



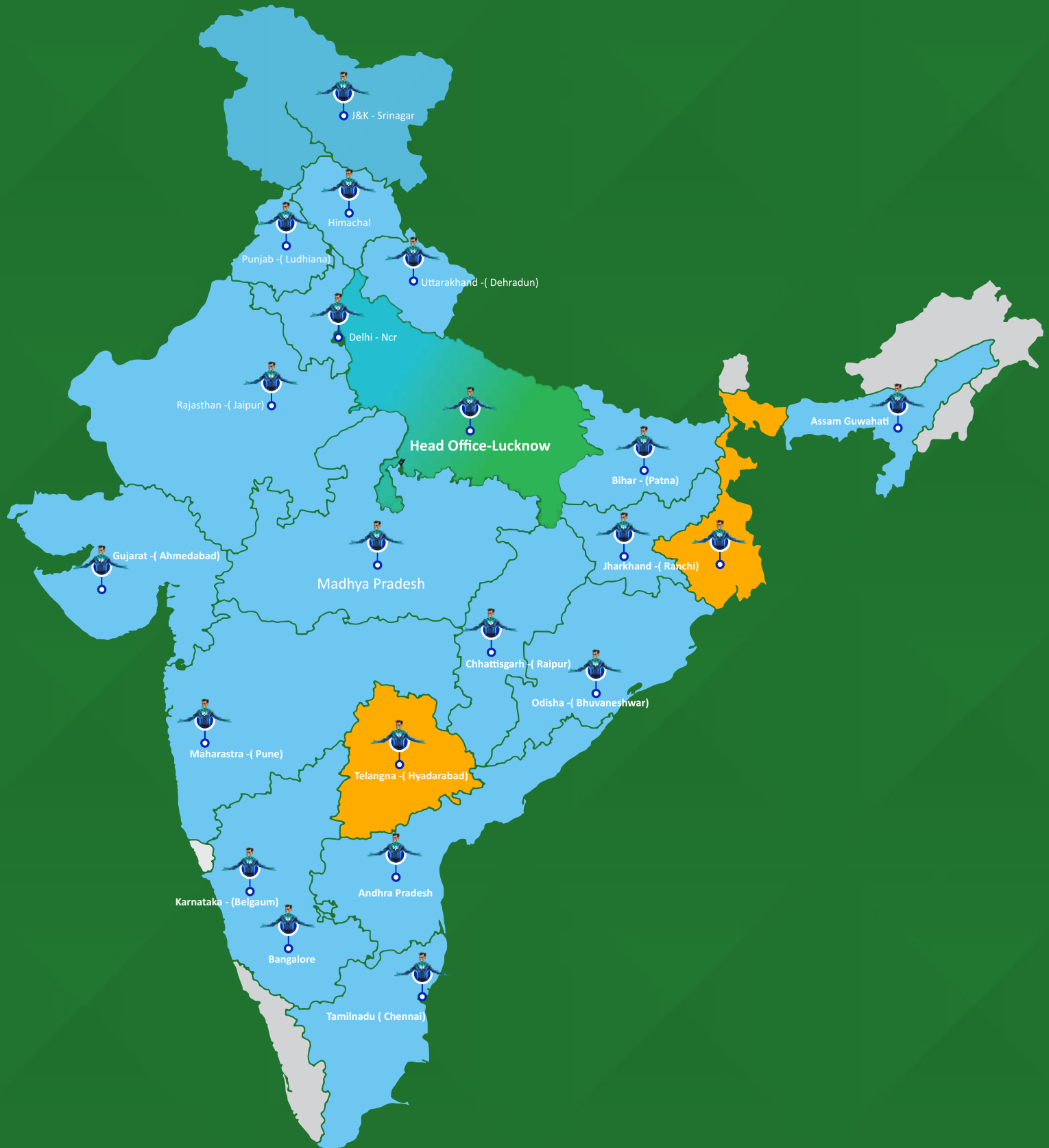
TRUE POWER LTD.

An ISO 9001:2015 Certified Company



**Go Solar - Go Green
Save Money - Save Planet**

Our Offices



ABOUT US

True Power Solar Solutions is one of the most admired and trusted solar power solution providers in B2B, B2C and B2G verticals in non-conventional and Renewable Energy Space. In our journey of the last 5 years we have provided several world class and innovative solutions across a wide range of consumers across pan India. Our solutions are modular, scalable, sustainable, affordable and acceptable across a wide array of clients from small residence owners to large industrial setups, from startups to big corporate, and from small commercial setups to giant Government turnkey projects.

We are an ISO certified organization with a proactive team of qualified engineers, quality inspectors, well trained skilled technicians and experienced field staff to flawlessly install and commission our solar power projects. We do have a specialized team for providing the best after-sales service (in case required) throughout PAN India.

Our Innovative and Versatile Solar Power Solutions, Reliable and Efficient products, Customer-Centric and Friendly Approach, Proper Installation and Impeccable Commissioning along with Timely Execution and 24x7 after-Sales Service has provided us a substantial edge over others and has made us stand apart from rest of the Solar Power Solution providers.



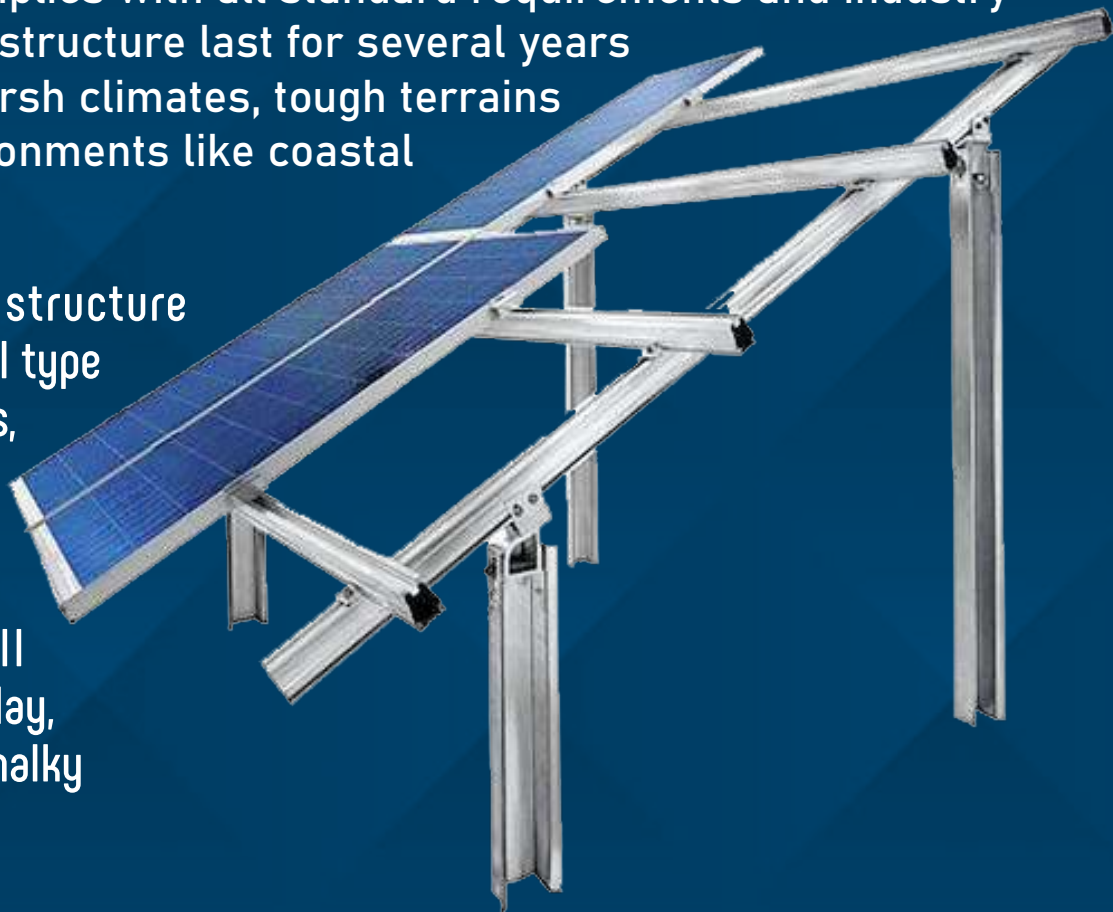
Our Products Portfolio

1. Pumping Solutions – HDG Structure (Approved) for Kusum Yojna, SECI Yojna & Complete BOS
2. Solar Power Solutions – HDG Structure & Complete BOS
3. EPC – HDG Structure & Complete BOS Along with Insallation
4. Other Products
 - On-Grid Rooftop Solar System
 - Off-Grid Rooftop Solar System
 - Grid-Tied with Battery Hybrid System

Pumping Solutions - HDG Structure for Kusum Yojna and SECI Yojna

Our HDG Structure for Kusum Yojna and SECI Yojana design is approved by IIT Delhi and complies with all standard requirements and industry practices to let our structure last for several years even in the most harsh climates, tough terrains and corrosive environments like coastal areas.

We have HDG structure readily available for all type of lands like plain lands, forest lands, water areas, wetland, barren lands, hills and mountains, with all types of soil like clay, sandy, silty, peaty, chalky and loamy soil.



Other BOS (Bill of System) for Pumping Solutions

We provide complete BOS for Pumping Solutions in compliance with National and International Standards.

- | | |
|---------------------------------|---------------------------|
| (1) Submersible Cable | (2) HDPE Pipe |
| (3) Earthing & Lightning System | (4) Other Plumbing System |

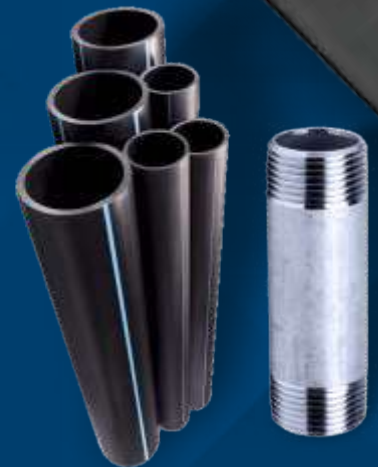
Submersible Cable

Submersible cables are meant for connections in water at varying depth and under differing degrees of water pressure. These cables are generally flat and are made up of high-quality material to bear different water pressure and are with high abrasion-resistant PVC sheath with resistance to grease, oil, and water. These are available in 2.5 Sqmm - 3 core and 4 Sqmm - 3 core and 4 core.



HDPE Pipe with SS Nipple 304 Grade

HDPE pipes manufactured from virgin superior grade HDPE (High-Density Polyethylene) with anti-bacterial properties, high resilience, high impact resistance and durability are provided for drawing water from ground or for transporting water from one place to another. These pipes are chemically inert, maintenance free, easy to install and highly flexible to be easily bent to 25 times of their diameter without crack.



Earthing & Lightning System

Maintenance free chemical earthing and conventional type lightning are included in the system to provide Protection from electrical lighting shocks and Electrical fire Hazards due to Thunder Lightning

Lightning Arresters capture the lightning during thunder storms and ground it to the earth through earthing to protect the electrical and electronics system from spikes or from even getting burnt. It also protects the structure from being damaged or completely getting burnt.



Other Misc Plumbing & Electrical Items

There are several miscellaneous items like UV Protected Cable ties, MC4 Connectors, Conduit pipes and Core Wire etc.

Our Solutions

Solar Water Pumping Solutions



DC Solar Pump Solutions



AC Solar Pump Solutions



Submersible Solar Pump Solutions



Surface Solar Pump Solutions





Solar Water Pumping Solutions

Solar Water Pumping Solutions run on the solar power to pump water from the ground or some bore well / well / pond etc.

Our Solar Water Pumping solutions are highly economical, environmentally friendly and maintenance free, as they utilize solar power to operate and run the pump rather than being dependent on conventionally generated power like that from gas, coal or diesel, which not only cost a lot but also leads to enormous noise and pollution.

The system works on electricity generated by PV(Photovoltaic) arrays which convert solar energy into electrical energy which runs the pump to draw water. The Photovoltaic array of solar cells is mounted on a structure facing the Sun. These solar cells collect the radiant heat of the sun and convert it into electricity. The solar panels are installed away from the shady areas to let them face Sunshine for most of the day throughout the year.



DC Solar Pump Solution

DC Solar Pumps are the most economical water pumping solutions. They don't require any battery or inverter in the system. The solar panels generate electricity in DC which is directly fed to the DC water pumps eliminating requirement of any equipment like inverter or battery in between.

These Solar Pumps directly utilize the power generated by the PV Solar cells. They don't have any inverter or battery in their system and therefore are the most economical solution in Solar water pumping solutions.

These types of Solar Solutions are best suited for areas where cost matters the most and where there is no demand of water during night hours. Otherwise, water is stored during day time in some water reservoir and the water is drawn from that storage as per requirement.

AC Solar Pump Solution

The AC Solar Pumps work on AC and require an inverter in the system to convert the DC generated by the solar cells into AC before being fed to the pump. These solar pumps require AC motors rather than DC motors.

In case there is a requirement for drawing water during off-Sunshine hours then batteries are required in the system.

Our AC Solar Pumping comes with the most efficient AC pumping motors to draw more water at low wattage consumption.

Submersible Solar Pump Solution

These Solar Pumps usually work with AC motors and are used to draw water from deep drilled bore wells. These may require a battery in case the submersible pump is required to be operated during off Sunshine hours also.

In case the pump has to be operated on a DC motor then the system doesn't require any inverter or battery in it. In such systems the pump keeps on drawing water throughout the day, which is generally stored in some water tank and later used as per convenience

Surface Solar Pump Solutions

The surface Solar Pumps are meant for areas where the water is shallow and easily available. Such pumps are intended to draw water from a maximum depth of 20ft. Otherwise these solar pumps are best used where the water is to be drawn from running streams, ponds, water tanks and small water reservoirs.

These solar pumps could be DC as well as AC depending upon the application.

Solar Power Solutions - HDG Structure

We provide customized HDG Structures manufactured at our own works for all types of Solar Power structures from Rooftop to Ground mounted in compliance with the latest industrial norms while meeting all National and International standards.

Our HDG structures are exclusively manufactured keeping in mind the most stringent environmental and climatic conditions. We have our own designing and simulating setup including latest CAD design software and the most competent designers and engineers to design precise structures as per the site requirements.



Other BOS (Bill of System) For Solar Power Solutions (Rooftop, Ground Mounted & Hybrid with Battery connected)

We provide complete BOS for Solar Power Solutions in compliance with National and International Standards like:

- | | |
|--|---|
| (1) Solar Panels | (2) Inverter |
| (3) Earthing & Lightning System | (4) ACDB (Alternating Current Distribution) |
| (5) DCDB (Direct Current Distribution) | (6) Solar Charge Controller |

Solar Panels

Solar Panels harness the Solar heat to convert it into the Electrical current which is used to run our electrical appliances



Inverter

Solar Power cannot be directly used to run our appliances. A Solar Inverter is connected between the Solar Panel and the system to convert the direct current (DC) from the solar panels into alternating current (AC) to make it fit for our use, as our electrical appliances usually work on AC.



Earthing & Lightning System



Maintenance free Chemical Earthing and ESE Lightning Arresters are included in the system to provide protection from Electrical Lightning Shocks and Electrical Fire Hazards due to Thunder Lightning. Lightning Arresters capture the lightning during thunder storms and ground it to the earth through earthing to protect the electrical and electronics system from spikes or from even getting burnt. It also protects the structure from being damaged or completely getting burnt.

ACDB (Alternating Current Distribution Box)

ACDB(Alternating Current Distribution Box) is installed between the solar inverter and the load to protect the load from electrical damages like spikes, high voltages, earth fault or any other unhealthy/abnormal condition arising in the system. It isolates and protects the system from being damaged. It usually includes SPD (Surge Protection Devices), Fuses, MCB, ELCB etc. depending upon the specific requirement of the site.



DCDB (Direct Current Distribution Box)



DCDB(Direct Current Distribution Box) is installed between solar panel and solar inverter and it protects the solar inverters from irratic voltage generated in the solar panels. They are also known as AJB(Array Junction Box) and usually includes DC Fuse or DC MCB and SPD.

Solar Charge Controller

Solar Charge Controllers are Voltage and/or Current regulators and regulate the voltage and current coming from the solar panels to the battery. They protect the batteries from being over charged and prevent them from discharging through the solar panel array at night.

Solar Charge Controllers are of two types, with PWM Controller and with MPPT Controller.

Solar Charge Controller – With PWM (Pulse Width Modulation) Controller

Solar Charge Controller with PWM Controller draws current out of the panel at the battery voltage. Such controllers are best suited for smaller systems where the efficiency of the system is immaterial as in the case of trickle charging. For such small systems controllers with PWM are the most economical and low-cost option.

Solar Charge Controller – With MPPT (Maximum Power Point Tracking) Controller

Solar Charge Controller with MPPT controller draws current out of the panel at the Panel maximum power Voltage. These controllers are best suited for larger systems where even harvesting additional 20% or more energy is worthwhile. These controllers are usually used in applications where the solar array voltage is substantially higher than the battery voltage.

Solar Rooftop Solutions

On-Grid Rooftop Solar System

Grid Tied With Battery Hybrid



Off-Grid Rooftop System



On-Grid Rooftop Solar System

On-Grid Solar systems, also known as Grid connected systems are directly connected to the grid. The user consumes electricity as per his requirement and the excess power generated is fed to the utility grid via 'net-work electrical meter' to record the number of units fed to the grid.

This 'net-work electrical meter' is different from the utility meter which records the state electricity power consumed by the user.

The owner receives credit for the number of electricity units fed to the grid.

The regular state electricity bill of the consumer is generated after deducting the number of units transferred to the grid. In case the number of units fed to the grid is more than the number of units consumed in a year, the consumer gets paid for it.

Such systems are best suited for areas where utility power is generally available and state has a policy for buying excess power generated by the consumers.

We provide all scales of On-Grid Rooftop Solar Systems for all geographies and for all types of roofs from flat to slant.



Off-Grid Rooftop Solar System

Off-Grid Solar Systems are independent Solar systems and are not connected to the grid. They use batteries to store solar energy generated during day time. This stored electricity can be used at any point of time, irrespective of availability of Sun-shine at that time.

In case the power is to be utilized only during Sun-shine hours then there is no need for batteries. Batteries are utilized only if the electricity is to be used during off Sun-shine hours.

Such Off-Grid Solar Systems are best suited for remote areas and in areas where either one cannot rely on the grid power or grid power is not available at all. Nowadays these Off-Grid Solar Systems have found wide application in traffic lights, remote Wi-Fi cameras and in remote hilly and mountain areas. They are also preferred in areas where grid electricity is too costly and it is better to go solar and generate one's own power and get rid of fat electricity bills.

We provide all scales of Off-Grid Rooftop Solar Systems for all geographies and for all types of roofs from flat to slant.



On-Grid Rooftop Solar System



Off-Grid Rooftop Solar System



Grid-Tied with Battery – Hybrid System

The Hybrid System is connected to the Grid along with having a battery in the system to store electrical energy while it is not being consumed by the consumer. However, when the battery is completely charged the generated power is fed to the grid and the consumer is paid for the number of units fed to the system.



EPC – HDG Structure & Complete BOS Along with Installation

We provide complete EPC Solutions with HDG Structures manufactured at our World-Class Manufacturing plants. The 'Balance of System' material is procured from the quality suppliers with a proven track record of supplying material as per the specifications within stipulated time. We have qualified CAD Designers and engineers to provide all types of customized HDG structures as per requirements. We do design structures as per the site requirements, wherein drawings are not available for the type of structure required.



Electrical Solar Cable & PV Wire

Electrical Solar Cable

Our Solar Electrical Cables are exclusively built to survive tough environmental and outdoor conditions. Usually they are made up of two wires wrapped together in a tough protective sheath. Cables with four to five wires encapsulated in a protective covering are also available and are used for specific applications.

Depending on the number of wires encapsulated these wires are commonly available as

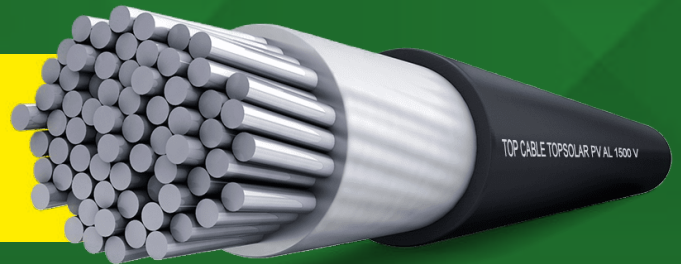
(a) Solar String Cables (b) Solar DC Cables (c) Solar AC Cables

Our Solar Cables are manufactured with high conductivity conductors and high heat resistant outer sheath to let them efficiently and effectively perform in rigorous outdoor conditions without fail. Our cables are built to withstand UV radiation and are manufactured to flawlessly work for years.

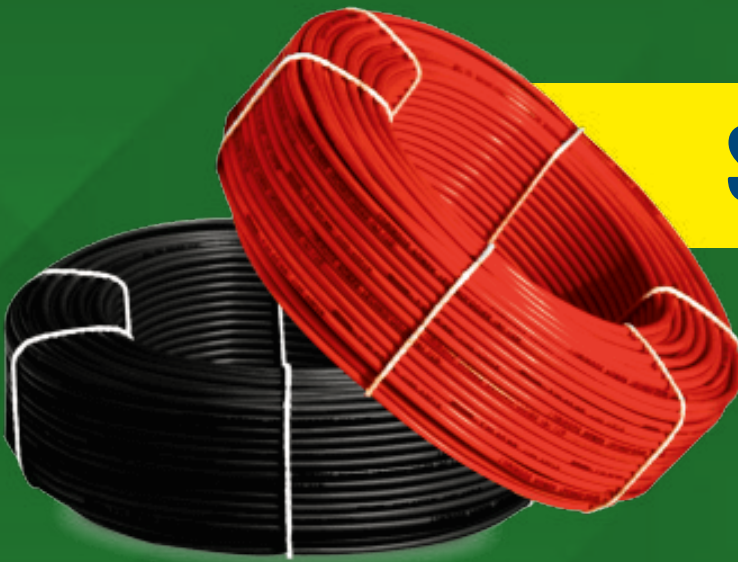
Electrical PV Wires

Our Electrical PV wires have superior sunlight resistance and low-temperature flexibility. These are manufactured with a thicker insulation or jacket, and have a proven level of flame resistance. These are single conductor wires and are used to connect solar panels in the solar panel array with each other, and to finally connect them to the point of collection of the electrical current, which are usually batteries.

Solar String Cables



Solar DC Cables



Solar AC Cables



Our Manufacturing

We have our own world-class manufacturing setup equipped with the latest machines, high-tech quality lab and well established R&D center. We seamlessly manufacture complete balance of project material from complete structure to small accessories. We procure best quality material from world-class material suppliers.



Our Social responsibility – Making planet a better place to live

We consider it our prime responsibility to educate and equip people to harness non-conventional solar energy, which is clean power without any greenhouse gas effect or any other harmful emission. We are pledged to provide access to all to adopt Renewable Energy and work for lowering carbon footprints and making the planet a better place to live in.

What we exactly do – Complete execution

We execute complete Solar Power Solutions from designing to manufacturing and from selecting right solution to picking the best suited Solar Panels depending on the specific site conditions and project needs. We are a System Integrator and execute complete projects. What we don't manufacture, we procure from well established suppliers. This flexibility allows us to go for a lot of permutation and combination to let us meet our clients' needs and expectations by delivering them exactly what they are intending for.

Our Uniqueness – Future ready execution

We are proud of adopting future ready App based methodologies to provide our clients prompt response, quality execution, timely service and complete flexibility to adapt ourselves as per the changing dynamic needs of our clients. This app keep us connected to our clients 24x7 and lets us respond immediately to their requirements.

Our strength - Executing Solar Power Projects

Our forte of executing and commissioning projects across a wide range of terrains from hill stations to deserts and from dry lands to rainy areas has let us build a strong execution team, which is competent enough to execute projects in any nook and corner of the country without hassles.



Why is the world crazy to go Solar ?

The Solar Power Solution has innumerable benefits and is a great boon for mankind rather it is a great boon for the planet itself, as along with generating electricity it does help in controlling the Carbon footprints also. Here are a few of the points worth considering.

1. These are best solutions for the remote areas, where state utility Electrical power is not available.
2. Being environmentally friendly, these are preferred choices in highly polluted areas to keep a tab on pollution. The photovoltaic cells neither leak nor do they emit any toxins or fumes like diesel and petrol generators.
3. The Solar Power Solutions are economical with nil operating cost and have much longer life in comparison to conventional power generating solutions.
4. These systems are a big relief for the Government and other authorities as they provide an alternative to install power generation systems in those areas where the number of consumers are substantially low, and it is neither viable to install power systems for such a fewer number of people and nor to incur in transmission infrastructure cost, to get power from far off power generating stations.
5. The solar power systems are completely noiseless and work silently without making any sort of noise or disturbance.

Why is India gearing up to become Solar soon ?

Today, India is dependent upon conventional resources like coal, diesel, petrol etc. to generate electrical power. These resources are about to exhaust in the next few years. No wonder the day is not far, when either the entire country would be eclipsed by 12-14 hours of daily power shedding or the price of power will shoot to the extent to go beyond the reach of an ordinary man.

To tackle such a grave situation the Govt. has decided to go solar and is encouraging all from a common man to Corporates to immediately install solar panels and become self-reliant in electrical power. The Govt. is expecting all citizens to generate enough power to not only meet their requirements but to also feed the grid with the extra power they are generating, so as to support the utility in power generation and supply power to those who are under privileged.

This will not only help people to get rid of their regular Electricity bills but will also help them to generate extra revenue by feeding extra power generated to the grid.

The Government has a policy to pay for the extra units generated and fed to the grid.



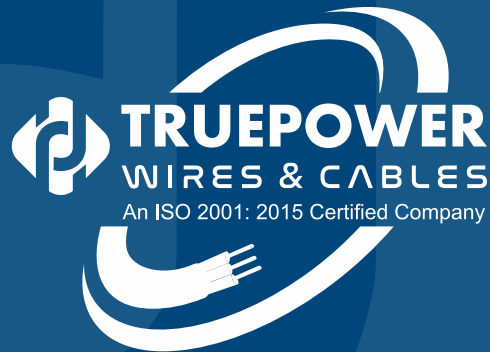


TRUE POWER LTD.

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CCI Transformer Pvt. Ltd.



An ISO 2001: 2015 Certified Company



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