

TESLA SOLAR CO.



www.doricdesignstudio.co/teslasolar

“SAVE ENVIRONMENT AND SAVE ELECTRICITY BILL”



Welcome to **Tesla Solar**

We at Tesla Solar Co. are Energy Consultant and Engineering, Procurement, Construction (EPC) for residential, commercial and industrial power. We understand our customer's energy consumption patterns and work out economically viable upon for switching to renewable energy sources. We also provide solar street lights, solar home lightning system and other solar products.

Tesla Solar Co. is committed to provide technically sound and economically viable solutions to our customers and have expertise to deliver project turnkey basis in solar power generation.



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Contribution As Solar Re-search Scholar

www.rroij.com/open-access/digital-mppt-interface-for-pv-module-ijareeie-2015-0404025.pdf



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{17 Years Of Experience}



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Digital MPPT Interface for PV Module

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ABSTRACT: A photovoltaic module is an array of photo voltaic cell when this module expose to solar irradiance, it yields electrical energy in the form of direct current. The source impedance of PV Module functionally follows module surface temperature and intensity of solar irradiance, varies with the position of sun that is ever changing due to tilt in the earth and its elliptical orbit. The maximum energy transfer to load from this PV module is only when load impedance attuned to Maximum Power Point (MPP) in I v/s V characteristic curve of the PV module. An interface needs between load (Solar-Inverter) and PV module. This Maximum Energy Transfer (MET) interface is in the form of Switch Pass regulator, conceive and control vide digital processor. The energy yield is highly efficient and smooth. It is low cost interface suitable for domestic and industrial use from low to higher end in the spectrum of utilisation.

KEYWORDS: Solar irradiance, Temperature effect, MET, Maximum Energy Transfer, PV Module, Digital Switch Pass Regulator, MPPT

I. INTRODUCTION

The function of a Photo Voltaic cell derives on the principle of photoelectric¹ effect, its phenomenon electron ejects from the conduction band because of solar irradiation absorption which have specific wave length of the specimen matter i.e. solids, liquids or gases. In a photovoltaic cell, sunlight strikes the surface of semiconductor material and some portion of the incident solar energy absorbs in the semiconductor material and rest reflect. The electron from valence band jumps to the conduction band only when absorb energy supersedes band gap of this material. The pairs of hole-electrons create in the illuminated region of this material and are now free to move in the conduction band. These free electrons force to travel in predetermine direction by the action of electric field in the PV cells. These free and flowing electrons attribute to current and presence of electric field attribute to the electric energy thus creates can be utilise through metallic connections from the top and bottom of PV cells. These cells makes a PV module.



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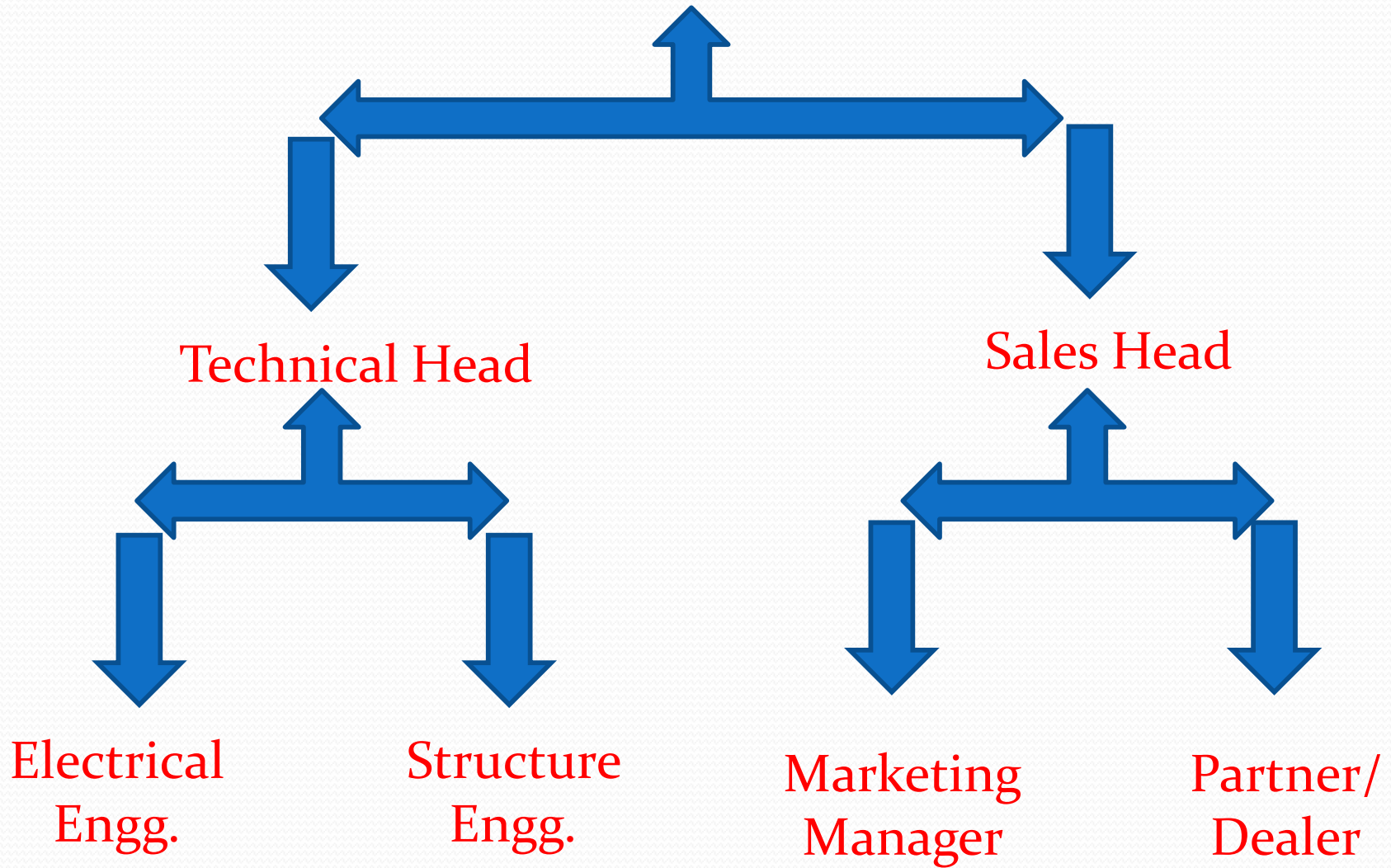
Our Areas Of Expertise :-

- Design and Engineering.
- Project Management.
- Supply of Modules Inverter, Batteries & Balance Of System.
- Erection and Commissioning.
- System Stabilization.
- Monitoring.
- Operation & Maintenance.



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Tesla Solar Team



SERVICES :-

- On Grid Solar System.
- Off Grid Solar System.
- Hybrid Solar System.
- Solar Water Pumps.
- Solar Heaters.
- Street Lights.



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ON GRID SOLAR ROOF TOP SYSTEM



ON GRID SOLAR ROOFTOP SYSTEM



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ON GRID SOLAR ROOF TOP SYSTEM

- **Definition:** On-Grid Systems are solar pv systems that only generate power when the utility power grid is available. They must connect to the grid to function. They can send excess power generated back to the grid when you are overproducing so you credit it for later use.
- **Benefits:** These are simplest systems and the most cost effective to install. These systems will pay for themselves by offsetting utility bills in 3-5yrs

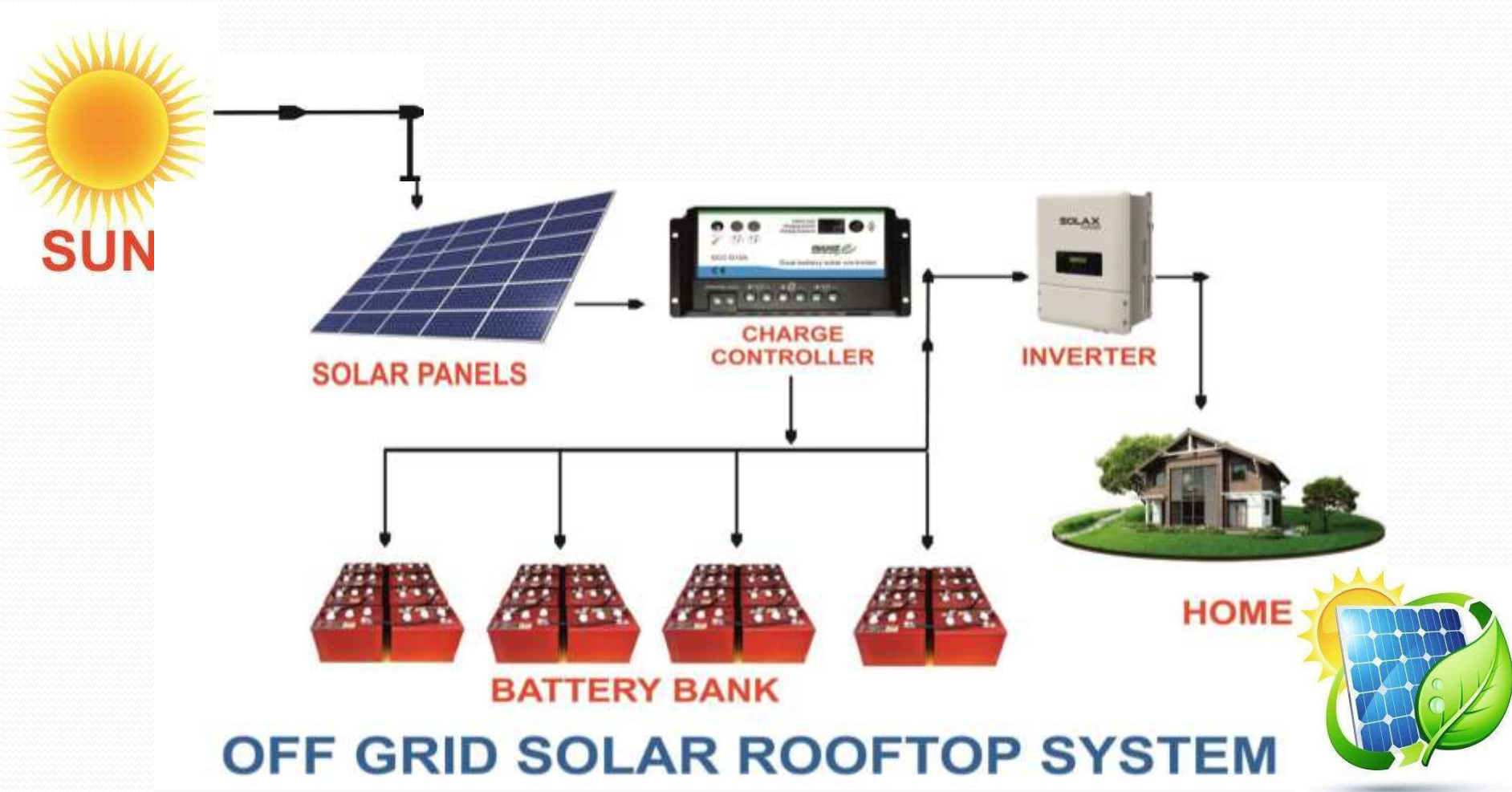
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OFF GRID SOLAR ROOF TOP SYSTEM



OFF GRID SOLAR ROOF TOP SYSTEM

- **Definition**: OFF-Grid System allows you to store solar power in batteries when the power grid goes down or if you are not on grid.
- **Benefits**: Provide power for your critical loads when you are not On-Grid.



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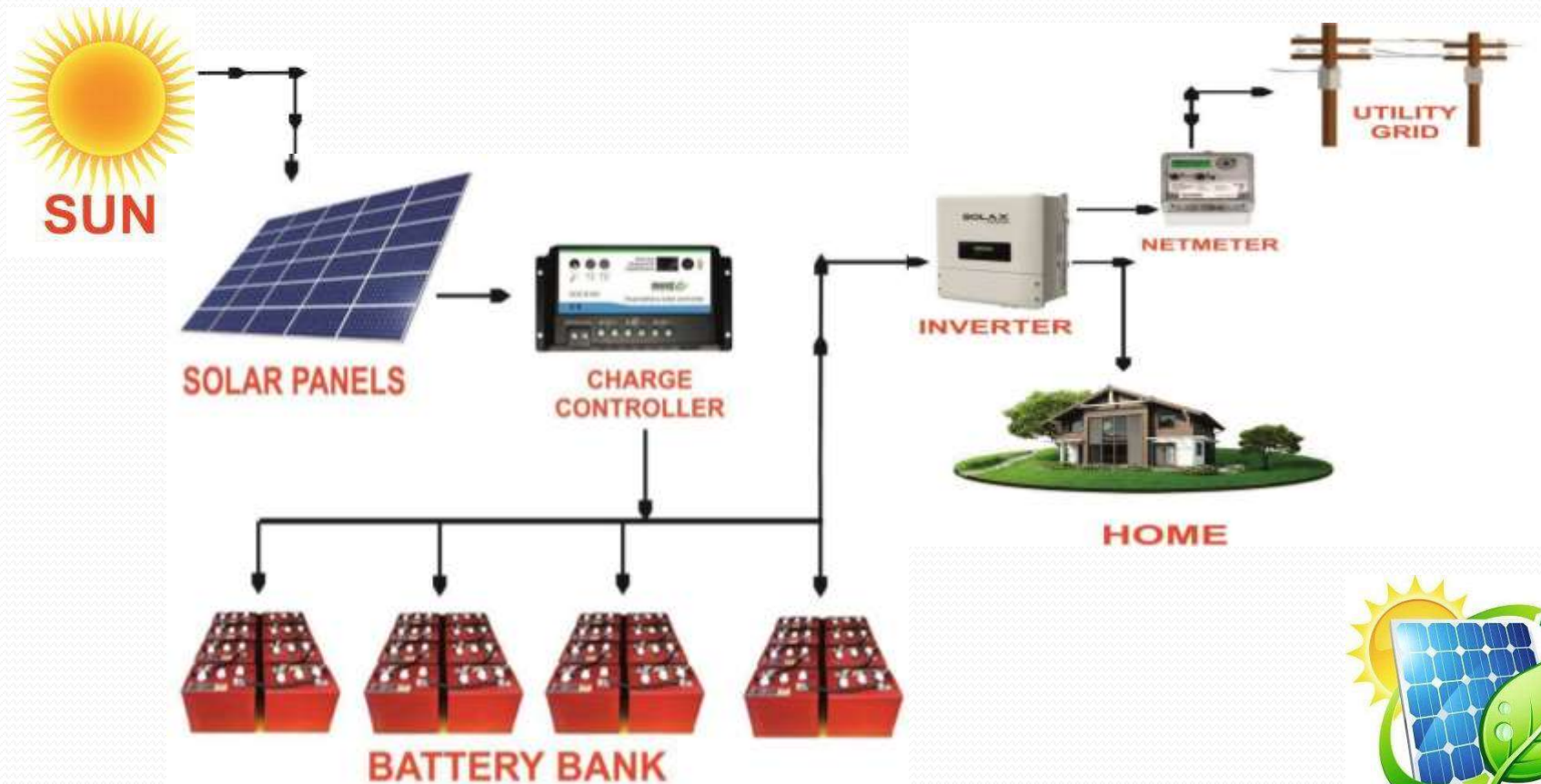
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HYBRID SOLAR ROOF TOP SYSTEM



HYBRID SOLAR ROOFTOP SYSTEM TESLA SOLAR

HYBRID SOLAR ROOF TOP SYSTEM

- **Definition:** Hybrid systems provide power to your grid and batteries both so incase if the grid is off it will switch to your batteries and will operate your system accordingly.
- **Benefits:** A mixture of ON-Grid & OFF-Grid allows you to maintain your electricity balance on both ways.



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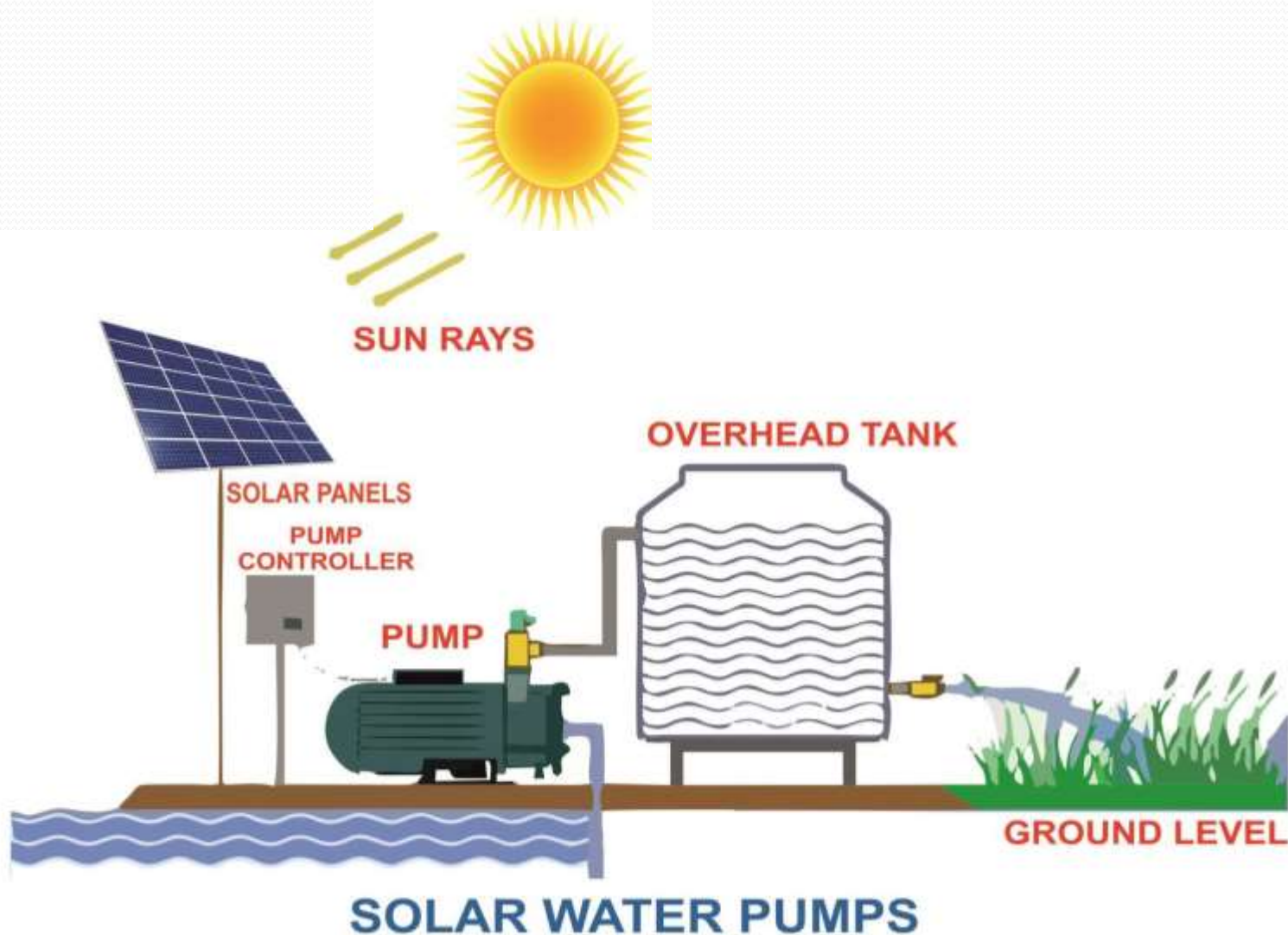
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SOLAR WATER PUMP SYSTEM



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SOLAR WATER PUMP SYSTEM

A **solar** powered **pump** is a **pump** running on electricity generated by photovoltaic panels or the radiated thermal energy available from collected sunlight as opposed to grid electricity or diesel run **water pumps**.



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SERVICES :-

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SOLAR HEATER SYSTEM



SOLAR HEATER



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SOLAR WATER HEATER SYSTEM

A **solar** water heater is a device which provides hot water for bathing, washing, cleaning etc. using sun radiation to convert in to solar energy. It is generally installed at the terrace or where solar irradiation is available and heat water during day time which is stored in an insulated storage tank for use when required including the day.



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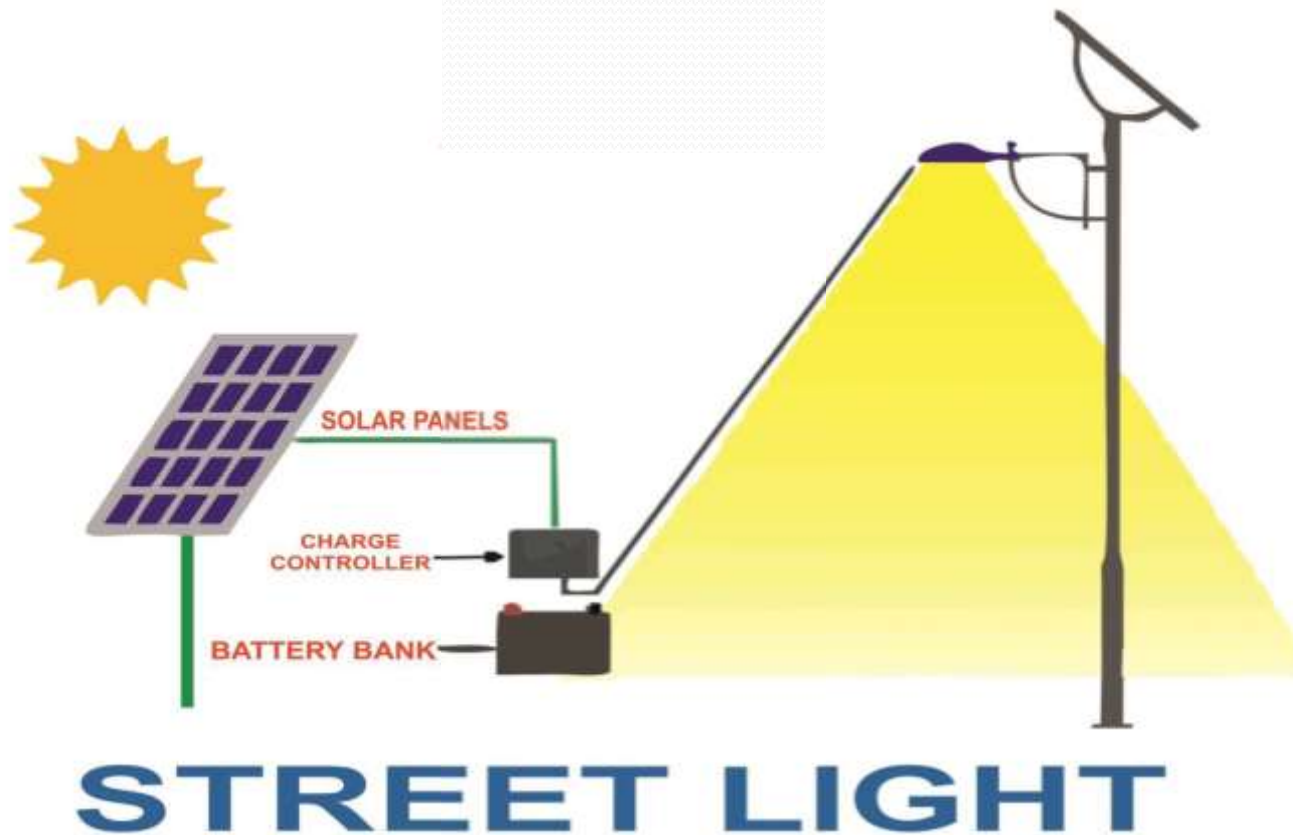
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SOLAR STREET LIGHT



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SOLAR STREET LIGHT SYSTEM

The OFF-Grid Solar(PV) LED Parking/Street Light system are stand-alone system. It means your system does not get any of its power sources from a utility company. In other words each individual light post and light is its own individual stand-alone system.



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MATERIAL REQUIREMENT

Solar Roof-top :-

Panels, Inverters, Cables, Connector, ACDB, DCDB, Fuse, MCB, SPD, Armored Cable, Lightning arrester, Earthing, Bus-Bar Box, Power switch & More.

Solar Water Pumps :-

Panels, Inverters, Motor pump(DC/AC), Controllers, Pipes.

Solar Street Lights :-

Panels, Battery, LED Light, Pole.

Solar Water Heater :-

Panels, Storage tanks, Pipes, Transformer, Controller.



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AFTER SALE SERVICE PLAN

*****Tesla Solar Provides 1 year Of Service Free.*****

Includes Services Are :-

Quarterly Visits.
Inverter Inspection.
Wiring & Installation Inspection.
Performance Verification.
Panel replacement if required.

Note :-

**Any new set-up /Shifting will be charged additionally.
**After 1 Year AMC Cost will be charged 1500₹/kw (AMC Cost).



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WARRANTY OF PRODUCTS

*****Tesla Solar Provides 5 year Additional Warranty For Inverters.*****

Panels :-

- * 25 Years Of Complete Performance Warranty.
- * Replacement Based On Performance.

Inverters :-

- * 5 Years Service & Replacement Warranty.



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HANDED-OVER PROJECTS

*****Tesla Solar Co.(APN) Installed Solar Projects.*****

* Hotel Delhi Darbar.	(Thane)	-	170KW.
* Hotel Fountane.	(Thane)	-	60 KW.
* Delhi Public School.	(Rajasthan)	-	130KW.
* Mitesh Industries.	(Vsai)	-	600KW.
* Gaurav residency Society.	(Meera Road)	-	25KW.
* KD Empire Society.	(Meera Road)	-	40KW.
* Gaoun Devi Mandir.	(Bhayander)	-	42KW
* St. Anthony School.	(Badlapur)	-	160KW
* 12 Row House.	(Nasik)	-	45KW
* Secondary School.	(Bhyander)	-	20KW
* Amber Society.	(Borivali)	-	25KW

Other Sold/Installed Products :-

* Street Lights.	-	163 nos.
* Solar Water Pumps.	-	14 nos.
* Solar Water Heaters.	-	26000 Ltrs.



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MATERIAL SPECIFICATION

PARTS/MATERIALS	MAKE	SPECIFICATIONS
PANEL	Prashant(APN), Vikram	325W Latest Bus-Bar technology with 72 cell series, High PID Resistance with advance anti-reflective coating glass MNRE approved product.
INVERTER	Delta/Polycab	Weather Proof.
WIRE	Polycab	Branded.
ACDB/DCDB	APN Make	
STRUCTURE	GI Frame	
LIGHTNING ARRESTER	True Power	
EARTHING	As MSEB Recomendation	
ARMOURED CABLE	As per MSEB	



TESLA SOLAR

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