Rooftop Solar Photovoltaic (PV) Plant
Grid Connected Hybrid Solar PV System
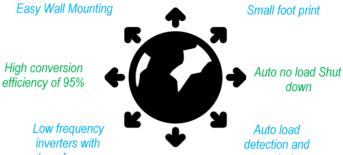

Solar
Panels

Hybrid
Inverter

Charge
Controller

Utility
Grid

Electric
Load

Solar
Battery

Bi-directional
Meter

A hybrid system optimises multiple sources of power:

- *During the sunshine hours*, the loads are powered by Solar power directly and excess power generated charges the battery, further excess if any, will be exported to the grid.

- *Grid failure during the sunshine hours*, loads will get its power from the solar panels directly and if there is any shortage on power, the balance power will be drawn from the battery.

- *During the Non-sunshine hours*, the loads can be powered by either grid or by battery or by the combination of both.

- *Grid failure during the Non-sunshine hours*, the loads will be powered by batteries alone.
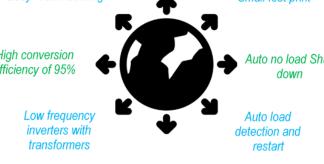
Features

Least No load Loss

Easy Wall Mounting

Small foot print

High conversion efficiency of 95%

Auto no load Shut down

Low frequency inverters with transformers

Auto load detection and restart

High surge handling capacity

Grid Fluctuations and Grid Variations do not effect the inverter output

Clean and green energy right from the roof

Grid availability is not required for working

ZERO or NEGATIVE Electricity bills

Work both as off-grid and Grid connected system

Aesthetically pleasing on the roof

Stable and reliable power

Benefits

Accelerate depreciation of 40% is available

Highly Programmable to suit the load requirements

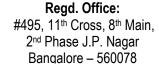Can be built to accommodate horizontal and vertical garden

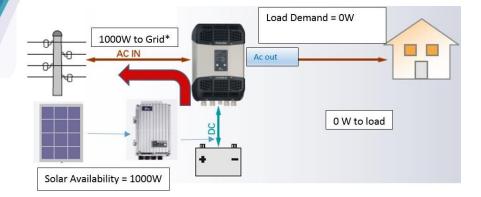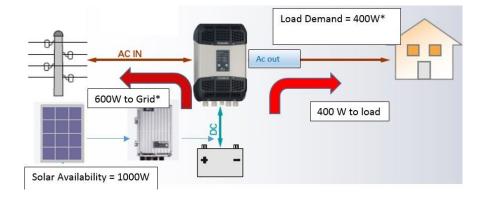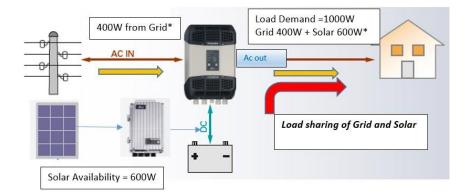Excess energy can be sold to Power Utility Company (DISCOM)

Keeps the roof cool

Controls Battery Discharge and extends Battery life

Possible Conditions

Load Demand = 0W

1000W to Grid*

AC IN

Ac out

0 W to load

Solar Availability = 1000W

Solar: Present
Grid: Present
Load: Nil

Solar: Present
Grid: Present
Load: Lower than Solar Production

Load Demand = 400W*

AC IN

Ac out

600W to Grid*

400 W to load

Solar Availability = 1000W

400W from Grid*

Load Demand =1000W
Grid 400W + Solar 600W*

AC IN

Ac out

Load sharing of Grid and Solar
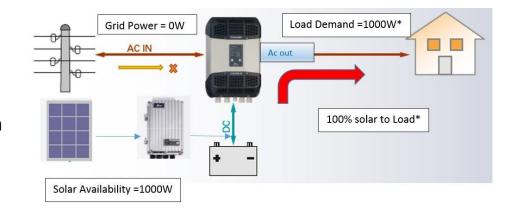
Solar Availability = 600W

Solar: Present
Grid: Present
Load: Higher than Solar Production

Solar: Present
Grid: Present
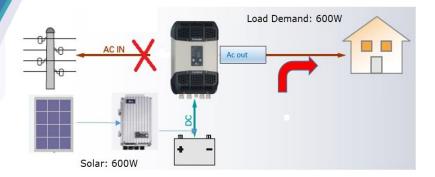**Load:** Equal to Solar Production

Grid Power = 0W

Load Demand =1000W*

AC IN

Ac out

100% solar to Load*

Solar Availability =1000W

Load Demand: 600W

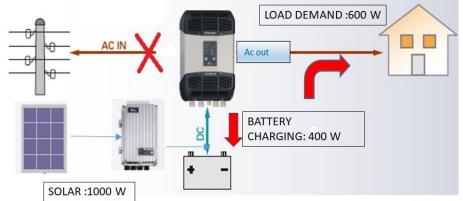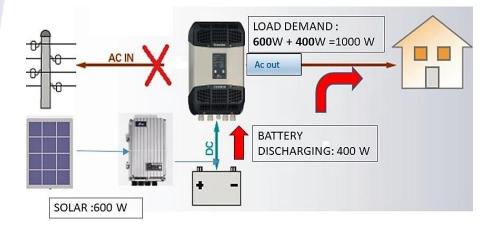AC IN ✗

Ac out

DC

Solar: 600W

Solar: Present
Grid: Absent
Load: Equal to Solar Production

Solar: Present
Grid: Absent
Load: Lower than Solar Production

LOAD DEMAND :600 W

AC IN ✗

Ac out

DC

BATTERY CHARGING: 400 W

SOLAR :1000 W

LOAD DEMAND :
600W + **400**W =1000 W

AC IN ✗

Ac out

DC

BATTERY DISCHARGING: 400 W

SOLAR :600 W

Solar: Present
Grid: Absent
Load: Higher than Solar Production

Solar: Absent
Grid: Absent
Load: Lesser or Equal to Battery Capacity

LOAD DEMAND : **600**W

AC IN ✗

Ac out

DC

BATTERY DISCHARGING: 600 W

SOLAR :0 W