

SOLTERRA CAPE / WEST COAST - RENEWABLE ENERGY DESIGN



Renewable Energy System Design is very much determined on a case by case basis. The detailed information gained by Energy Audits, architectural constraints, property orientation, available roof space & alignment, client preferences, financial constraints, solar system types & many more factors all play a part in the final design.

In order to ensure correct design outcomes, Solterra CAPE / WEST COAST design engineers utilise a market leading Software Design Package that has been developed by top Photovoltaic (PV) Engineers in South Africa for Sub Sahara Africa's unique conditions. This software minimises risk of system failures & optimises the cost per Kw.h to our clients.

Hardware & software products used in all our designs are of the highest quality. All products have the longest expected lifespan in the market & meet, or exceed international & local legislative approvals.

TYPES OF PHOTOVOLTAIC (PV) SYSTEMS:

1. GRID TIED SYSTEMS

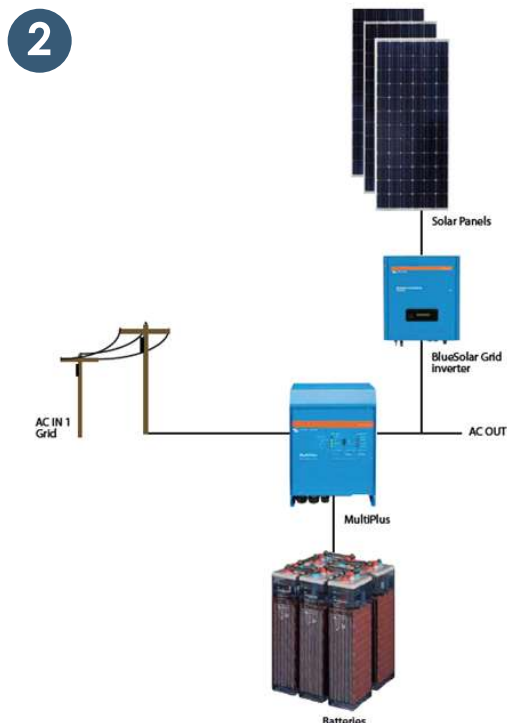
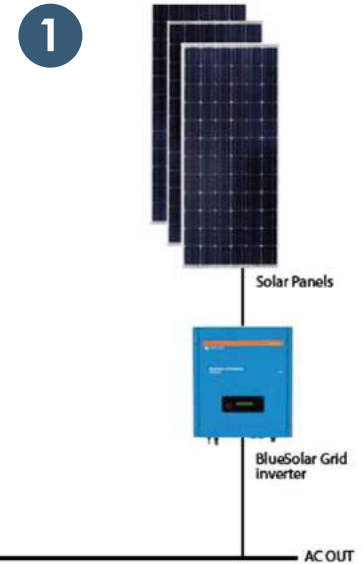
Grid tied systems are mainly to help with bill reduction. These systems are able to reduce your energy reliance from a service provider but they do not offer any form of back up power.

ADVANTAGES

- Most cost effective PV solution
- No energy storage losses
- Easy to monitor system production and performance
- Very high conversion efficiencies
- Simple installation

DISADVANTAGES

- No backup



2. HYBRID SYSTEMS

Hybrid systems offer you the advantages of both Island and grid tied systems. They are currently the Solterra systems of choice for most our clients. Savings plus the bonus of backup in the event of power outages.

ADVANTAGES

- Reliable supply for essential appliances
- Batteries will not be cycling if grid power is available
- Battery backup is only for essential equipment resulting in a reduced battery bank
- Standby batteries in this application can achieve similar life to cyclic batteries in a cyclic application
- Expandable in both the island and grid capacities
- Surplus power is fed back into the grid and not dissipated as in island systems
- Essential appliances can be selected and added

DISADVANTAGES

- Only partial grid-independence is achieved

3. ISLAND SYSTEMS

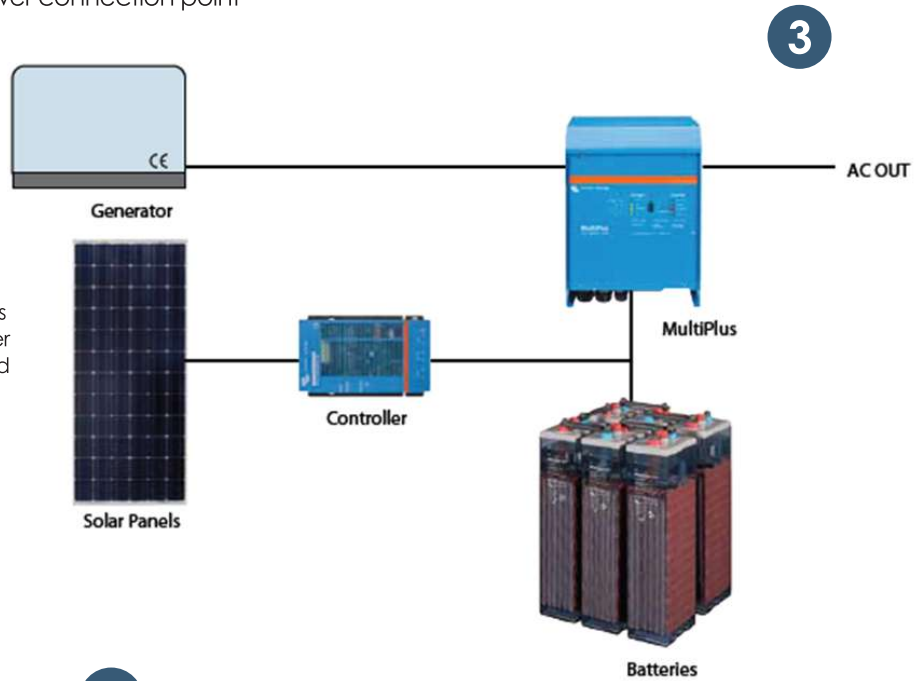
Island systems are typically installed to reach grid independence. Situations where clients have no access to power, or the cost to council power connection point is too high.

ADVANTAGES

- Grid independence
- Expandable into parallel or three phase
- Reliable power supply with grid/generator backup

DISADVANTAGES

- Batteries will be cycling on a daily basis
- Once battery capacity is reached power generated by the PV system is dissipated
- Battery capacity needs to ensure autonomy for about 3 days



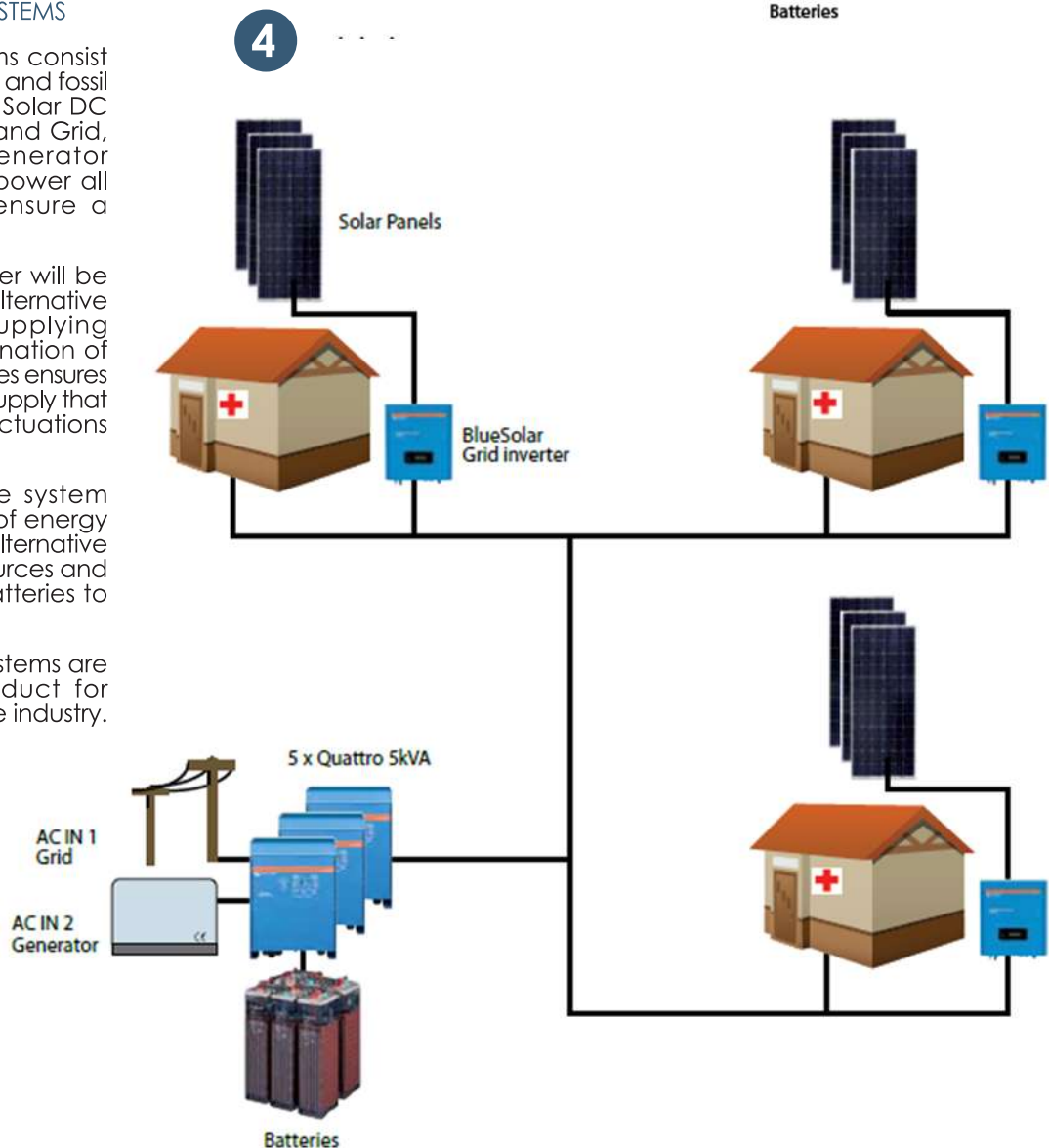
4. DECENTRALISED SYSTEMS

Decentralised systems consist of multiple alternative and fossil fuel energy systems, Solar DC and Grid, Wind DC and Grid, island inverters, generator and/or limited grid power all work together to ensure a stable grid.

Generator/grid power will be used in cases all the alternative sources are not supplying demand. This combination of different energy sources ensures a much more stable supply that can handle large fluctuations and peak demand.

The topology of the system allows for prioritising of energy in order to first utilize alternative sources, then fossil sources and lastly to cycle the batteries to supply demand.

Our decentralised systems are a sought after product for lodges and the leisure industry.



Consulting beforehand & communicating with our clients throughout the entire TURNKEY PROJECT is critical to a smooth and hassle free end result.