

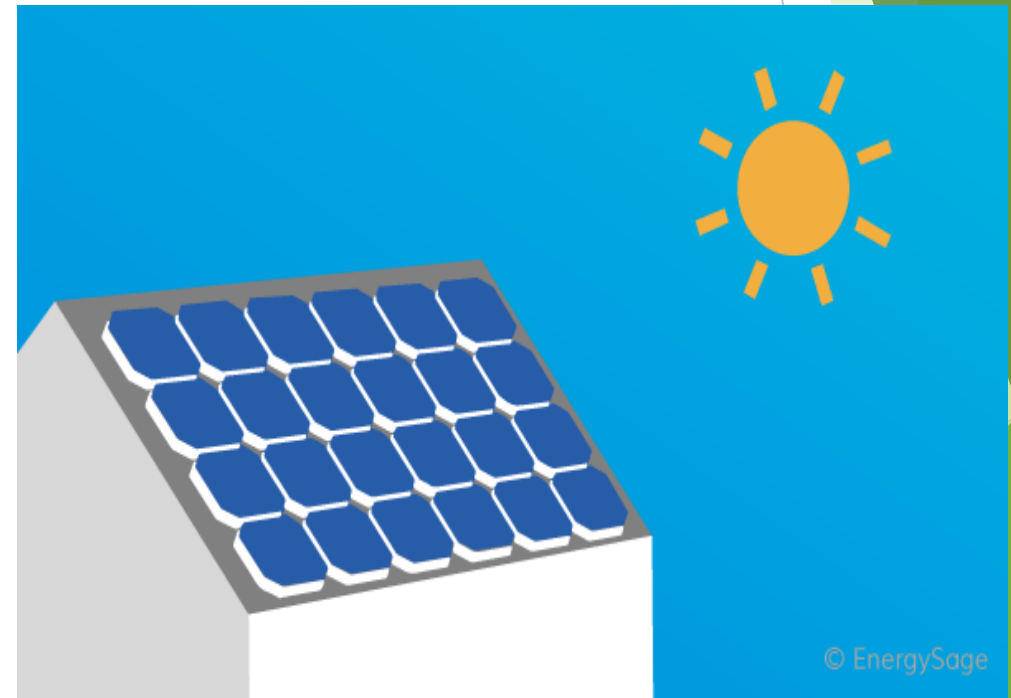
The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the left and right sides of the frame, creating a modern, clean aesthetic. The central area is white, providing a clear space for the text.

Solar Energy

Sustainable Source of Producing Electricity

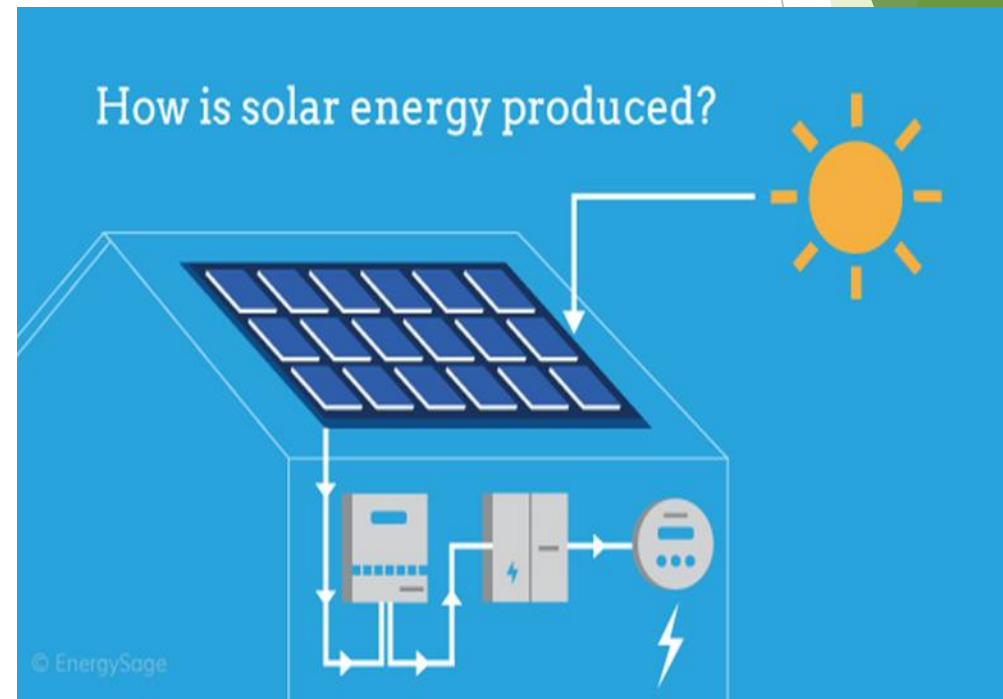
What is Solar Energy?

- ▶ Energy generated from sunlight to power the electrical equipment is commonly referred as ‘Solar Energy’.
- ▶ A ‘Sustainable Source’ considered as the most viable alternative to coal and oil fired generators.



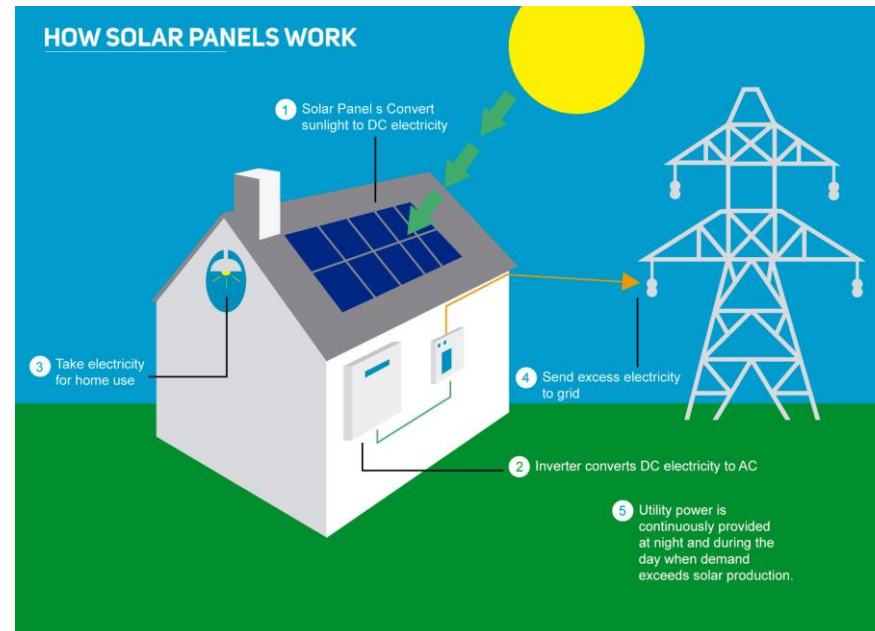
How is Solar Energy Produced?

- ▶ Converting sunlight into electricity by using the following equipment
- ▶ Solar Panels
- ▶ Inverters
- ▶ Batteries
- ▶ Facilitators (Meters, Safety Panels, Monitoring System etc.)



How do Solar Panels work?

- ▶ Solar panels actually comprise many, smaller units called photovoltaic cells which convert sunlight into electricity.
- ▶ Photovoltaic cell is basically a sandwich made up of two slices of semi-conducting material, usually silicon.
- ▶ It works by allowing photons, or particles of light, to knock electrons free from atoms, generating a flow of electricity.

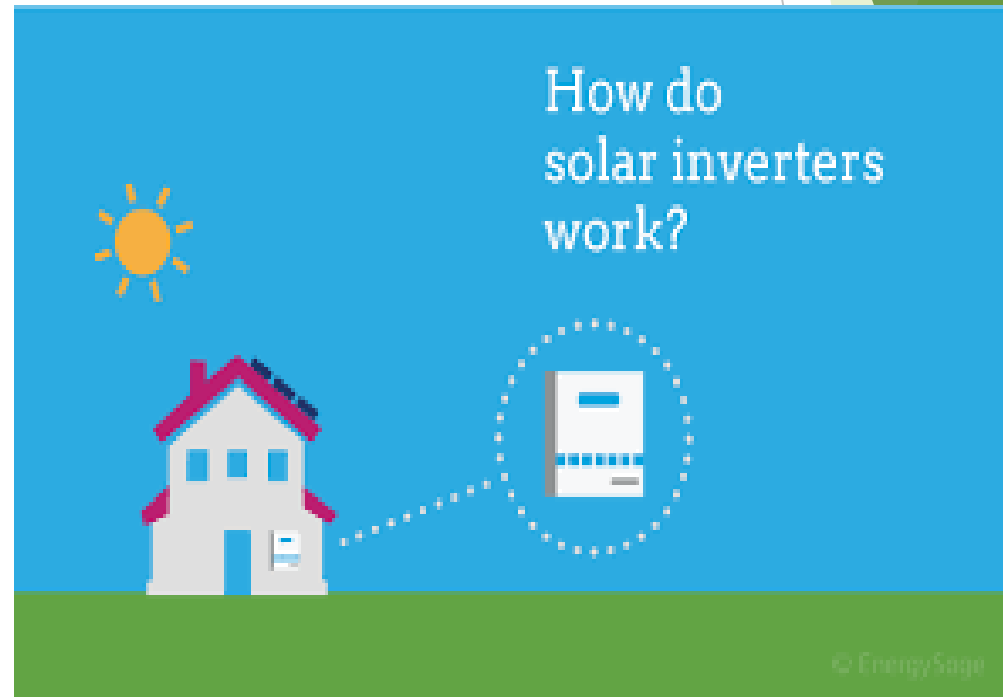


Conversion of Solar Energy to Electricity

- ▶ To work, photovoltaic cells need to establish an electric field. Much like a magnetic field, which occurs due to opposite poles, an electric field occurs when opposite charges are separated. To get this field, manufacturers "dope" silicon with other materials, giving each slice of the sandwich a positive or negative electrical charge.
- ▶ Specifically, they seed phosphorous into the top layer of silicon, which adds extra electrons, with a negative charge, to that layer. Meanwhile, the bottom layer gets a dose of boron, which results in fewer electrons, or a positive charge. This all adds up to an electric field at the junction between the silicon layers. Then, when a photon of sunlight knocks an electron free, the electric field will push that electron out of the silicon junction.

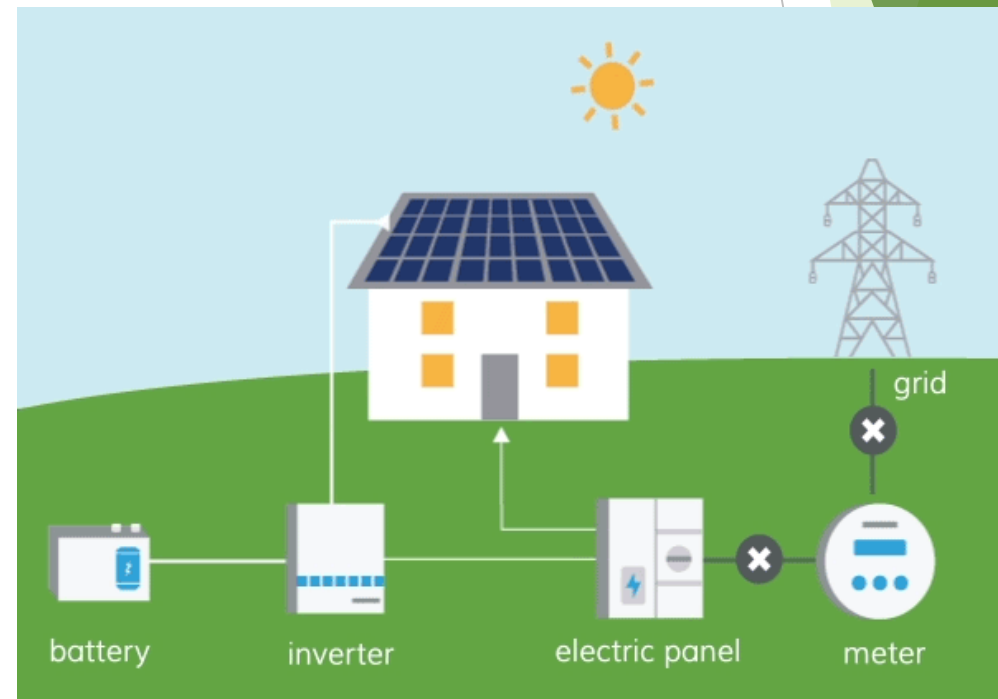
How do Solar Inverters work?

- ▶ They convert the electricity your solar panels create into a form that can be used by the appliances, lighting, and other equipment.
- ▶ When the sun shines on your solar photovoltaic (PV) system, electrons within the solar cells start to move around, which produces direct current (DC) energy.
- ▶ It takes the DC energy and turns it into usable AC energy.



How to Store Solar Energy?

- ▶ Solar batteries store energy produced by your solar panels for later use.
- ▶ If your solar panels are producing more electricity than you need, the excess energy goes towards charging the battery.
- ▶ When your solar panels aren't producing electricity, you can draw down the energy you stored earlier in your battery for night use.



How does Solar Energy benefit the environment,
your health and your wealth?

