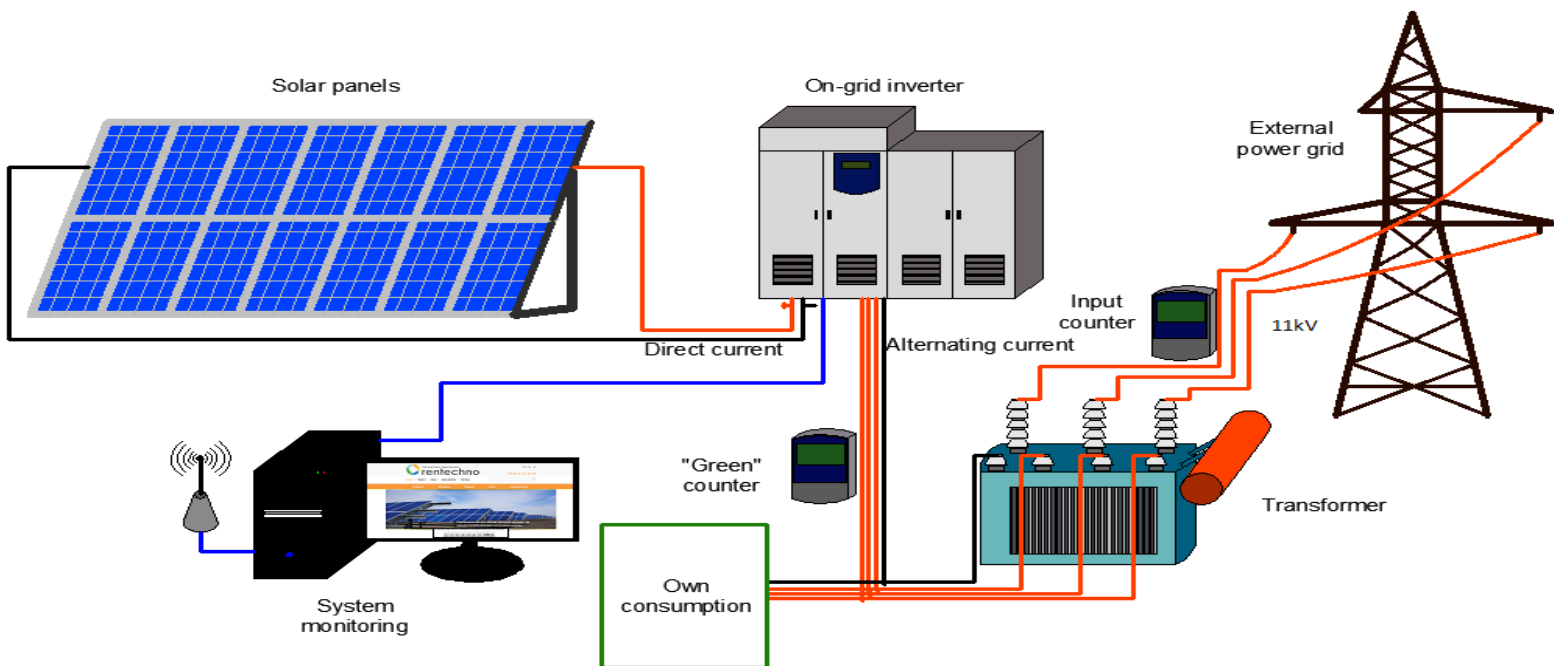


## GRID CONNECTED SOLAR POWER SYSTEM.

A grid-connected photovoltaic power system, or grid-connected PV system is an electricity generating solar PV system that is connected to the utility grid. A grid-connected PV system consists of solar panels, one or several inverters, a power conditioning unit and grid connection equipment. They range from small residential and commercial rooftop systems to large utility-scale solar power stations. Unlike stand-alone power systems, a grid-connected system rarely includes an integrated battery solution, as they are still very expensive. When conditions are right, the grid-connected PV system supplies the excess power, beyond consumption by the connected load, to the utility grid.

In grid connected rooftop or small SPV system, the DC power generated from SPV panel is converted to AC power using power conditioning unit and is fed to the grid either of 33 kV/11 kV three phase lines or of 440V/220V three/single phase line depending on the local technical and legal requirements.



These systems generate power during the day time which is utilized by powering captive loads and feed excess power to the grid. In case, when power generated is not sufficient, the captive loads are served by drawing power from the grid. The concept of rooftop solar is based on the scale of the PV plant rather than the fact whether it is situated on a roof/terrace or not.

## **BENEFITS FROM THE GRID CONNECTED SOLAR SYSTEMS:**

- **Low Gestation Period**
- **Lower Transmission and distribution losses**
- **Improvement in the tail-end grid Voltages and reduction of system**
- **Long term energy and ecological security by reduction in carbon emission**
- **Better Management of daytime peak loads by utility**
- **Abatement of about 60million tones of CO<sub>2</sub> per year over its life cycle**
- **Utilization of available vacant roof space.**

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