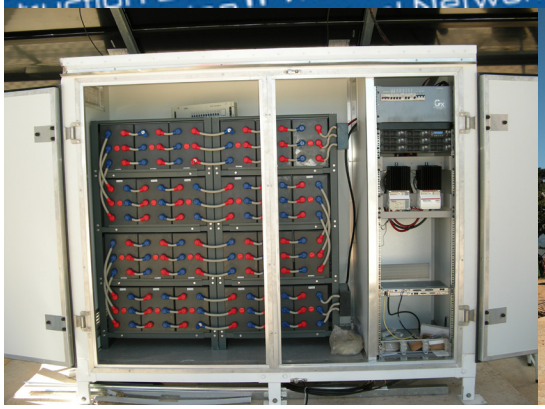
Project Profile



Hybrid solar system for an outdoor BTS site with 1500W average power consumption

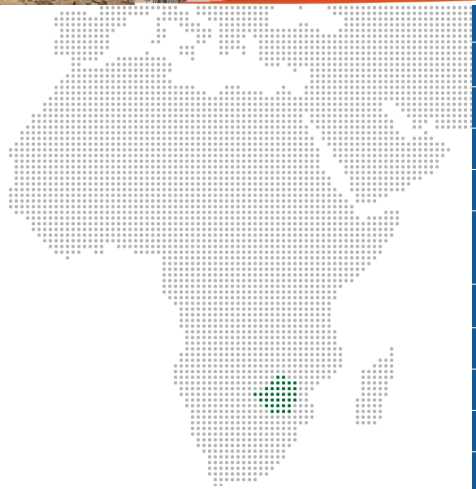
Description:

Likusasa designed and built a trial hybrid solar powered outdoor BTS site, with an average power consumption of 1500W, for Econet Zimbabwe.

Scope of Work:

The power system consisted of 2 arrays of polycrystalline PV modules with 6000Wp, 1500Ah REX deep cycling batteries, and a 20 kVA generator. The load consisted of a BTS unit with 1300W average consumption, a mini-link with 200W average consumption, and a cooling load of 90W peak. The site peak load was estimated at 2200W. The design configuration predicted a 60% renewable energy production component with a generator run-time of less than 1000 hours per annum.

A thermally insulated battery cabinet, which was shaded by the panels, was provided with free ambient cooling as standard. The rectifiers and solar charge controllers were cooled by a low power (90W peak) DC heat exchanger.



Likusasa

Project Facts and Figures:	
Value	US $60k
Location	19.81° S, 32.73° E
Client	Econet Zimbabwe
Lead contractor	Likusasa Engineering and Contracting (Pty) Ltd
Start and duration	2011 / 2 months
Solar insolation level	5.74 kWh / m2 / day
PV array size	6000Wp (30 x 200Wp)
PV array elevation	24°
Site size	18m x 13m
Solar energy produced	10 576 kWh per annum
Excess solar energy produced	14%
Site autonomy	33 hours
Battery life	7 years
Generator size	20 kVA
Generator run time	884 hours per annum
Generator life	> 10 years