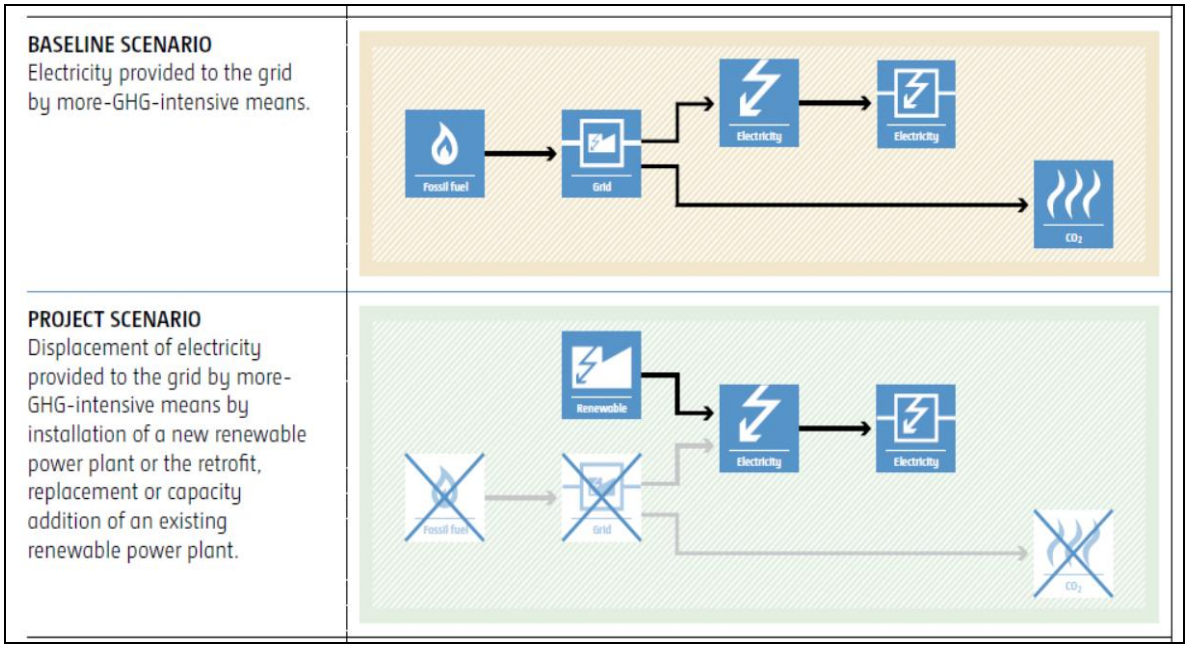
A.6. Baseline Emissions>>

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

In the absence of the project activity, the equivalent amount of electricity would have been imported from the grid. This grid is connected to the unified Indian Grid system, (NEWNE Grid) and relies heavily on fossil fuel-based power plants, making it carbon-intensive. Therefore, the baseline scenario for the project activity aligns with the grid-based electricity system, which also represents the pre-project situation:

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 involves generating electricity from renewable solar energy. The project activity has an installed capacity of 36.67 MW which qualifies for a large-scale project. The project status corresponds to the methodology ACM0002., version 22.0, and the applicability of the methodology is discussed 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 36.67 MW). The positive list comprises of the project being a greenfield plant /unit.
Project activity involves installation of a 36.67 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 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: • Technology Specification provided by the technology supplier. • Purchase order copies • EPC contracts • Power purchase agreement • Project commissioning certificates, etc
The project activity is a voluntary coordinated action. 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.
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.
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.
Project and leakage emissions from biomass are not applicable.

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

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

- 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 activity consists of the utilization of the solar radiation as input source of energy. This solar radiation is converted to direct current (DC) through Photovoltaic cell modules and further converted to alternate current (AC) through inverters and fed to the PPA's. There are no sources of gas generation or involvement of gas either as fuel or as exhaust.

As per applicable methodology ACM0002. version – 22.0, "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 Power Plant and the Indian grid system.

	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_2O	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_2O	Excluded	Excluded for simplification. This is conservative.

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

According to the approved consolidated methodology ACM0002, version 22.0, the baseline scenario is defined as follows:

"In the absence of the project, the equivalent amount of electricity would have been generated by existing grid-connected power plants and newly added power plants, which are primarily fossil fuel-based."

Project Activity and Baseline: The project involves setting up a new solar power plant to harness renewable energy from solar sources. The electricity generated will be used as a captive supply for a specific purpose. Without this project, the equivalent power would have been sourced from the Indian grid, which predominantly relies on fossil fuel-fired plants. Therefore, the baseline for this project is the amount of power that would be produced by the Indian grid.

Grid Emission Factor: The "grid emission factor" refers to the CO_2 emission factor (measured in tCO_2/MWh) associated with each unit of electricity supplied by the grid. 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 2013-2024. Additionally, for the years 2021-2024, the combined margin emission factor calculated from the CEA database in India shows higher emissions than the default value. Consequently, this higher emission factor has been used to calculate emission reductions in a conservative manner.

Thus, $ER_y = BE_y – PE_y – LE_y$

Where:
ER_y = Emission reductions in year y (tCO_2/y)
BE_y = Baseline Emissions in year y (tCO_2/y)
PE_y = Project emissions in year y (tCO_2/y)
LE_y = Leakage emissions in year y (tCO_2/y)

Baseline Emissions

Baseline emissions include only CO_2 emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

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

BE_y = Baseline emissions in year y (tCO_2)
$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EFgrid,y$ = UCR recommended emission factor of 0.9 tCO_2/MWh has been considered.

Estimated annual baseline emission reductions (BEy)
= 23,397.58 MWh/year *0.9 tCO_2/MWh
= 21,057 tCO_2/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, it's 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 = 21,057 – 0 – 0
= 21,057 tCO_2/year (i.e., 21,057 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

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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 : 01/08/2018 to 30/06/2024 (inclusive of both dates).
First Monitoring Period : 01/08/2018 to 30/06/2024
First Crediting Period : 05 years, 10 months,

B.10. Monitoring plan>>

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

1. **Monitoring Plan Objective and Organization**

As the project implementer, the project proponent oversees and monitors the electricity generated by the project, with data electronically archived since August 1, 2018. To ensure data reliability and transparency, the project proponent has established Quality Assurance and Quality Control (QA&QC) measures. These measures manage and oversee data reading, recording, auditing, and archiving, with daily monitoring and submission of data to project proponent. Additionally, QA & QC protocols are in place to calibrate and verify the accuracy of metering devices, as well as to address safety aspects of project operations. Metering devices are regularly calibrated and inspected according to the specifications and requirements set by the state electricity board, 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:	Monitoring frequency: Continuous Measurement frequency: Hourly

	Recording frequency: Monthly 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). 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).
Purpose of data	Calculation of baseline emissions

Data / Parameter:	$EF_{CO2, GRID, y}$
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:	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:	-