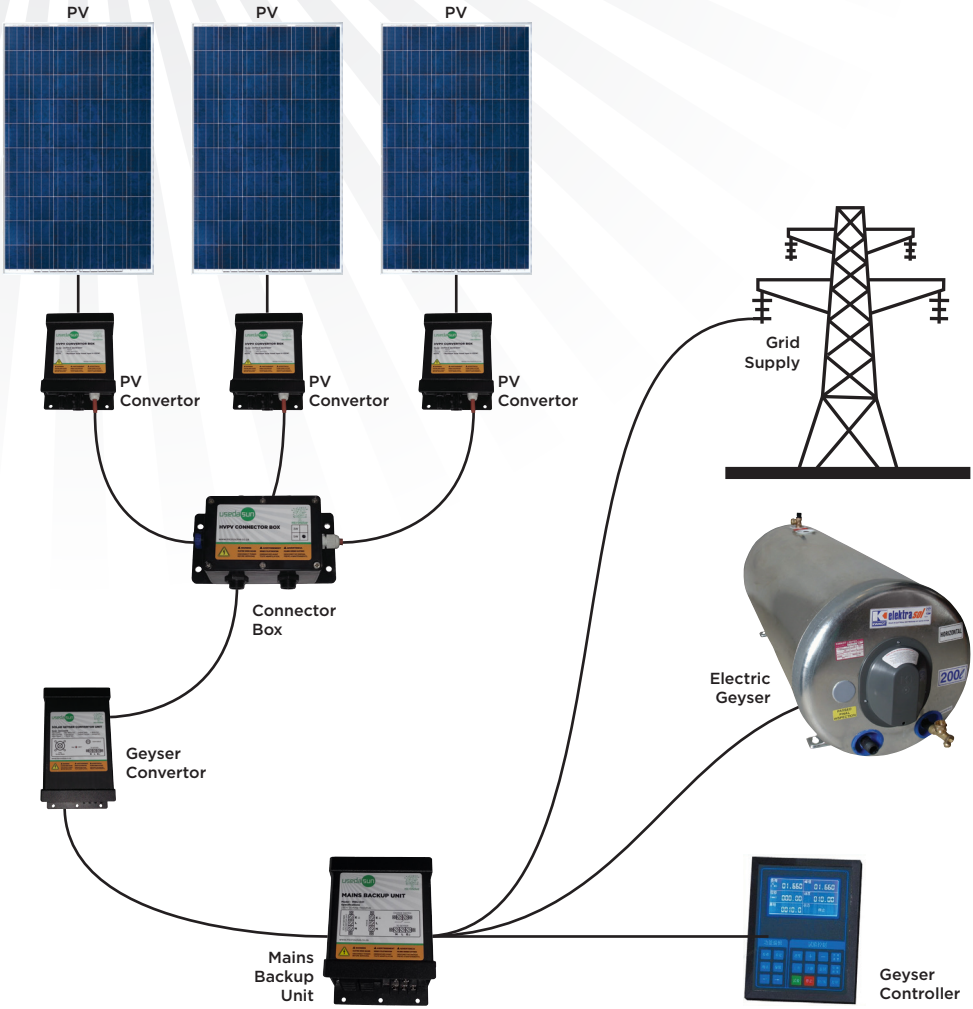
ALTERNATIVE ENERGY

SOLAR ELECTRICALLY DRIVEN WATER HEATING

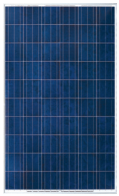
UsedaSun innovation brings an alternative method to heat water. The major advantage of this system is in the manner in which an existing electrical water heating system can easily be adapted with minimum disruption to use an alternative energy for heating the water. A carefully used system will save the user on daily electricity bill usage by using the sun as a primary heat source. The system is adaptable to have grid electricity, as a backup system in the case that the heated water is required and no sun is available to heat the water.

This ground breaking innovation uses electrically exited solar panels to generate electricity, which is then boosted by the 'PV Convertor' to a high voltage for easier transmission of the power to the main MPPT controller—'Geyser Convertor'. A number of advantages is achieved by the boosting of the voltage, is that the supply lines can be much thinner with less power loss over long distances, as is the case with low voltage high current transmission. The other advantage is that the system can later be upgraded in total power delivery by simply adding more panels and 'PV Convertor' units in parallel, with very little modification to the electrical supply system. The 'Geyser Convertor' uses a microprocessor to convert the available electrical energy from the group of 'PV Convertors' and using

MPPT (Maximum Power Point Tracking) techniques to transfer the amount of energy available from the solar panels to the geyser element. Depending on the design, a 'Mains Backup Relay' may be part of the circuit, in which the supply path can be selected via a control switch to either use the solar energy as a supply for the geyser, or the grid mains as a supply source. Either way the user gets the best of both worlds with the use of this equipment.



SYSTEM PARTS



250W Solar Panel
The heart of the system lies in the PV panels. The panels convert the sunlight into electrical energy

HVPV Convertor Box
This unit boosts the panel voltage to a high D.C. Voltage

HVPV Connector Box
All the HVPV Convertor Boxes are concentrated into one place, making the wiring simpler. One wire from this unit is fed to the Solar Geyser Convertor Unit

Solar Geyser Convertor
This unit transforms the high voltage DC into a energy usable by the geyser element.

Mains Backup Unit
This unit routes the power to the geyser from the source selected by the user. When there is usable sun, the unit will route the high voltage from the HVPV connector box to the geyser. When the switch is activated, then the geyser is fed from the grid electricity.

Typical Economy Kit for geysers up to 150L

- 2 off 250W Solar Panel including mounting kit,
- 2 off HVPV Convertor - HVPVCB-250W300V,
- 1 off HVPV Connector Box - 3W,
- 1 off Solar Geyser convertor unit - SCGU-500W and if required Mains Relay Bypass unit - MBU-001.
- For additional power add an extra Solar panel and HVPV Convertor unit - HVPVCB-250W300V.

Typical Economy Kit for geysers up to 200L

- 4 off 250W Solar Panel including mounting kit,
- 4 off HVPV Convertor - HVPVCB-250W300V,
- 1 off HVPV Connector Box - 5W,
- 1 off Solar Geyser convertor unit - SCGU-1000W and if required Mains Relay Bypass unit - MBU-001.
- For additional power add an extra Solar panel and HVPV Convertor unit - HVPVCB-250W300V.

Typical Economy Kit for geysers up to 300L

- 8 off 250W Solar Panel including mounting kit,
- 8 off HVPV Convertor - HVPVCB-250W300V,
- 2 off HVPV Connector Box - 5W,
- 1 off Solar Geyser convertor unit - SCGU-2000W and if required Mains Relay Bypass unit - MBU-001.
- For additional power add an extra Solar panel and HVPV Convertor unit - HVPVCB-250W300V.

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