

PROFESSIONAL TRAINING REPORT
Sathyabama Institute of Science and
Technology (Deemed to be University)



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

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Certificate OF INDUSTRY INTERNSHIP

This is to certify that

RAGHUL S

Studying **3rd Year, B.E, EEE** in **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY**

has successfully completed the Industry Internship Programme at VATIO Energy India Pvt Ltd, Chennai
through Online from 21st July to 05th August 2021 in the area of
"Solar Photovoltaic system & its Design Practices"

Best wishes from VATIO Energy for future endeavors !

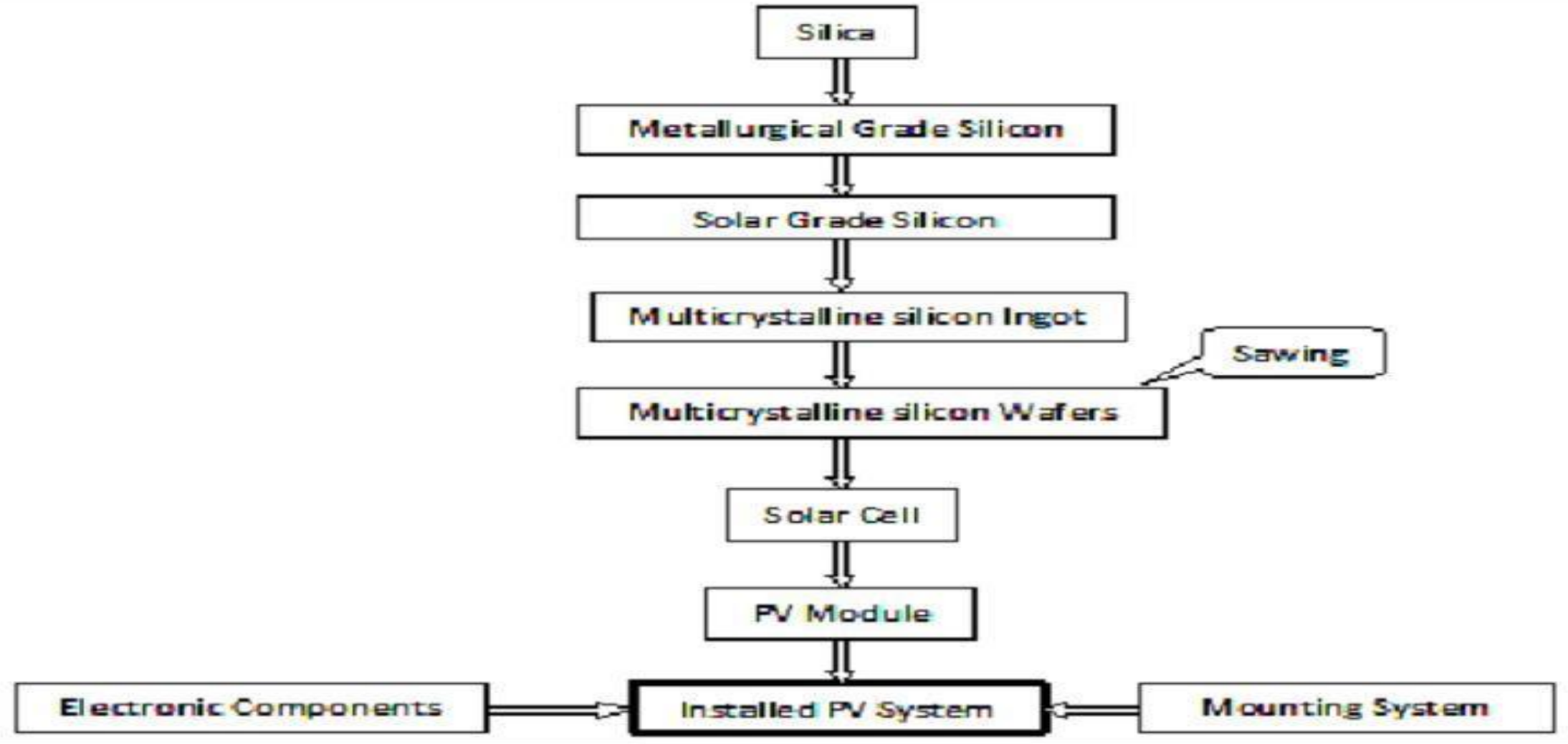
G.Rajaganesan, Director – Technical
VATIO Energy India Pvt Ltd.



05th August 2021

Date

Solar cell technology according to materials

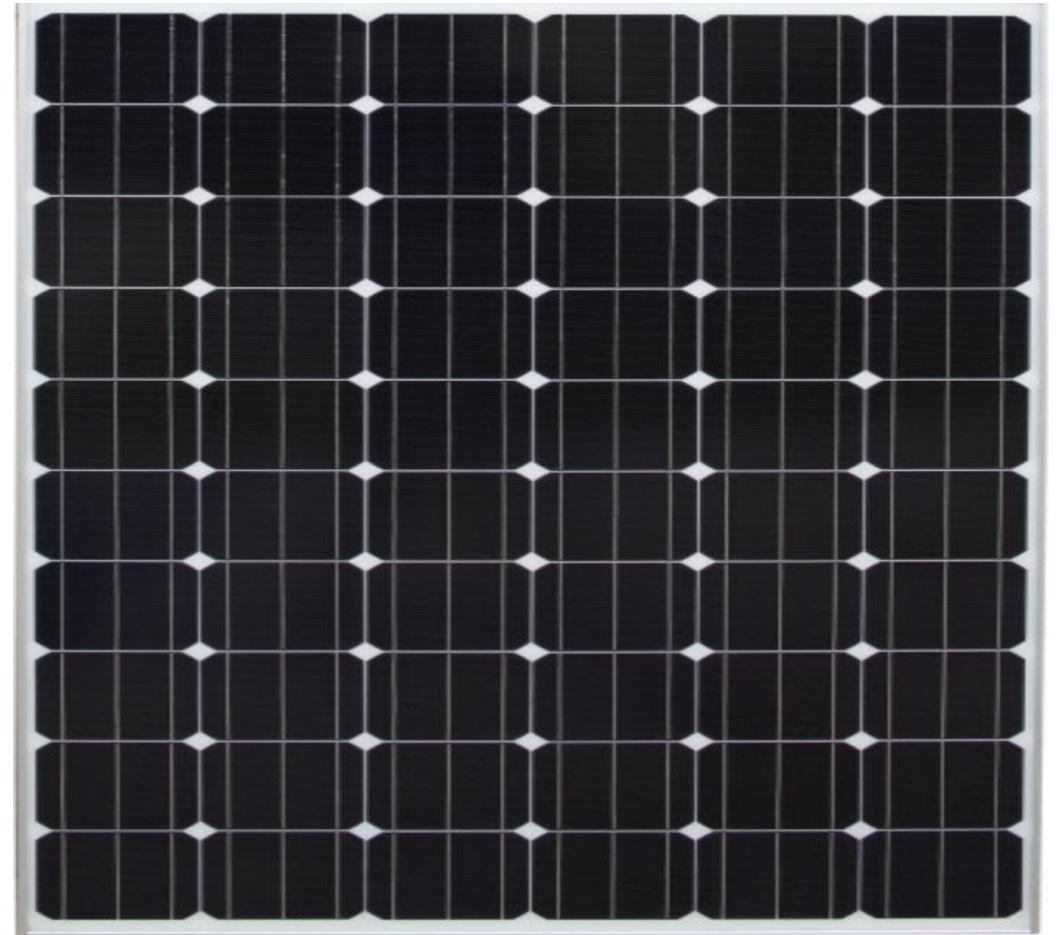


Solar PV Arrays:

- **Mono crystalline pv module**
- **Poly crystalline module**
- **Amorphous thin film module**
- **Multi junction amorphous**

Mono crystalline pv module

Mono crystalline pv cells belonging to the first generation of pv cells are made from a single crystal in the form of highly pure molten silicon usually crystalline silicon (c-si).

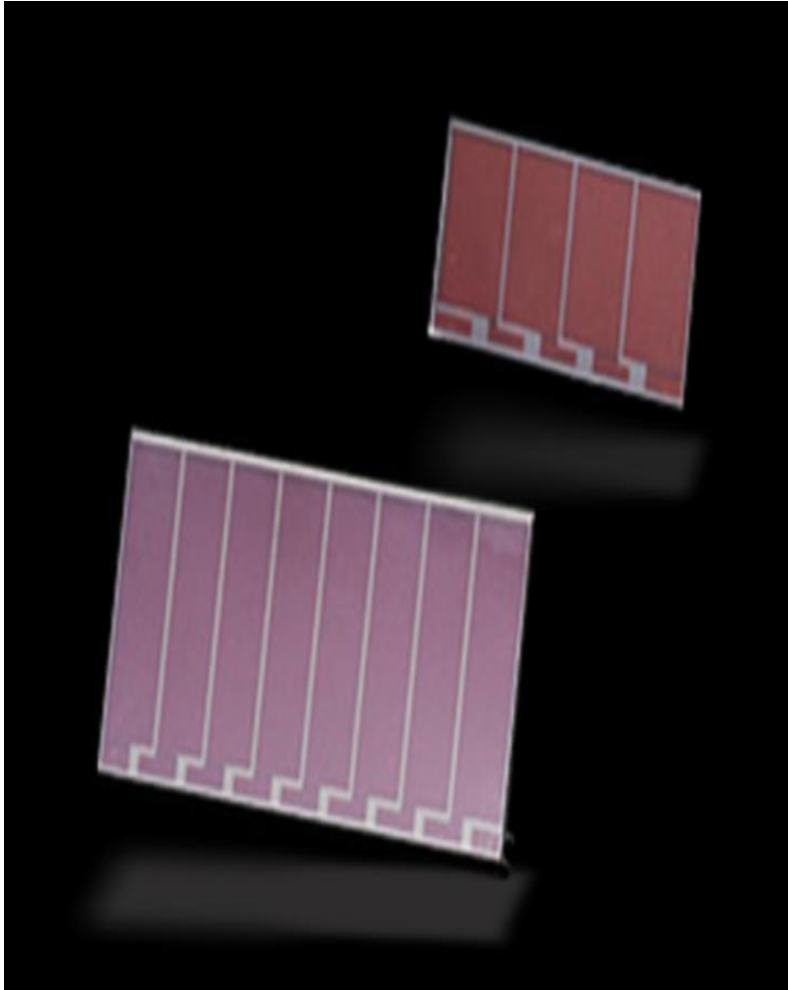


Poly crystalline pv module

Poly solar panels are solar panels that consist of several crystals of silicone in a single pv cells.



Amorphous thin film module



Amorphous silicone solar cells are the most well-being developed thin – film solar cell.

Multi junction amorphous



Multiple layers increase number of photons
Whose band gaps are matched. (Each part of
Cell tailored to part of visible spectrum).

Silicon alloy with carbon; increases band gap:
Better response to blue light.

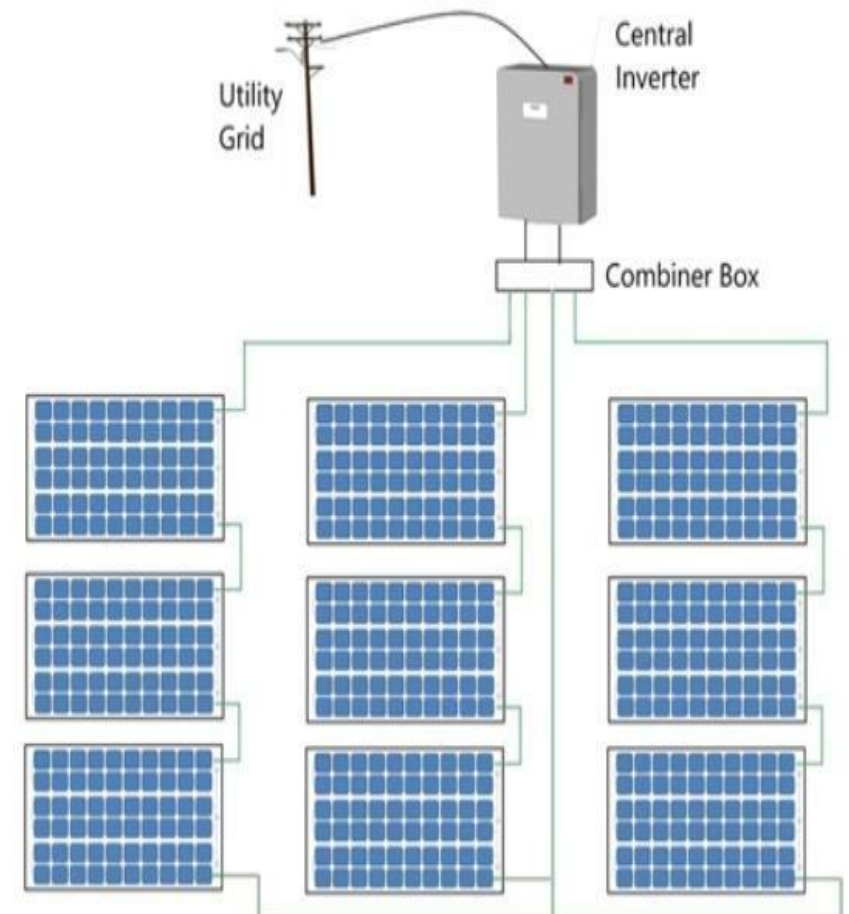
Silicon alloy with germanium: decreases band
Gap: better response to red light.

Function of the inverter in solar pv

- 1. Standalone inverter**
- 2. Micro inverter**
- 3. String inverter**
- 4. Central inverter**

Standalone inverter

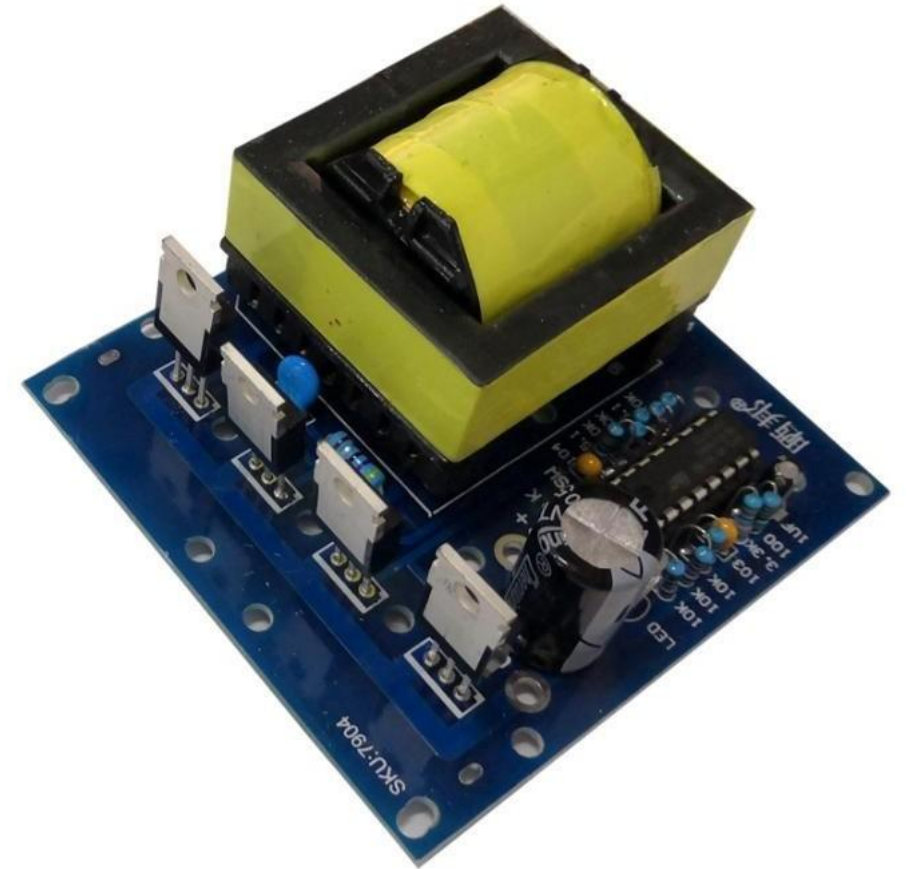
- **Standalone inverter off-grid inverter is designed for remote standalone application or off grid power system with battery backup where the inverter draws it's DC power from batteries charged by pv array**



**and convert to ac
power.**

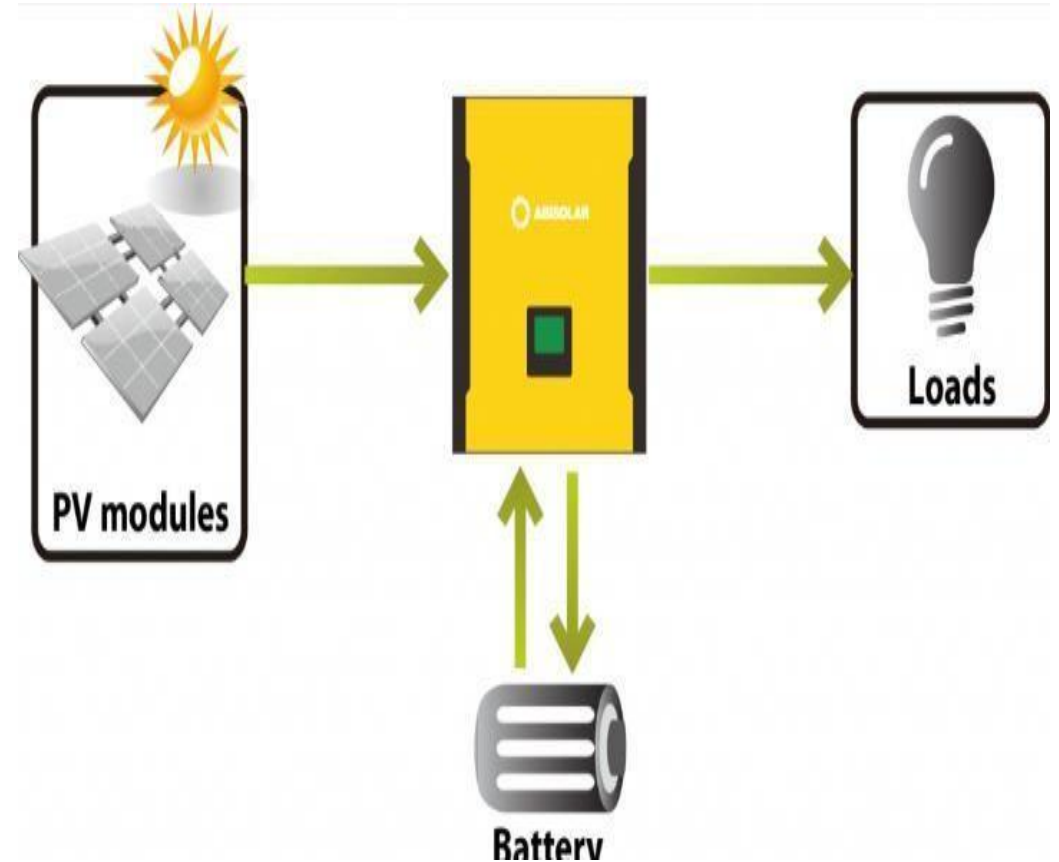
Micro inverter

A solar micro inverter or simply micro inverter is a plug and play device used in photovoltaic that converts direct current generated by a single solar module to alternative current.



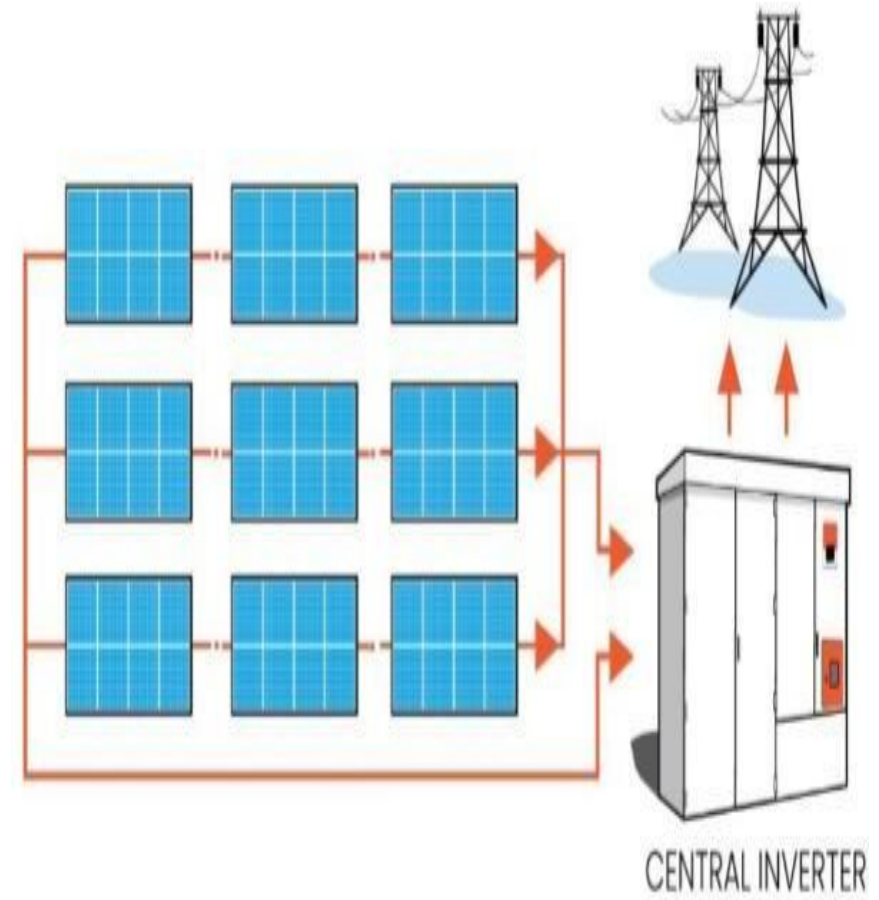
String inverter

A device used with solar arrays to convert the energy that is generated (Direct current) to usable electricity for a home (Alternative current).



Central inverter

A central inverter is a high capacity inverter designed for use with large commercial or utility (power station) sized solar system.



Thank You