



PN SOLAR

**Save money and  
lower your energy bill**

## Welcome to PN Solar Energy

PN solar is a part of Swami Vessels Pvt. Ltd. which is a 35 years old company. Our solar journey began in september 2017 and since then, the company has managed to secure work order of more than 700 kW.

PN solar is a fully integrated solar solutions provider having a wide range of solar products with state of the art technology and industry expertise. Headquartered at Jalgaon, PN is active in supplying of solar energy systems for Households, Private users, Commercial enterprises, Institutions, Public facilities and Investors. PN offers standard and customized designs, Construction, Monitoring, Operation, Maintenance and after sales service practices that align with customers' unique needs.



We have the technical know-how and experienced team in the field of commercial and utility scale power systems. Built with the best quality components and designed with the experience and expertise of the leading solar industry experts, our systems are known for high efficiency and reliability, providing years of worry-free service and an excellent return on the investment.

## VISION

We thrive on the satisfaction of our customers. Our ultimate vision is to provide solar energy solutions of outstanding quality, value for money and best service support, across the globe.

## MISSION

We will be the most admired renewable energy solutions provider by:

- Delivering integrity with each transaction each day.
- Honoring our commitment to be a brand people can trust.
- Offering the most technologically advanced products.
- Respecting our team members who are one of the best and brightest minds.
- Contribute to the well being of our employees, society and environment.

## INVESTMENT PROPOSITION

PN solar represents a unique opportunity to invest in a solar power company in India with an excellent track record and high growth



Integrated Business Model



Strong Track Record



Satisfied Customers

## Our Strengths

- Local expertise with global technology.
- Expert design, installation and delivery.
- Understand sensitivities of internal and external customers.
- Display a courage to shape a better future.
- Actively respond to changing market dynamics.
- Bring the best quality products to our consumers, each time.
- Aspires to executive cumulative capacity of 50 MW by 2020.

## Corporate Culture

### Independence:

Provide freedom to work to bring the best out of an individual.

### Entrepreneurial:

Provide encouragement to take new and bold initiatives.

### Solution Oriented:

Focused on problem solving rather than an entertaining a conflict.

### People-Friendly:

Provide friendly atmosphere to employees without any kind of discrimination.

### Rewards and recognition:

Recognize outstanding employee performance.

***“We are proud of our transparency, ethics and world class skills which we bring to our work”***

## PN AUTOMATION & ENERGY SOLUTIONS

PN is a company with a clear commitment to customer service and satisfaction. In order to meet our client's objectives, we leverage quality, performance and price competitiveness. These constitute our strength and reliability. PN is committed to its quality and safety policies, creating immense value for its customers in terms of innovative and energy efficient engineering, on time completion and complete after sales support. We firmly believe that ethical conduct is the cornerstone of good business. We are committed to honesty and high morals in all dealings, both internally and externally. The variety of our backgrounds and perspectives gives PN the range of expertise required to provide solutions to our clients' most complex problems.



## VALUE PROPOSITIONS



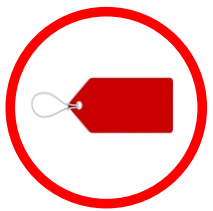
### Quality

The products and electro mechanical equipments used by the PN have all necessary verifications and CE signing. PN complies with a range of international standards including IEC 62446 and IEC 60364-7-712.



### Performance

Inspired by the customers' project needs, we design competitive solutions that perform reliably throughout your plant lifetime, so that you benefit from high solar profits. Our experts lead the forefront of the technology when it comes to engineering the simplest and most optimized solar power systems as per needs.



### Price Competitiveness

PN offers competitive prices in all project ranges. The company's goal is to achieve the best quality / price relation.



### Expertise

Technical expertise about the existing and latest solar technologies, is the backbone of our company. We have a dedicated team of professionals with a experience of more than 3 MW solar system installation, design and commissioning.

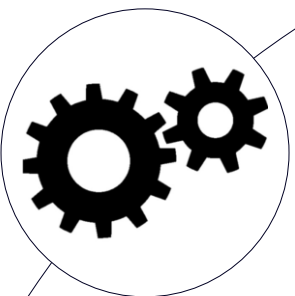
## PARTNER WITH US



PN offers a great service in the planning and installation of Solar energy efficient systems of various kinds. We strive to offer the best solution for requirements and impartial advice at an honest price. We listen, we discuss, we advise. We then select the best solution to fit. We don't shoehorn projects and if we feel our products are not a good fit we'll be honest about it from the beginning.

## Domain Expertise

Expertise in multiple industries and technologies, having good knowledge of business issues too.



## Value

Quality resources, competitive costs and excellent service resulting in maximum savings to the client.



## Testimonials

Excellent testimonials and referrals on our quality and service.



## Management

Highly accessible and flexible executive team to promptly resolve any issues.



### Key Services Offered

Feasibility Study

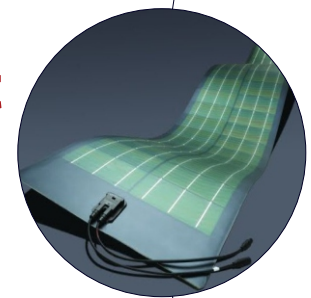
Engineering & Design

Procurement

Project Execution

Erection & Commissioning

Operation & Maintenance



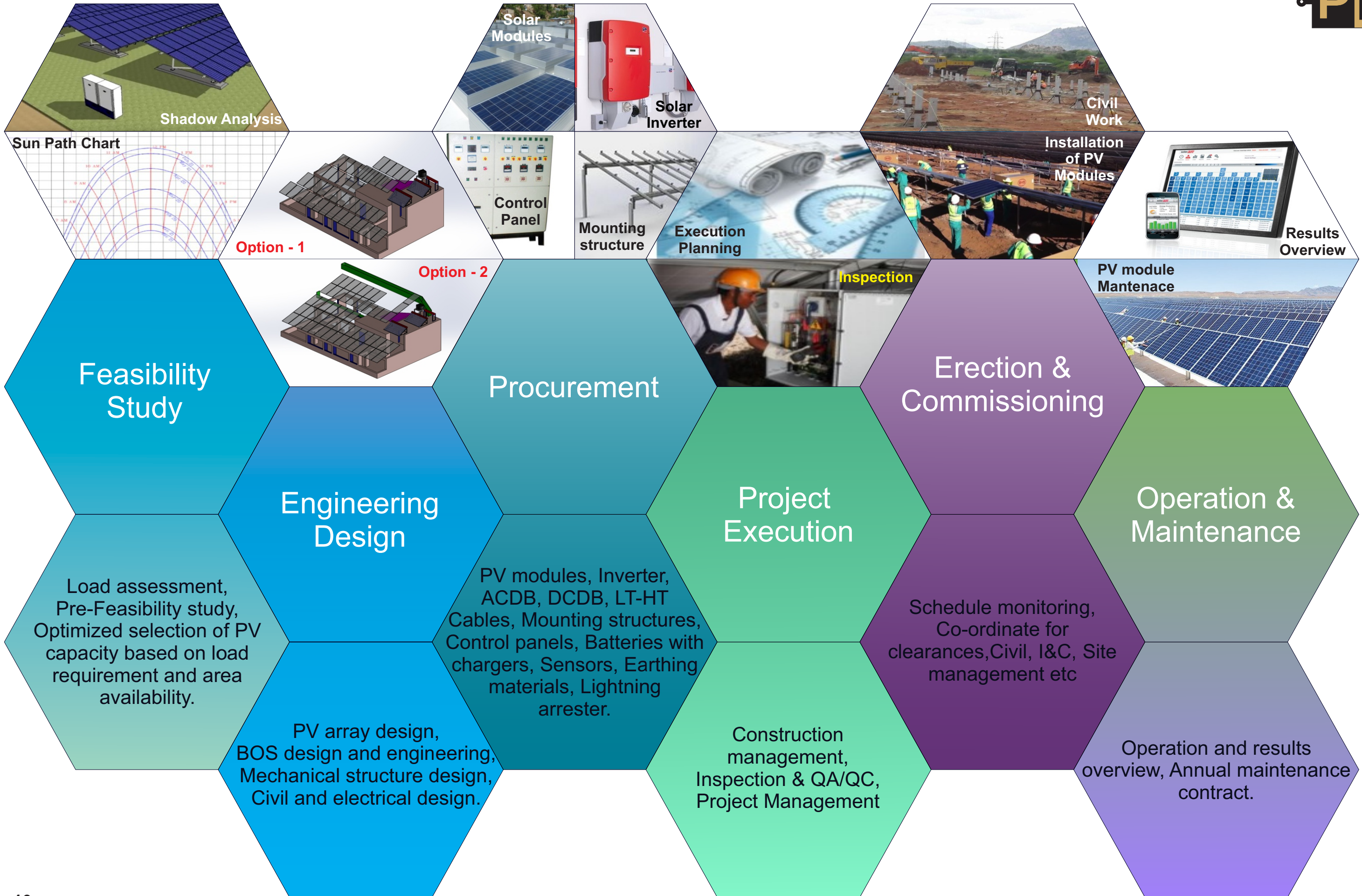
## State of the Art

Application of state of the art technologies in the solar field for our consumers.

## Track Record

Proven track record executing complex projects on time and budget.

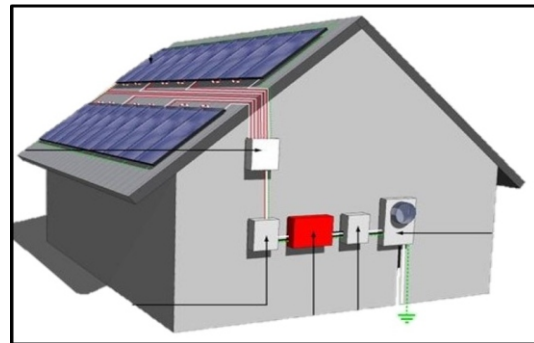




For more information, please visit:  
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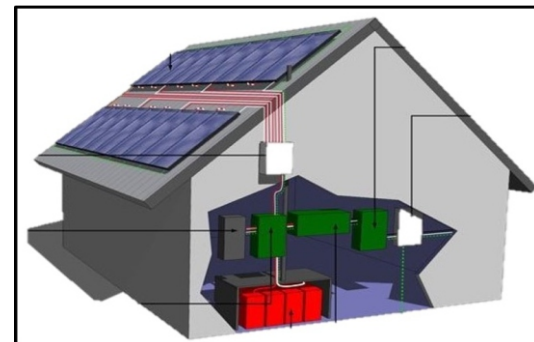
PN offers the PV market a wide range of products from light based technology to heat based technology, therefore covering the entire spectrum of the needs that customers may have in solar domain.

All products and designs used are state of the art. Our portfolio includes:



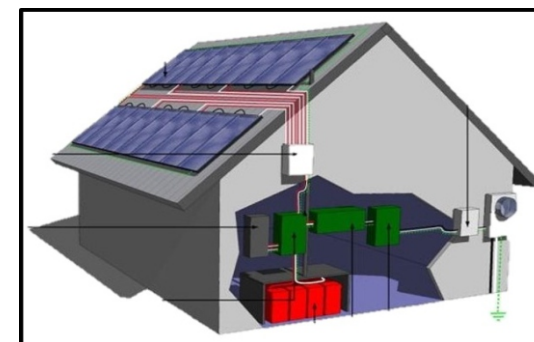
## Grid - Tie PV System

A Grid-Tie system involves a solar array which generates DC power during the day which is converted to AC by an inverter and sent into the house side of the electric meter. If the home is using less power than the system is generating, the electricity flows out the meter to the grid. A grid-tie system will reduce your power bill by the amount of kWhs produced and is the least expensive PV system choice.



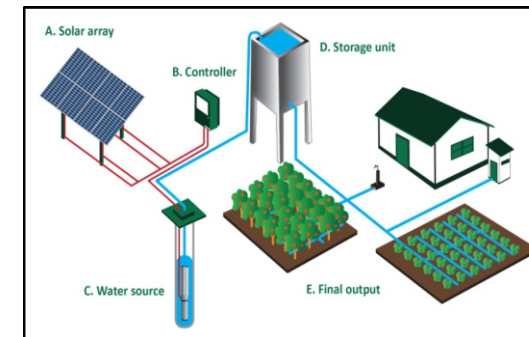
## Off Grid PV System

An off-Grid system is designed around the estimated electrical load consumption both with production (Solar array) and storage (Batteries). It involves solar modules, solar charge controller, batteries and inverter. Most off-grid systems incorporate generators for backup. The generator can be configured to automatically start when needed.



## Hybrid PV System

A hybrid system is essentially a combination of Grid-Tie and Off-Grid system. It uses the similar inverter to the off-grid system and incorporates a battery bank. It back feeds power either to house loads or to the grid like a grid-tie system but in the event of the grid power outage it can provide backup power to designated critical loads.



## Solar Water Pump

The solar water pumping system is a stand-alone system operating on power generated using solar PV system. The systems are designed to lift/pump water for irrigation, farms, drinking and other similar applications. These systems are best alternative in areas where there is no electricity or reliable supply is not available. The system requires a shadow free area for installation of the solar panels.



## Solar Water Heater

Solar water heater is a system that utilizes solar energy to heat water. It has a system that is installed on a terrace or open space where it can get sunlight and the energy from the sun is then used to heat water and store it in an insulated tank. We manufacture both FPC and ETC type solar water heaters.



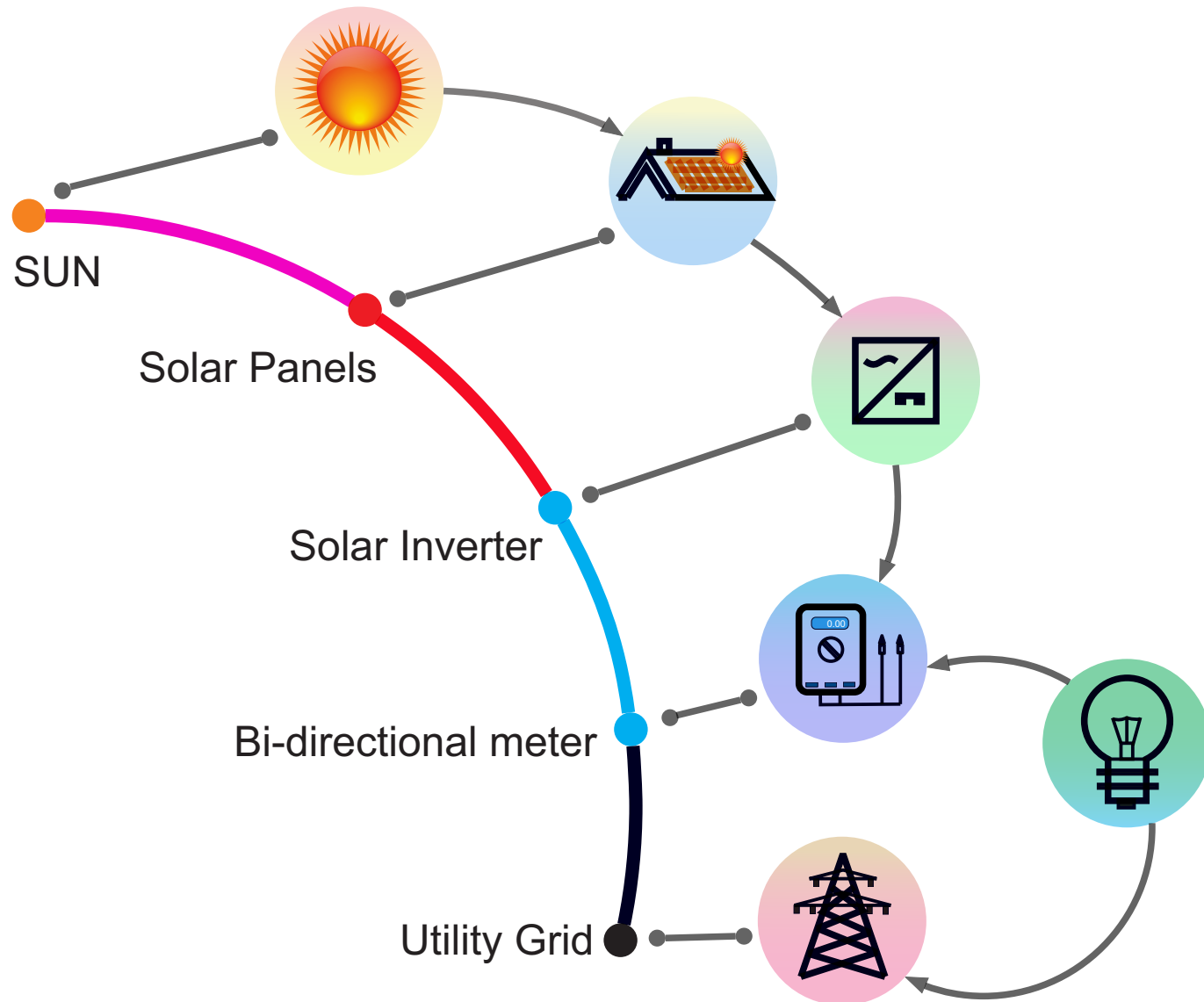
## Solar Street Lights

A solar street light utilizes solar energy in order to power the light source. The solar street light comprises of PV cells which convert the solar energy into electrical energy to be stored in the battery. At the nighttime the lamp starts automatically and it consumes the electricity already stored in the battery. During the day time, the battery gets recharged and the process keeps on repeating every day.

# GRID CONNECTED ROOFTOP SOLAR SYSTEM

For more information, please visit:  
[www.pnaes.com](http://www.pnaes.com)

In grid connected rooftop or small SPV system, the DC power generated from SPV panel is converted to AC power using power conditioning unit and is fed to the grid either of 440V/220V three/single phase line or 33 kV/ 11 kV three phase lines depending on the local technical legal requirements.



These systems generate power during the day time which is utilized by powering captive loads and feed excess power to the grid. In case, when power generated is not sufficient, the captive loads are served by drawing power from the grid. The concept of rooftop solar is based on the scale of the PV plant rather than the fact whether it is situated on the roof/terrace or not. Hence, the definition of the RTS also includes small solar plant on the ground.

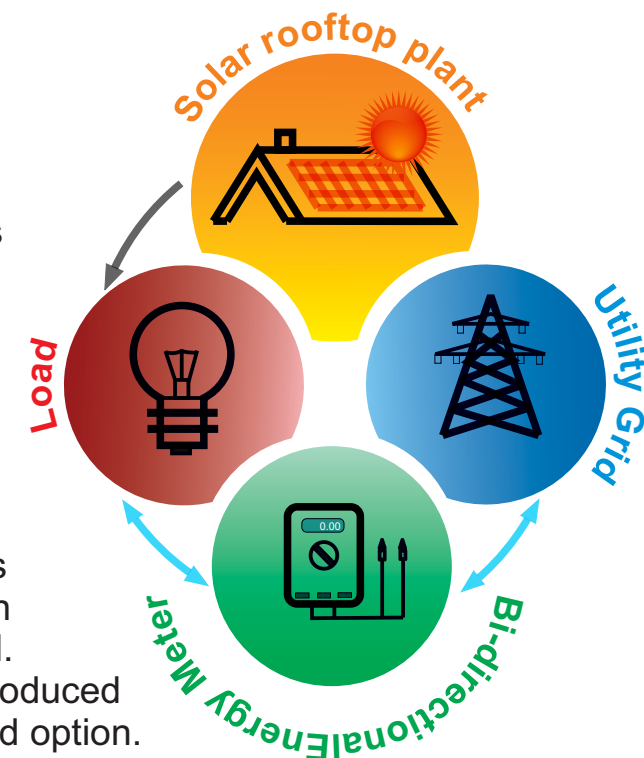
## Benefits from the grid connected rooftop solar system

- ☀ Utilization of available vacant space;
- ☀ Long term energy and ecological security by reduction in carbon emission;
- ☀ Lower gestation period;
- ☀ Better management of daytime peak loads by DISCOM/Utility;
- ☀ Lower transmission and distribution losses;
- ☀ Improvement in the tail-end grid voltages and reduction of the system congestion;
- ☀ Loss mitigation by utilization of distribution network as a source of storage through net-metering;
- ☀ Minimal technical losses as power consumption and generation are co-located.

## Net Metering

The way how electricity is billed strongly influences profitability of the PV investments. To fully harness the benefits of the investments, the final user should be able to make the most of metering system.

Net Metering systems are primarily aimed at providing an opportunity to consumers to offset their electricity bills, wherein a single meter records both import of conventional energy from distribution grid and export of solar energy into distribution grid. Thus, net metering allows the final user to credit produced energy in the grid and is also prompted as preferred option.





# BUSINESS MODELS



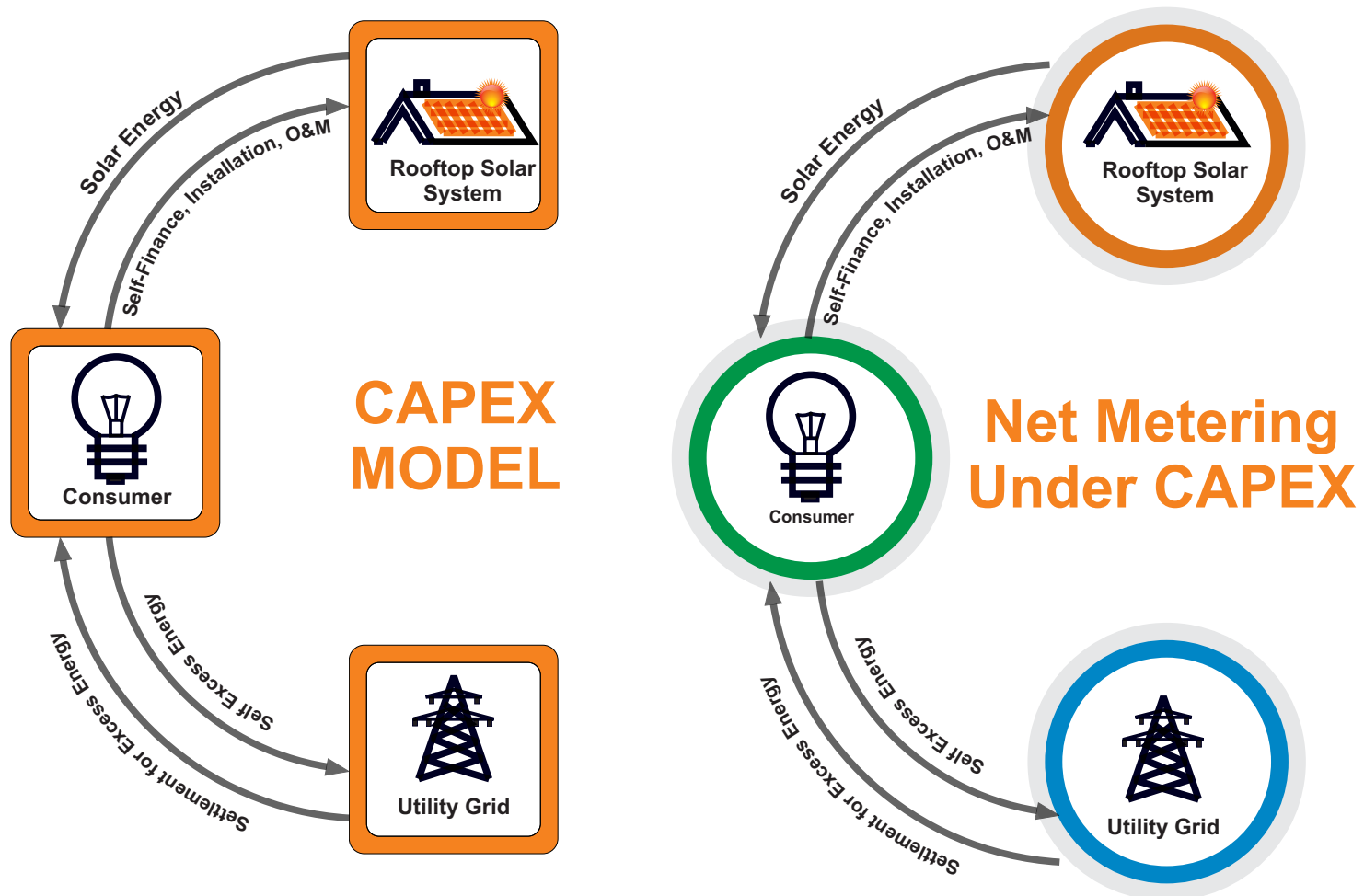
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In India principally there are two major business models:

- CAPEX** - Capital expenditures are provided by the rooftop owner;
- RESCO** - Capital expenditures are covered by third party.

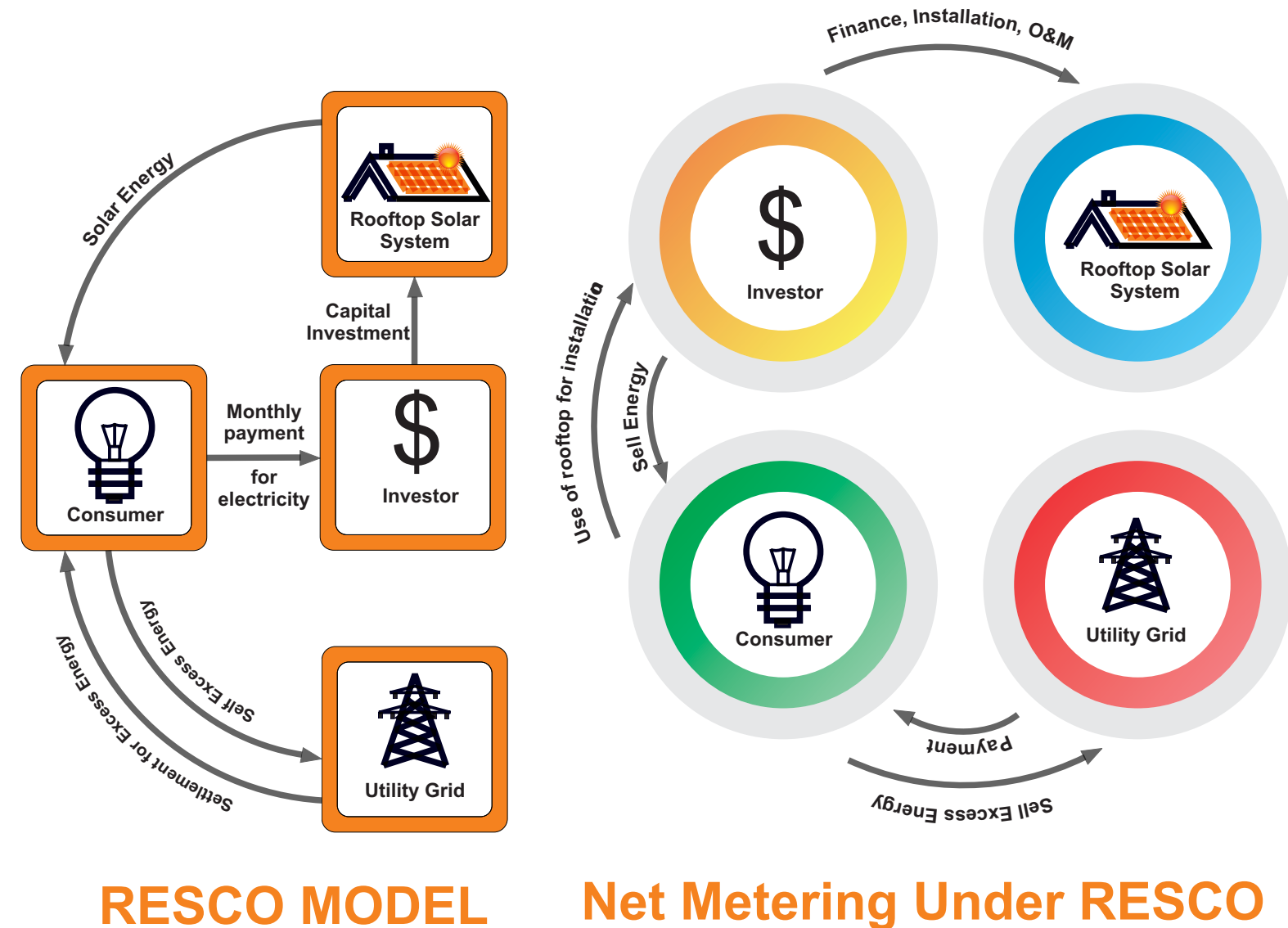
## CAPEX MODEL (Capital Expenditure Model)

CAPEX mode is the most common business mode for solar deployment in India. In this model the consumer purchases the solar system, by making 100% of the payment up-front or financing the system, often through a bank.



## RESCO MODEL (Renewable Energy Service Company Model)

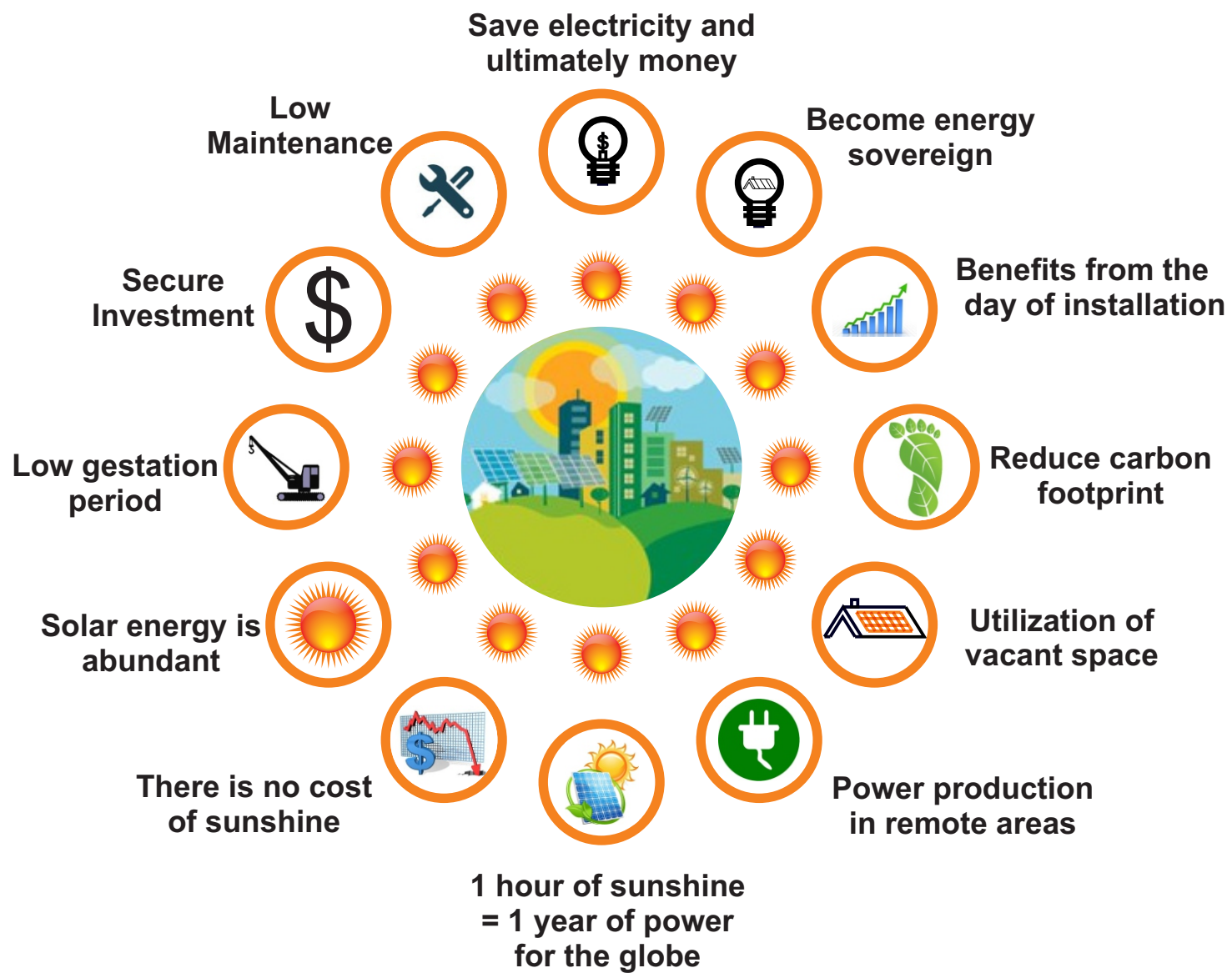
Under this model, the RESCO developer finances, installs, operates and maintains the rooftop solar power plant. The developer signs an agreement with the rooftop owner. The rooftop owners can consume the electricity generated, for which they have to pay a pre-decided tariff to RESCO developer on a monthly basis for the tenure of the agreement. Here, the RESCO developer invests in solar rooftop asset and sells the generated power to the building owner in favor of a lower solar power tariff. The excess power could be sold by the building owner to the utility through net metering system.



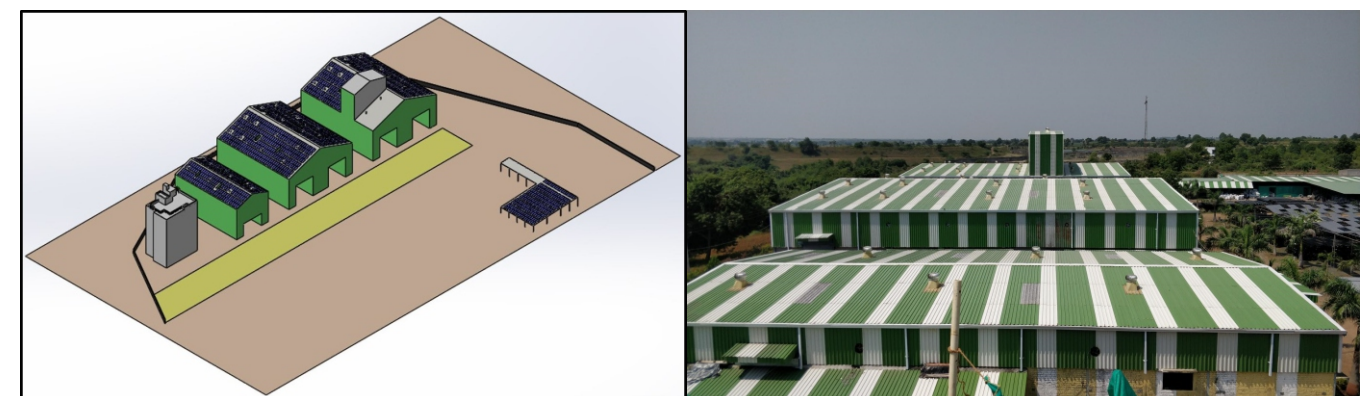
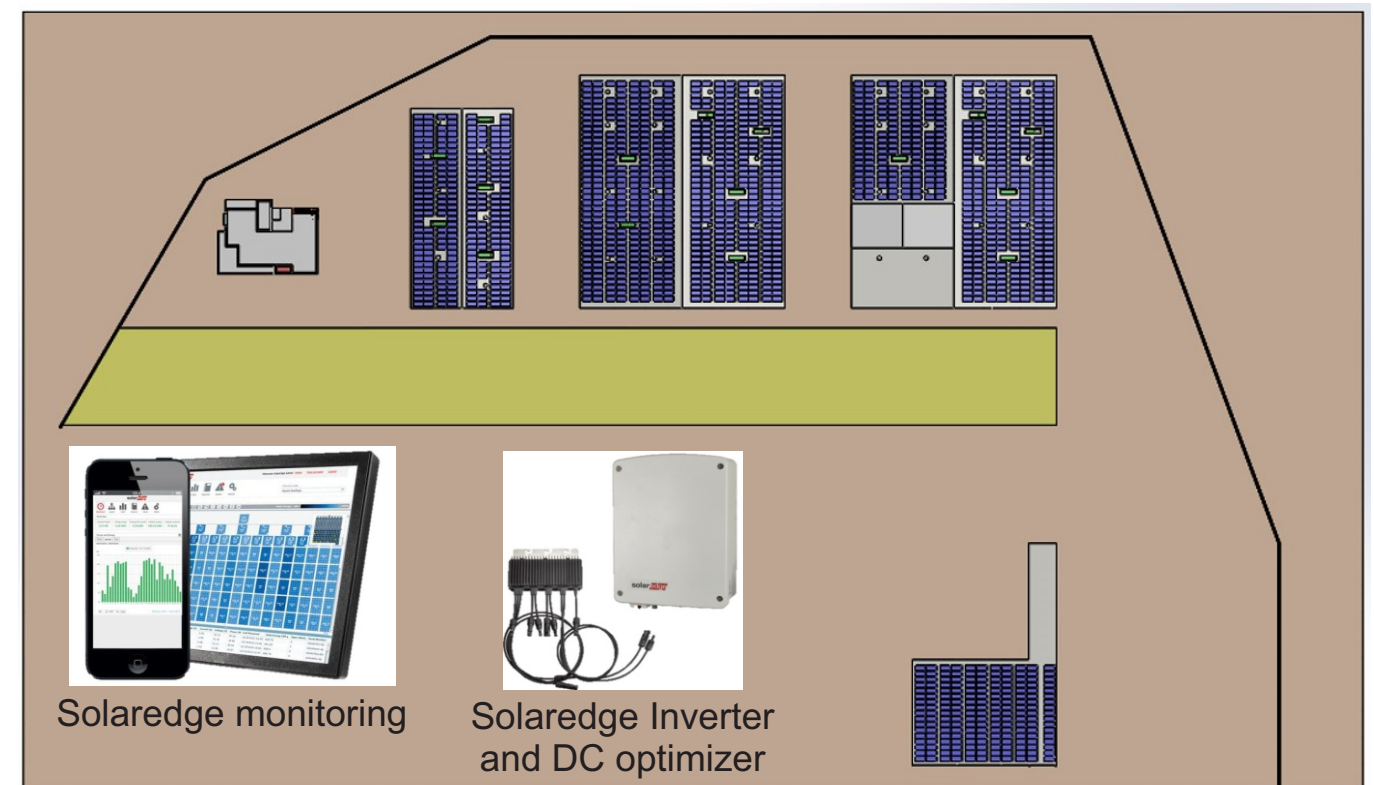
# WHY GO SOLAR ?



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## Current Ongoing Project 600 kW



## Solar Power Plant ROI Example

### 100 kW Grid-Tie Solar Power Plant

1) Space required	10,000 Sq. ft.
2) Units generated per year	1,46,000 kWh
3) Investment for solar plant	Rs. 50,00,000
4) Saving per year	Rs. 11,68,000
5) Depreciation per year	40%

The cost of the solar power plant will be recovered within 4 years since its working

Solar Inverter	SOLAREEDGE	12 Years standard warranty
Solar Panels	JACKSON	25 years performance warranty
DC optimizer	SOLAREEDGE	25 years standard warranty
Panel to Panel Monitoring	SOLAREEDGE	25 years free

## PN AUTOMATION AND ENERGY SOLUTIONS



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