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Solar Water Heating Systems & Solar PV Technology



S V Marketing India Pvt Ltd.

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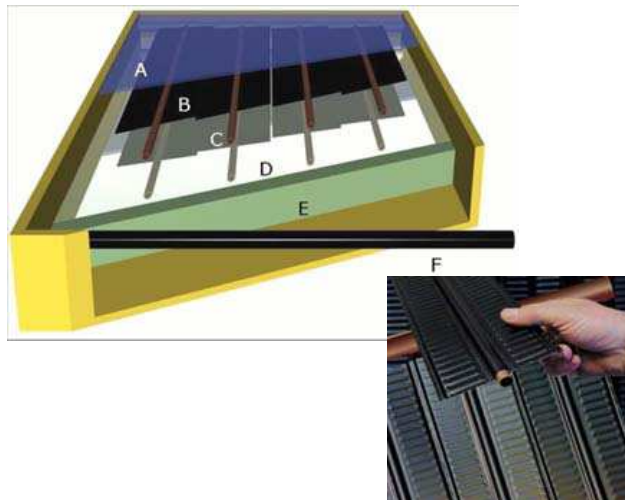
TATA BP SOLAR



Tata BP Solar: A joint venture between Tata Power and BP Solar with Rs 4700 million turnover (*the largest Solar Photo Voltaic Company in Asia outside Japan and the no.1 Solar Thermal company*) is fully equipped to be your one-stop solar solution provider, help achieve greater energy efficiency and collectively do our bit for the environment.

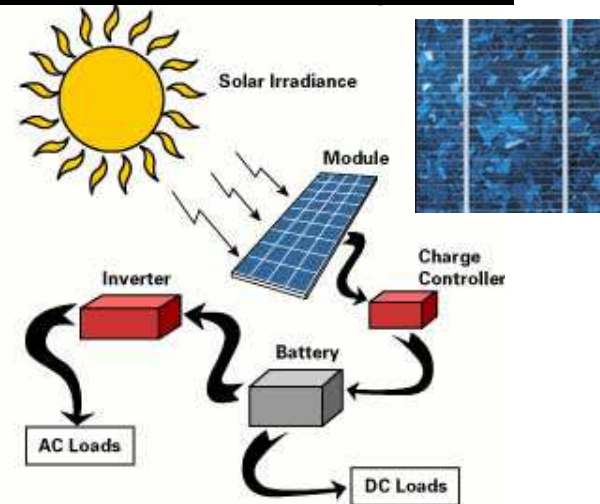
- **Tata BP Solar: Bringing the power of Sun into our Homes.**
- Tata-BP Solar India Ltd: A 100% Solar Company is involved in providing holistic clean and green energy solutions from remotest villages to contemporary residential and commercial buildings, industrial and sector specific applications. Sun is a massive source of **heat** and **light**. From the two energy sources we get two distinct solar technologies:

Solar Thermal System



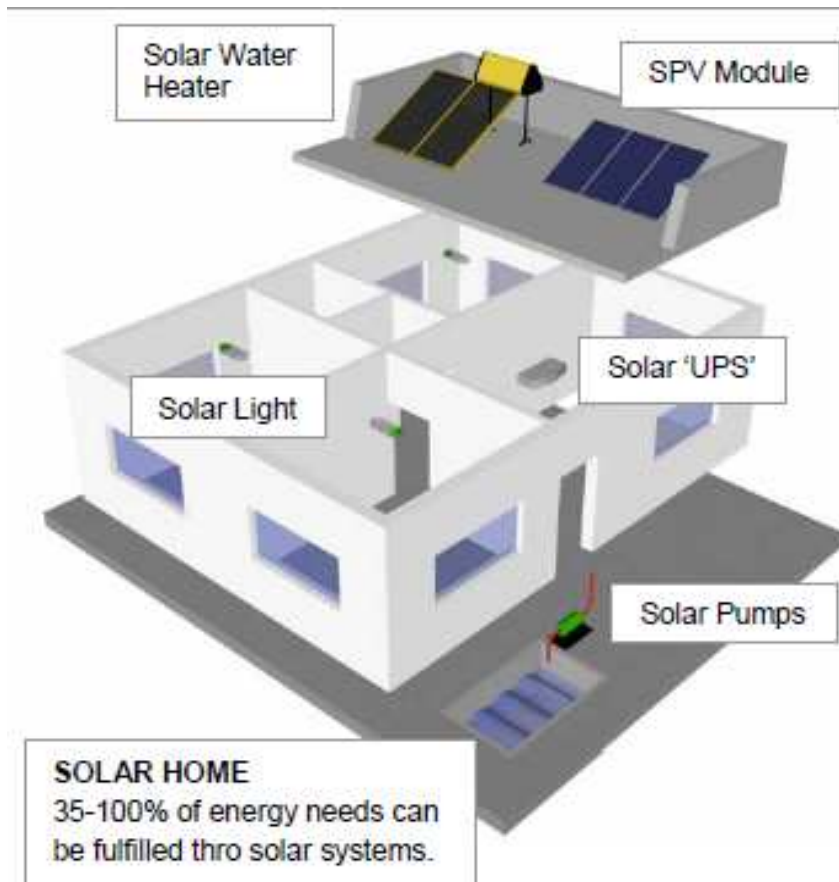
- Technology to heat water.
- Copper based technology.
- Black body absorption.
- Cost effective solution.
- Water heating panels are **‘SOLAR COLLECTOR’**

Solar Photo Voltaic System



- Converts sunlight into electricity.
- Silicon based technology.
- Electricity can be used to power lights, fans, PC, TV etc...
- The SPV panels are known as **‘SOLAR PV MODULES’**

Solar Solution for Homes



- Replace geysers with solar heaters.
- Reduce electric load/bills with solar pumps, lighting kits, etc.
- Solar power as back-up can avoid recurring fuel cost and pollution.

Solar Solution for Homes



Solar Home Lighting Solution
(Available in sets of 2 or 4 CFLs and fans)



Solar Water Heating Solution
(A 100 lt SWHS can save equivalent of 4.5 Units of electricity & heat water to 60C).



Solar Water Pumping Solution
(Capacity of 400/800 lpd over TDH of 30')



Solar Power Solution
(Supports 200W of load over 4 hours)

Solar Packaged Solutions:

Tata BP brand 'Vajra' and 'Zing' SWHS.

TBP Solar Water Heating System



Features:

- Available in 100, 200, 300 lpd capacity.
- High efficiency Copper collectors.
- SS, PUF insulated one of its kind Delta shaped tank for superior performance.
- Powder coated integrated aesthetic stand.

Tata BP brand: 'Tatadeep' Solar Lantern.

TBP Solar Lantern.



Features:

- Ideal 'first buy' for a solar product.
- Aesthetically designed and portable.
- CFL lights with 3-4 hours of operation.
- Dual charging facility: Solar or AC mains.
- Excellent solution during power cuts.

Solar Packaged Solutions:

TBP brand: **'Venus'** Home lighting system.

TBP Home Lighting System.



Features:

- Packaged solution: Solar module, battery, CFL luminaires, charge controller.
- Available in set of 2 or 4 lights.
- Provides 4 hrs of light for 1 day charging.
- Ideal solution for homes & small offices.

Tata BP brand: **'Ecogenie'** SPU for homes.

TBP Solar Powering Unit

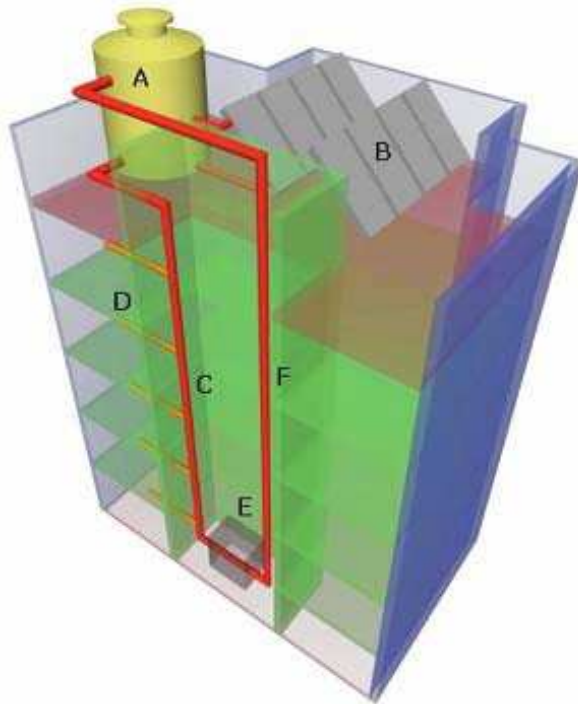


Features:

- Emergency power for home users.
- Dual charging thro Solar and AC mode.
- Supports 200 watt x 4 hrs in hybrid mode.
- Pure sine wave inverter with AC Charger.

Solar Water Heating Solutions

(For apartments, industrial applications, hospitals, hotels, hostels etc...)



Water provided by municipality: 125 l/day

- Drinking/Cooking: 5 lts.
- Washing/Flushing: 45 lts
- Bathing: 75 lts (2 baths/day)

Hot Water requirement: 25 lts/person/day

- Ideal system for hi-rise buildings, hotels, hostels, hospitals, pre-heating etc.
- System can be designed for any capacity building height and climatic condition.
- High level of sophistication and control systems possible based on requirement.
- Heat exchanger system for areas with poor water quality and high TDS.
- Provision of electric back-up.

Solar Water Heating Solutions

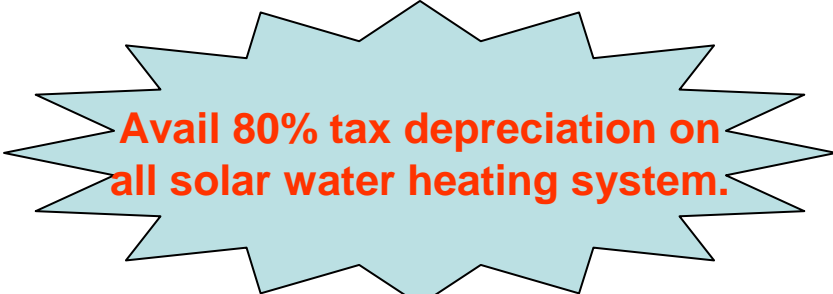
(For apartments, industrial applications, hospitals, hotels, hostels etc...)

Hot Water temperature achieved through Solar: 60C ($\Delta T = 35C$)

For specialized applications systems can be designed to deliver temperature upto 80C

To heat 100 lts of water: *(sufficient for typical family of 4)*

$$\frac{100 \times 1 \times 1 \times (60-25)}{861 \times 0.9} = 4.5 \text{ units/day}$$



Savings on Electricity Bill per Month:

Unit Rate	Rs 3.5	Rs 4	Rs 4.5	Rs 5	Rs 5.5	Rs 6	Rs 6.5	Rs 7
Savings	Rs 472.5	Rs 540	Rs 607.5	Rs 675	Rs 742.5	Rs 810	Rs 877.5	Rs 945

Equivalent energy required to heat 1000 lts of water from 25 to 60 8C:

- Gas: 5.5 kgs
- Diesel = 5.3 lts
- Firewood: 31 kgs

Solar Street Lights



Solar Street Light:

- ‘Plug and Play’ system.
- No cabling required & no recurring cost.
- Automated dusk to dawn operation.
- Theft-proof screws for greater safety.
- Withstand winds upto 200kmph.
- Corrosion resistant finish for extended life.
- Ideal solution for lighting streets, yards, campus, car-parks, gardens etc.
- Option of CFL,LED and SOx lamps.

** All TBP SPV systems are designed with 2-5 days autonomy to ensure that the system continues to deliver its rated energy even if there is ‘no sunshine’ for the rated number of days.*

Street Furniture and Solar Refrigerators!



Solar Powered Refrigerator:

- The perfect answer those seeking a solar powered refrigerator to store vaccines in rural health centers at remote villages.
- 50 lt capacity and WHO approved.
- 5 day autonomy* ensures 24x7 operation.
- Please email us for details if required for any specific refrigeration applications.



Solar Road Flashers:

- Amber and red LED flashers.
- Option of single or double aspect.
- Ideal for warning drivers about schools, hospitals, sharp curves, dividers, etc.
- Excellent media for sponsorship.
- Useful in large campuses, factories, yards, housing colonies, car parks.
- Also available: Road studs, arrow boards, divider warning lights and signal system.

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Solar Water Pumping Solutions:



Solar irrigation pumps have been a boon both to farmers & government in providing 'free power'.

Surface Pump Model 1 (SP 900):

- 1 HP DC Surface Centrifugal Pump
- Total dynamic head of 10m (30')
- Water discharge: 70,000 lts per day

Surface Pumps Model 2 (SP 1800):

- 2 HP DC Surface Centrifugal Pump
- Total dynamic head of 10m (30')
- Water discharge: 135,000 lts per day



Submersible Pump AC Model:

- 0.75 HP, rated power 1200/1800W
- Total dynamic head of 50m (165')
- Water discharge: 17/35,000 lpd

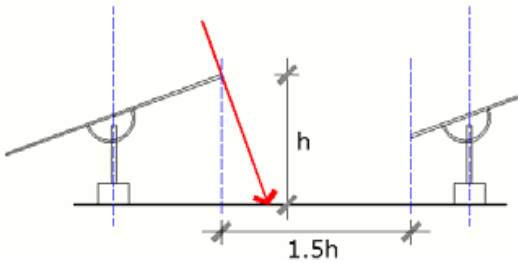
Contact Tata BP Solar for specific pumping applications & we will be glad to be of help



Lotus' Solar Water Pump:

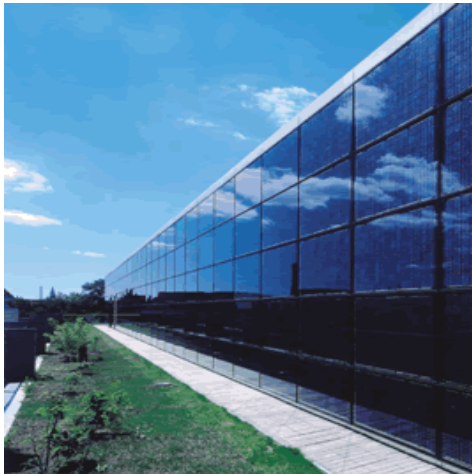
- Ideal solution for homes, primary, health centers, eateries, etc.
- Discharge head of 30' (G+1)
- Suction height of 10' (from sump)
- Pumping capacity of 400/800 lpd
- Packaged with its own solar module, long life solar battery and controllers
- High efficiency, low maintenance long life DC centrifugal pump.

Building Integration of Solar PV Systems



Roof Top Integration:

- Standard Solar PV modules are available in two distinct sizes:
 1. **80Wp: 1200 x 550**
 2. **160Wp: 1600 x 800**
- ‘Module mounting structures’ enable them to be installed on flat roofs or can be directly fixed on sloping South facing roof.



Wall Cladding:

- Similar to Aluminum cladding, opaque Solar PV modules can be mounted over suitable structural framing on South/SW façades (*active building element*).

Building Integration of Solar PV Systems



Transparent Modules and elements:

- Comparable to structural glazing, BIPV or transparent SPV solar panels can be fitted onto facades, atriums and skylights.
- Modules can be designed as architectural elements like fins, strip lighting, canopies, overhangs, *chajjas*, glass houses, etc.

Contact Details

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