



Powering Infinity

Transforming solar energy
towards a sustainable future...

Decade of solar harnessing

With a vast experience close to two decades, **Sun Zone** has carved a niche in the world of Solar Products. Starting as a small unit way back in 1999, the company began to evolve under the able leadership of **Mr. Devendrappa S.T.**, who was a visionary who could foresee a bright future in the emerging renewable energy sector. Dedication, hard work and commitment were a part of a continuous effort, we put into our venture and today, we stand tall as **SUN ZONE SYSTEM INDIA PRIVATE LIMITED.**





Cutting edge technology

Sun Zone has state-of-art infrastructure and skilled manpower to design and build solar products with precise machines capable of cutting, bending, fitness testing, resistance to heat and assembling, along with use of pneumatic technology. Implementation of mechanization along with use of right practices has minimized wastage, speeded up production and has assisted in manufacturing solar products, both in terms of its quality and performance. Our every effort is rewarded when an end user is contented with our products and further recommends it to others.

Steaming hot water from sun

Solar Water Heating Systems

For Domestic & Commercial use

Our Solar Water Heating Systems are built using superior quality raw materials with advanced technology to provide the convenience of hot water made available for use depending on the capacity, place and purpose of use.

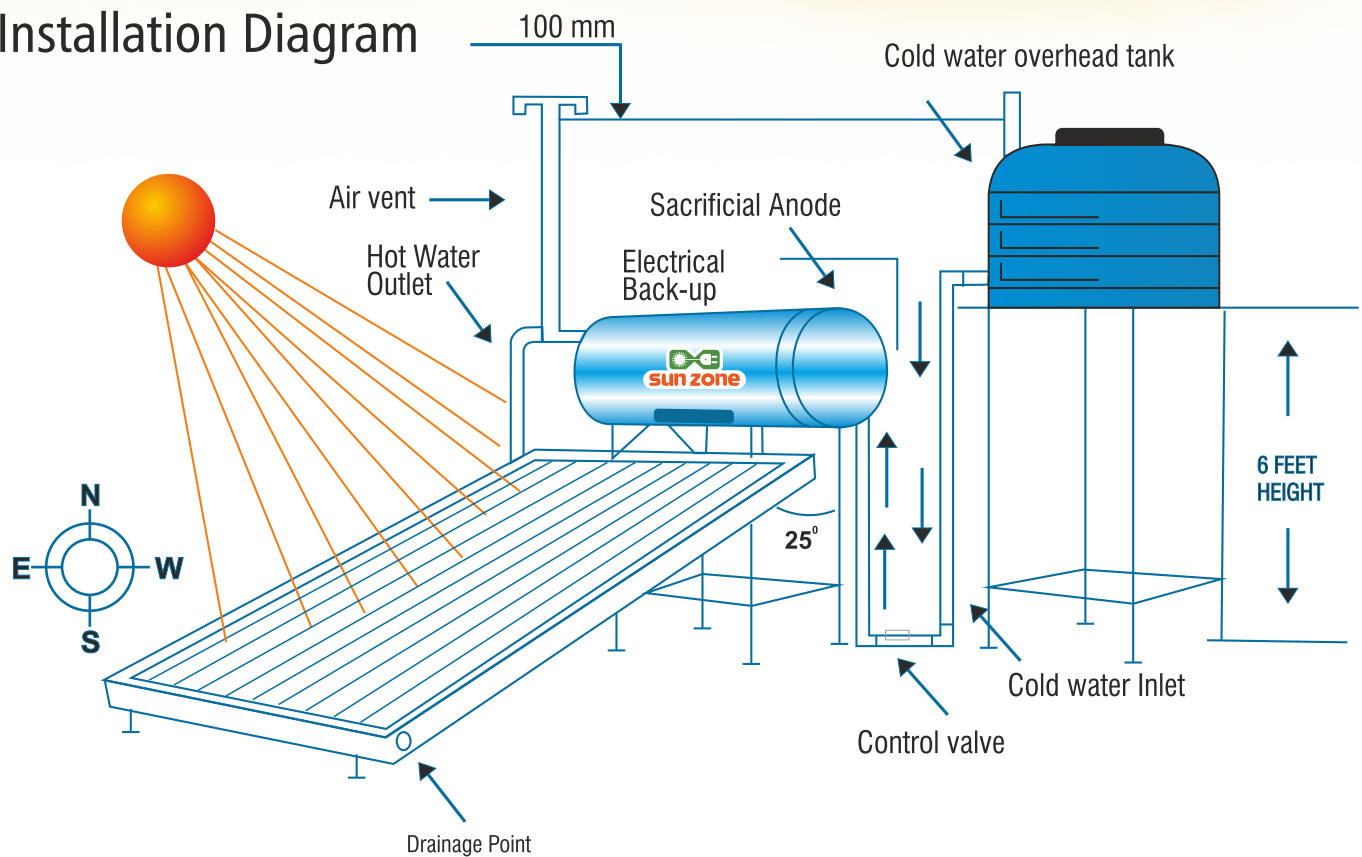
We manufacture two types of Solar Water Heating Systems:

1] Flat Plate Collector Type (FPC)

- a) Thermo Siphonic Type
- b) Forced Circulation Type
- c) Heat Exchanger
- d) Pressurized System



Installation Diagram



Product features:

- ✦ Flat Plate collector with high coating for absorptivity
- ✦ Front glazing toughened glass
- ✦ TIG welded Stainless steel storage tank
- ✦ Protection of storage tank from corrosion using Anode rod

TECHNICAL SPECIFICATION

Flat Plate Collector

Absorber Coating	: Selective Coating of Absorptivity 0.96 ± 0.02
Riser Pipe	: Copper 12.5mm Q 24 SWG (± 0.05mm)
Header Pipe	: Copper 25mm Q 22 SWG (± 0.05mm)
Bonding b/w Riser Header	: Brazing
Bonding b/w Riser & Absorber Sheet	: Continuous ultrasonic welding
Front Glazing	: Toughened Clear / Frosted Glass
Backside Insulation	: Rockwool
Gasket	: EPDM Rubber
Collector Box	: Extruded Alluminium channels
Header Inlet & Outlet	
Jackets	: Brass Flanges
Assembly	: Assembled under pneumatic technology

Storage Tank

Storage Tank (inside)	: SS 304 Grade / GI / Enamel coated / PE Coated
Insulation	: Rockwool / Min / PUF
Tank outer cladding	: Polyester grade powder coated sheet / stainless steel
Inter connecting pipes	: Stainless Steel 304 grade / Gz
Storage tank stand	: Mild steel
Electrical back-up	: 2kw thermostat controlled, varies according to size of the storage tank
Sacrificial Anode	: To avoid galvanic corrosion
Hose pipe	: 25/35 EPDM Rubber



2] Evacuated Tube Collector System (ETC)

Product Features

- High borosilicate twin glass tube of inner and outer assembly
- Inner glass tube coated with special selective three layer coating
- Fast thermal collection efficiency
- TIG / Seam / Plasma / Co2 / welded Stainless steel / GI storage tank / ceramic coated tanks
- Protection of storage tank from corrosion using ceramic / pure epoxy coating

★ PREMIER Model



★ DELUXE Model



SPECIFICATIONS EVACUATED GLASS TUBE

Three Target Evacuated Glass Tube Specification

Structure	: All – glass double – tube co – axial structure
Glass Material	: High Borosilicate 3.3glass
External pipe diameter & thickness	: = $\varnothing 58 \text{ mm} \pm 0.7 \text{ mm} = 1.6 \text{ mm}$
Internal pipe diameter & thickness	: = $\varnothing 47 \text{ mm} \pm 0.7 \text{ mm} = 1.6 \text{ mm}$
Pipe length	: 1800mm / 2100 mm

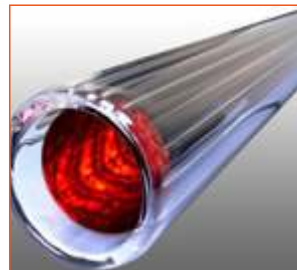
Absorptive Coating Property

Structure	: CU/SS-ALN(H)/SS-ALN(L)/ALN
Sediment Method	: 3-target magnetron sputtering Plating
Specific Absorption	: $a_s = 0.93-0.96 (\text{AM } 1.5)$
Emission Ratio	: $E_n = 0.04-0.06 (80^\circ \text{C} \pm 5^\circ \text{C})$
Vacuum Tightness	: $P \leq 5.0 \times 10^{-3} \varnothing \text{B (Pa)}$
Idle Sunning Property Parameters	: $Y = 260-300 \text{ M}^2 \cdot ^\circ \text{C/KW}$

Solar Irradiation for Obtaining a Present

Water Temperature	: $H \leq 4.7 \text{ MJ/M}^2 (\varnothing 58)$ $H + 3.7 \sim 4.2 \text{ MJ/M}^2$
Average Heat Loss Coefficient	: $U_{it} = 0.4-0.6 \text{ W/(M}^2 \cdot ^\circ \text{C)}$

THE INNER SECRET OF SUNZONE SOLAR WATER HEATERS



Evacuated Glass Tubes



FPC Absorber Fin



Three Layer ETC Tubes



Parts of ETC / FPC Systems



★ MITRA Model



TECHNICAL SPECIFICATION:

Storage Tank:

Storage tank	: SS 304
Insulation	: PUF
Tank outer cladding	: Polyester grade powder coated sheet/Stainless Steel.
Inter Connecting Pipes	: Stainless Steel 304 Grade
Storage tank stand	: GI with Powder Coated.
Assistant Tank (Baby Tank)	: 5 Ltr capacity

SPECIFICATIONS EVACUATED GLASS TUBE

Three Target Evacuated Glass Tube Specification

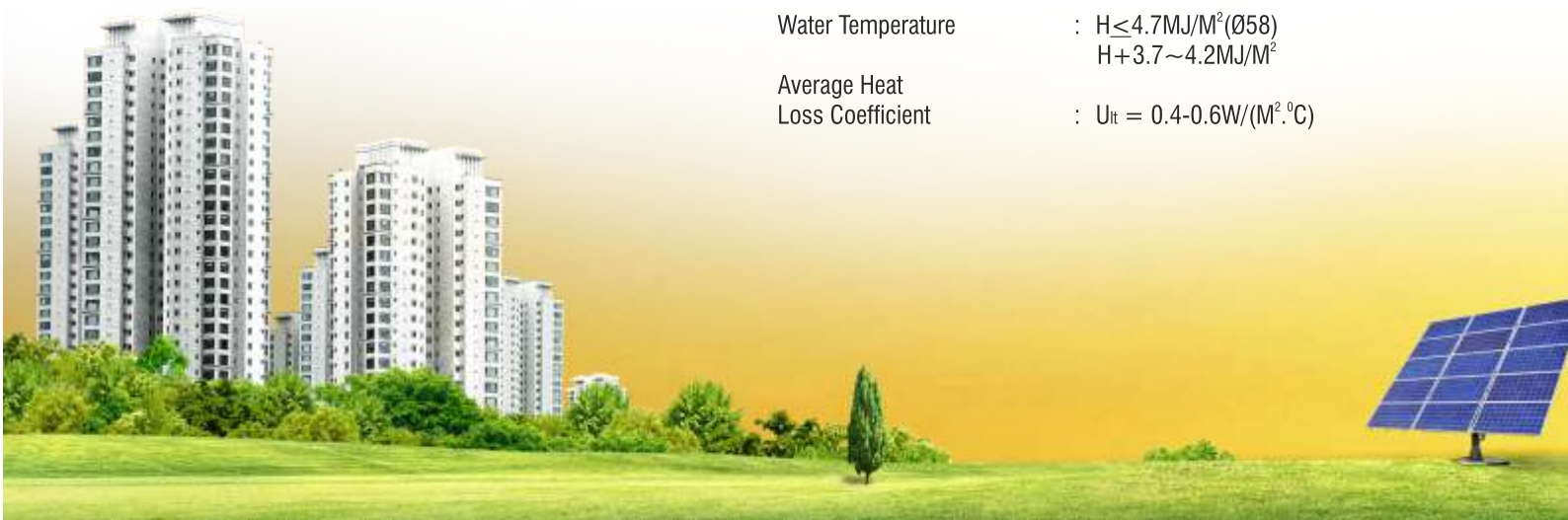
Structure	: All – glass double – tube co – axial structure
Glass Material	: High Borosilicate 3.3glass
External pipe diameter & thickness	: $= \varnothing 58 * MM \pm 0.7mm = 1.6mm$
Internal pipe diameter & thickness	: $= \varnothing 47 * MM \pm 0.7mm = 1.6mm$
Pipe length	: 1800mm / 2100 mm

Absorptive Coating Property

Structure	: CU/SS-ALN(H)/SS-ALN(L)/ALN
Sediment Method	: 3-target magnetron sputtering Plating
Specific Absorption	: $a_s = 0.93-0.96(AM\ 1.5)$
Emission Ratio	: $E_n = 0.04-0.06(80^\circ C \pm 5^\circ C)$
Vacuum Tightness	: $P \leq 5.0 \times 10^{-3} \varnothing B(Pa)$
Idle Sunning Property Parameters	: $Y = 260-300 M^2 \cdot ^\circ C / KW$

Solar Irradiation for Obtaining a Present

Water Temperature	: $H \leq 4.7 MJ / M^2 (\varnothing 58)$ $H + 3.7 \sim 4.2 MJ / M^2$
Average Heat Loss Coefficient	: $U_{lt} = 0.4-0.6 W / (M^2 \cdot ^\circ C)$



★ PREMIER Model

500 LPD ETC SOLAR WATER HEATER (DIRECT PULG-IN)



TECHNICAL SPECIFICATION:

Storage Tank:

Storage tank	: SS 304 /GI/Enamel Coated/PE Coated
Insulation	: PUF
Tank outer cladding	: Polyester grade powder coated sheet/Stainless Steel.
Inter Connecting Pipes	: Stainless Steel 304 Grade
Storage tank stand	: GI/MS with Powder Coated.

SPECIFICATIONS EVACUATED GLASS TUBE

Three Target Evacuated Glass Tube Specification

Structure	: All – glass double – tube co – axial structure
Glass Material	: High Borosilicate 3.3glass
External pipe diameter & thickness	: = $\varnothing 58 \text{ *MM} \pm 0.7 \text{ mm} = 1.6 \text{ mm}$
Internal pipe diameter & thickness	: = $\varnothing 47 \text{ *MM} \pm 0.7 \text{ mm} = 1.6 \text{ mm}$
Number of tubes	: 2100MM x 58MM - 34Tubes.

Absorptive Coating Property

Structure	: CU/SS-ALN(H)/SS-ALN(L)/ALN
Sediment Method	: 3-target magnetron sputtering Plating
Specific Absorption	: $a_s = 0.93-0.96 (\text{AM } 1.5)$
Emission Ratio	: $E_n = 0.04-0.06 (80^\circ \text{C} \pm 5^\circ \text{C})$
Vacuum Tightness	: $P \leq 5.0 \times 10^{-3} \varnothing \text{B(Pa)}$
Idle Sunning Property Parameters	: $Y = 260-300 \text{ M}^2 \cdot ^\circ \text{C/KW}$

Solar Irradiation for Obtaining a Present

Water Temperature	: $H \leq 4.7 \text{ MJ/M}^2 (\varnothing 58)$ $H + 3.7 \sim 4.2 \text{ MJ/M}^2$
Average Heat Loss Coefficient	: $U_{lt} = 0.4-0.6 \text{ W/(M}^2 \cdot ^\circ \text{C)}$



SOLAR FLAT PLATE COLLECTOR:



Size: 1030 2030 mm

Absorber Coating	Selective coating of absorptivity 0.097 + 0.02
Riser Pipe	Copper 12.5mm
Header Pipe	Copper 25 mm
Bonding between Riser and Header	Brazing
Bonding between Riser and Absorber sheet	Continuous Ultrasonic Welding
Size of Collector	1030 mm x 2030 mm
Front Glazing	Hi Efficiency Frosted Glass
Bottom sheet	Aluminium Sheet
Backside Insulation	Fibre wool / Rock wool
Gasket	EPDM Rubber
Collector Box	Extruded Aluminium channels
Header inlet and outlet jackets	Brass Flanges
Collector Box Corner finishing	Aluminium angle
Collector box coating	Polyester grade powder coating [Off White]
Assembly	Pneumatic Technology
Collector inside finishing	Aluminium foil



ABOUT HEAT PUMP:

Air source heat pumps use a natural source of heat, air, to produce energy. They absorb warmth from the outside air and convert it into heat.

This heat pump, working on the principle of Vapour Compression Refrigeration, an air-sourced heat pump uses a refrigerant system involving a compressor and a condenser to absorb heat at one place and release it at another place.

If you would like to have an even lower impact on the environment and lower running costs, you should think about combining your air source heat pump with a solar panel system to generate the electricity for the heat pump to run.

An air-sourced heat pump can provide fairly low space heating. A high efficiency heat pump can provide up to four times as much as an electric heater using the same energy.

With the combination of a solar water heater, we can achieve a maximum temperature up to 60 degrees at very less cost of electricity.

Advantages of heat Pump:

- 24/7 Hot water
- Low carbon emission
- It consumes less energy for heating the water.



Our Projects



- Largest installations (upto 1 lakh litres)
- More than 1.5 lakh of Solar Water Heater units sold.
- Channel partner for MNRE, Govt. of India.





Empowered from Sun

Sun Zone Solar Systems India Pvt. Ltd., is a leading manufacturer of Solar products such as Solar Lighting systems & Solar Energy generating systems, with the use of **Solar Photo Voltaic cells**. The technology we use is of high **quality**, high **reliability** and **cost effective** to ensure high performance. The Company broadly defines its good intention, sparing no effort to bring in the **best of Photo Voltaic products** by use of the **cleanest** and **richest solar energy** from the nature by adapting new technologies and improving manufacturing technologies.



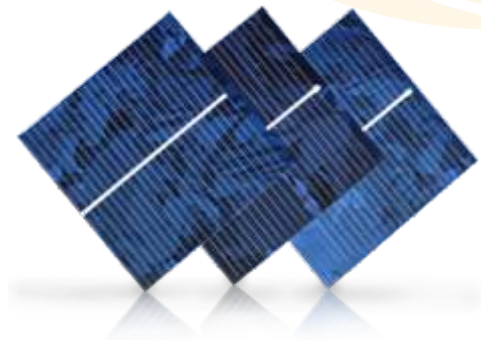
Enlighten with Solar power

Solar Lighting Systems

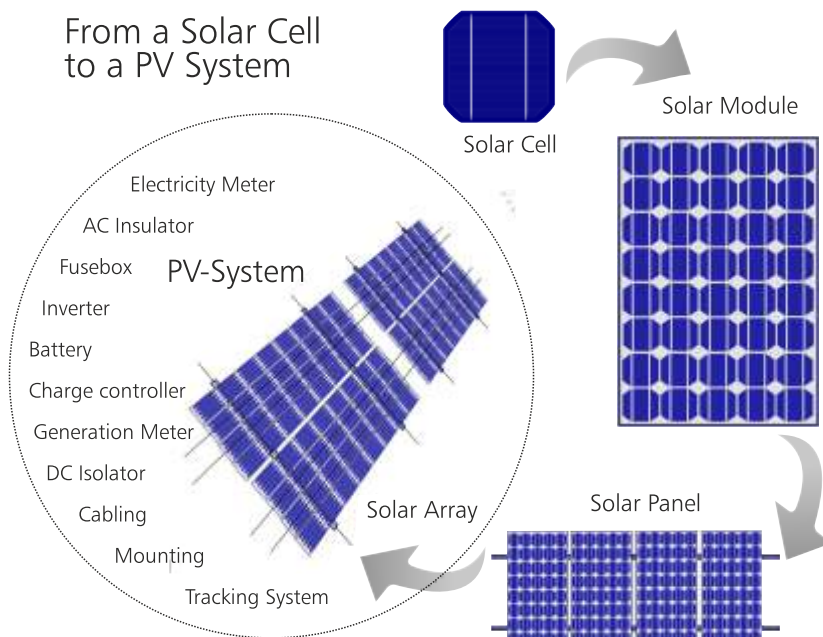
Installation of Solar lighting systems, in your homes, offices and Institutions helps you to save unnecessary expenditure on your electricity bill. Depending on your electricity needs and the size of the solar lighting system you choose to install, you may be able to completely eliminate your electric bill. Solar power is a renewable source of energy, it practically costs nothing to harness the power of the sun in generating and supplying electricity, over the years to come. In this way, Solar power offers long term savings.

About SPV Module

A solar cell, or photovoltaic cell, is an electrical device that converts the energy of light directly into electricity by the photovoltaic effect, which is a physical and chemical phenomenon. It is a form of photoelectric cell, defined as a device whose electrical characteristics, such as current, voltage, or resistance, vary when exposed to light. Individual solar cell devices can be combined to form modules, otherwise known as solar panels. In basic terms a single junction silicon solar cell can produce a maximum open-circuit voltage of approximately 0.5 to 0.6 volts.



From a Solar Cell
to a PV System



SUN ZONE PV Modules are manufactured with an art of in house manufacturing in Bangalore India. Sun Zone produces PV Modules with the highest energy output and unmatched reliability. All our modules are tested and accredited by National And International standards.

We offer modules ranging from 3Wp to 350 Wp.

Our Modules are manufactured as per the standards of MNRE and IEC Standards.



Solar DC Home Lighting System



SUN ZONE Solar LED Home Lighting System manufactured by "M/s Sun Zone Solar System India Pvt. Ltd.," is the successful integration of the solar photovoltaic and the emerging LED technology. These LED Lights give higher brightness at very low power consumption and as a result LED based Solar LED home light system requires very small solar panels and batteries compared to the conventional systems. The LED used in the luminary have a life of more than 50,000 hrs which avoids the costly Light replacements for several years. Solar LED home lighting system harnesses the power of the Sun to provide reliable, cost effective electricity wherever it is needed. This solar home lighting system supply electricity for lighting, entertainment and information to homes that are not connected to grids or where electric supply is quite erratic. Solar Home lighting systems are an excellent solution for household level electrification in rural areas.

Key Features:

- Safe and easy to install
- Free from noise, smoke and pollution
- Required very little attention
- Possible to expand the system in future
- The system available in variety of models with different capacities.

Sl. No.	Model	Specification	Backup Hours
1	SUN ZONE DC-1	10 WP Panel ,3Watt x 3,12v-7AH lithium ion Battery,12V-3Amps Charge Controller	4-5 Hs
2	SUN ZONE DC-2	40 WP Panel,5Watt x 2 & 10Watt x 2, 12V-40AH Battery, 12V-10Amps Charge Controller, Module Mounting structure and standard accessories.	4-6 Hrs
3	SUN ZONE DC -3	60 WP Panel,5Watt x 2 & 10Watt x 2,1DC Fan 14 Watt, 12V-60AH Battery, 12V-10Amps Charge Controller, Module Mounting structure and standard accessories.	4-6 Hrs
4	SUN ZONE DC -4	100 WP Panel,5Watt x 3 & 10Watt x 3,1DC Fan 20 Watt, 12V-80AH Battery, 12V-10Amps Charge Controller, Module Mounting structure and standard accessories.	4-6 Hrs

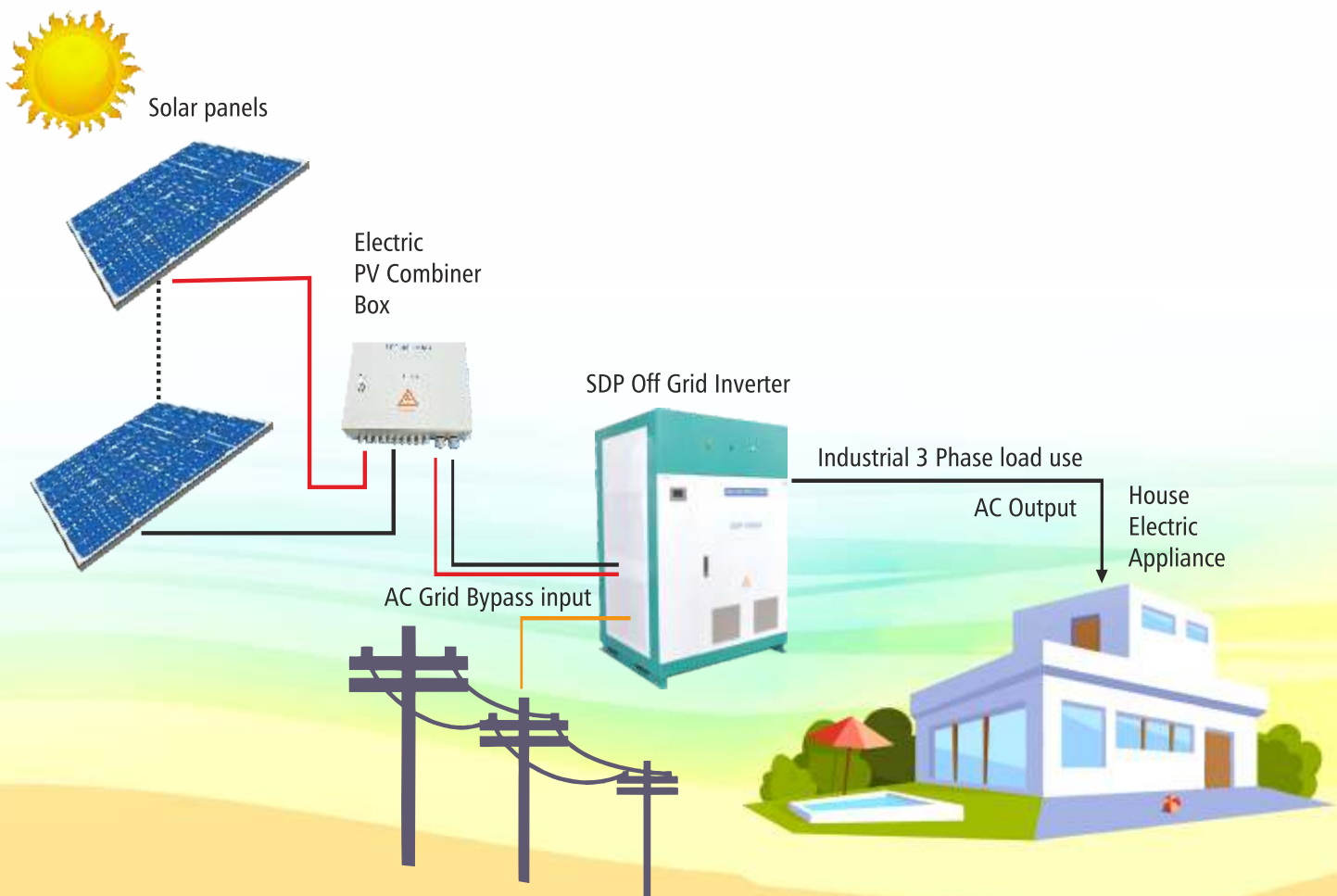


Off Grid System without Battery

Solar power pack is the system used to generate electricity for locations where grid is inaccessible or the access is prohibitively expensive. These solar power pack systems can also be used in conjunction with existing grid for uninterrupted supply of electricity. Sunzone Photovoltaic solar power packs are based on proven solar technology, which makes them highly efficient and completely maintenance-free.

Key Features:

- Clean and Silent source of power
- No fuel required
- Provision of battery bank
- Negligible Maintenance
- No recurring fuel cost
- Modular design
- Simple Installation
- Savings on electricity bill.
- Transportation problems and uncertainty in availability of fuel are totally avoided by using solar photovoltaic systems.

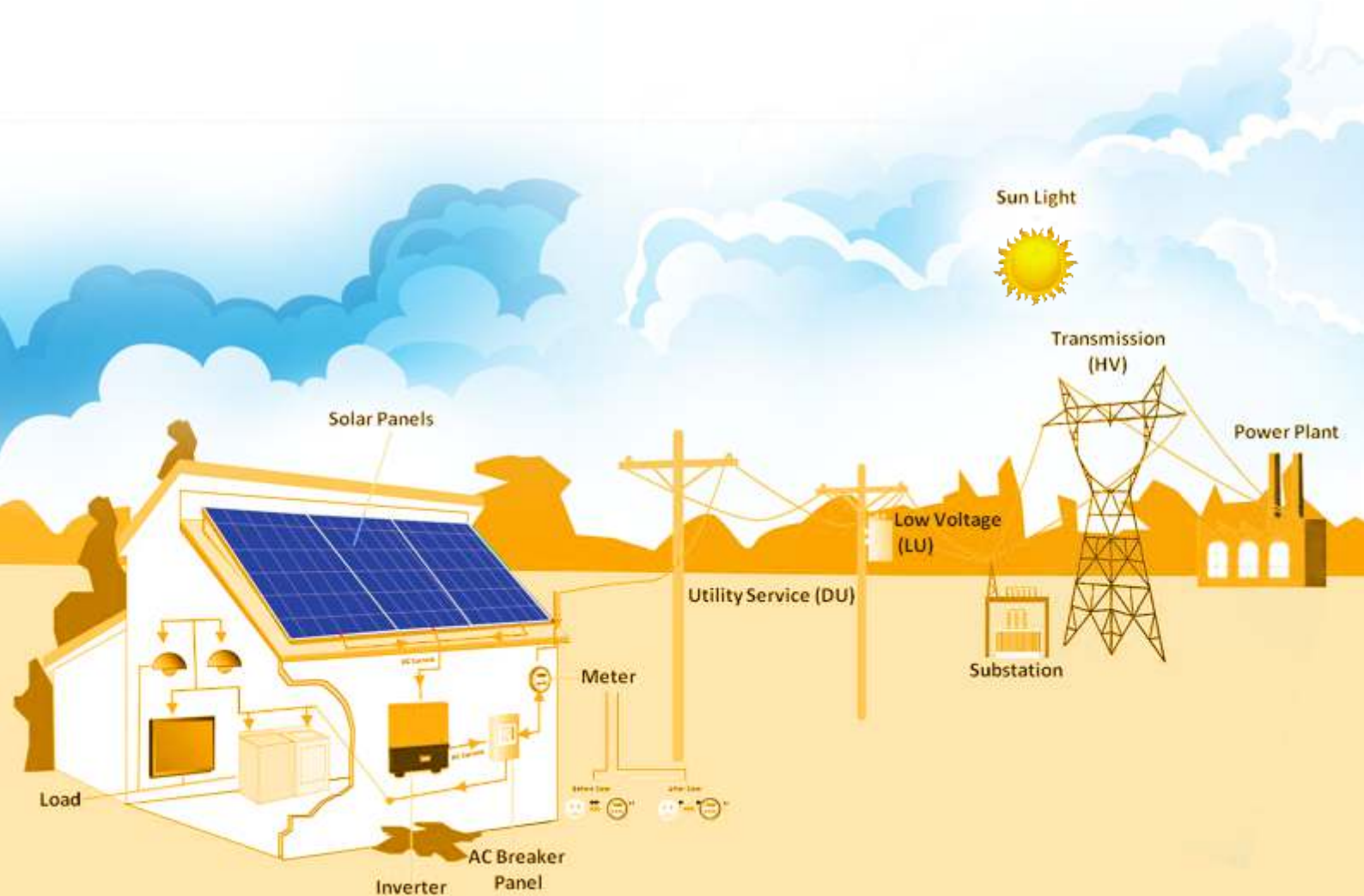


Solar On-Grid System

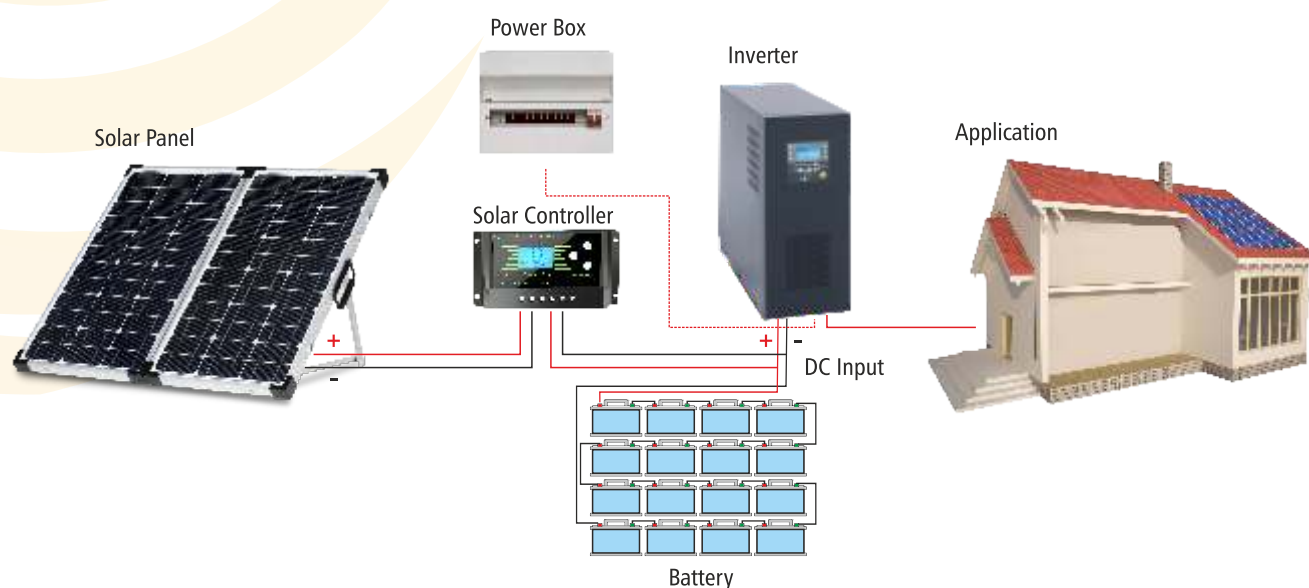
The Solar On-Grid system consists of the photovoltaic solar system connected to a utility grid (usually the public electricity grid). The PV solar panels convert sunlight into DC power, which is then transformed into AC power by inverter. This AC power is consumed by the household appliances and systems. The excess electricity generated flows back into the utility grid that will be used to suffice other customers. The utility grid is consumed when you need more power than the solar power system have produced.

Key Features:

- Pay ZERO for your electricity bill.
- Get protected against tariff hikes.
- Earn from your idle rooftop space.
- Reap Accelerated depreciation benefits.
- Zero Maintenance



Solar AC Home Lighting System. (Off-Grid System)



These models are available in different capacities as follows.

S No	Model	Specification	Backup Hours
1	SUN ZONE AC-1	200 WP SPV Module, 800VA Inerter, 12v-150AH battery and standard accessories	4-5 Hs
2	SUN ZONE AC-2	500 WP SPV Module, 24VDC-1000VA Inverter, 12v-150AH x 2 battery and standard accessories	6-7 Hrs
3	SUN ZONE AC -3	1000WP SPV Module, 24 VDC -1500VA Inverter, 12v-200AH x 2 battery and standard accessories	7-8 Hrs
4	SUN ZONE AC -4	1500 WP SPV Module, 48 VDC -2000VA Inverter 12v-150AH x 4 Battery and Standard Accessories	7-8 Hrs
5	SUN ZONE AC -5	2000 WP SPV Module, 48 VDC -3000VA Inverter 12v-200AH x 4 Battery and Standard Accessories	7-8 Hrs

And also available in customised design with higher capacities.



Our Photo Voltaic Installations

- 1 KV to 1Mega Watt Scale projects
- Inhouse facilities to manufacture all components.
- Channel partner for **MNRE**, Govt. of India.







Commercial

Lighting neighborhoods with sun's power

Solar Powered Street Lighting Systems

Provides worry-free lighting in outdoor environments where energy conservation and/or safety are a concern.

Product features

- Guaranteed Light during Emergency power outages
- High Efficiency LEDs being used.
- Concealed Solar panel design
- Pole and Post, options available



Solar Street Lighting System.

SUN ZONE street lighting system is the ideal stand alone street lighting systems for illuminating streets, roads and gardens which are in remote areas affected by the grid power. The fully integrated system combines the latest and the most innovative technology available with LED Luminaries. It provides years of convenient and trouble free lighting.

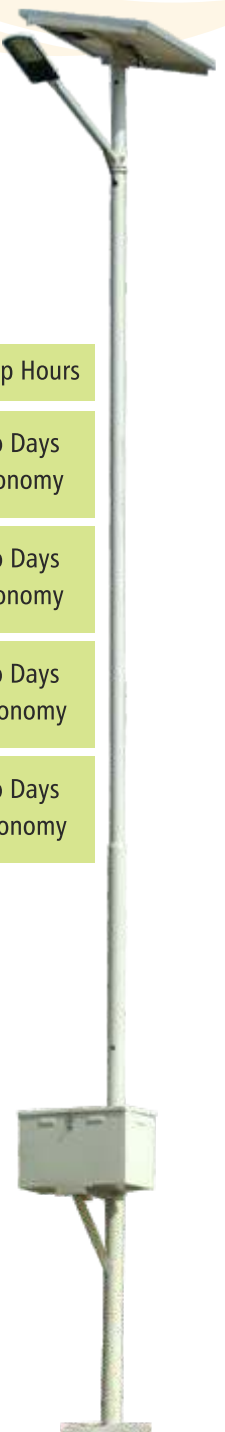
At the advanced technology has been adopted in the manufacturing as per the standards of MNRE and also we have introduced the Lithium ion based solar street lighting system which is trouble free and maintenance free street lighting system.

These systems come with dusk to dawn feature which operates automatically with no human interface.

Key Features:

- Superior quality and high performance
- Cost- effective
- Long life high quality
- Maintenance free.

S No	Model	Specification	Backup Hours
1	SUN ZONE SL-1	40WP SPV Module, 40AH Battery, 11W LED Luminary, 4.5Mtr Pole with standard accessories.	Two Days Autonomy
2	SUN ZONE SL-2	60WP SPV Module, 60AH Battery, 15W LED Luminary, 4.5Mtr Pole with standard accessories.	Two Days Autonomy
3	SUN ZONE SL -3	100 WP SPV Module,80AH Battery,18W LED Luminary, 4.5Mtr Pole with standard accessories	Two Days Autonomy
4	SUN ZONE SL -4	125WP SPV Module,100AH Battery, 25W LED Luminary, 4.5Mtr Pole with standard accessories	Two Days Autonomy



Solar Pumping System

SUN ZONE solar water pumping system is a standalone system operating on power generated by solar photovoltaic panels.

The operation of solar powered pump is more economical mainly due to the lower operation and maintenance cost. The Pump uses electricity generated by solar panels, is fed to solar pump controller (VFD) which converts DC to AC and also adjusts the speed and output power as required by the pump.

These systems are best alternatives in areas where there is no electricity or reliable power supply is not available. Solar powered water pumps can be extremely useful for farmers who work on small scale. Solar PV systems results in significant long-term savings and a small environment footprint compared to conventional power systems.





Fact File – Which makes us the best

- Sun Zone has been in the market from past 20 years developing excellent products in solar water heater and solar lighting system (Solar photovoltaic) and in other renewable energy making us more competent and has facilitated our growth even in this phase of tough competition.
- Our solar products are the culmination of excellent engineering, use of advanced technology with high quality materials manufactured at state-of-art infrastructure, providing our customer with high degree of satisfaction for products and services.
- We come up with customized solutions and to provide efficient solar product and services. We understand your requirements, identify appropriate products and do the complete installation, as per the customers need.
- Our solar products have highly efficient electrical components and system, we observe competent methods of integration during installation. This increases the system efficiency resulting in better energy savings.
- Our efficient team of highly skilled manpower ensures timely installation and servicing of solar system adhering to the procedures of international standards
- We provide longer warranty period for products. Our warranty period of one year gets extended to four more years on performance warranty against AMC.
- We have all major renewable energy products available under one roof. This facility helps our customer to choose and select the product according to their convenience.
- We are an ISO 9001 – 2008 certified company.
- We are certified by ISI (Indian Standard Institute) for Quality.
- We are MNRE (Ministry of New and Renewable Energy) approved company.
- We are DGS&D (Directorate General of Supplies and Disposal) registered company.
- We manufacture our products under the National initiative of “Made in India”.





Vision of Powering Infinity

We at **SUN ZONE** are passionate about contributing to a world, which does not depend on power from fossil fuels. Our aim is to accelerate the adoption of **solar technology** across the world to conserve our environment and provide an **environmentally friendly, sustainable and conflict-free power supply**.

Sustainable global economic development requires reliable, cost-effective and quickly scalable energy solutions. **SUN ZONE** is growing into a global high-tech company and was established to provide these solutions. We believe that solar power is now a mainstream, viable technology of 'today' enabling the move towards a **zero-emission power supply**. We seek to provide our customers high-value added solutions through building on our strong foundation in photovoltaic manufacturing and our commitment to innovation to drive the **efficiency, quality and profitability** of our products. We remain aggressive in our focus on innovation and cost but remain conservative in our implementation to ensure **SUN ZONE** products are a safe choice for our customers.

At **SUN ZONE**, we put our customers and partners in the center of our attention and treat them with **trust, respect and integrity**. While driving for world-class products, continually improving the quality and **environmental friendliness** of our products are at the core of **SUN ZONE** values. We are committed to comply with **international safety, environment and quality standards** at all times.



OUR CLIENTELE



“The only infinite power source that was free
to use all day & every day it is solar power.”



Sun zone

AN ISO 9001-2008 COMPANY

Regd. Off. & Works

SUN ZONE SOLAR SYSTEM INDIA PVT. LTD.,

1/4, Balagangadhara Nagar, Behind Kanyakumari School, Near Ambedkar Engg. Collage,
Mallathahalli, Bangalore - 560 056. Karnataka (INDIA)

T: +91 80 2321 4777 T/F: +91 80 2321 5645

E: sunzonesolar56@yahoo.co.in W: www.sunzonesolar.net