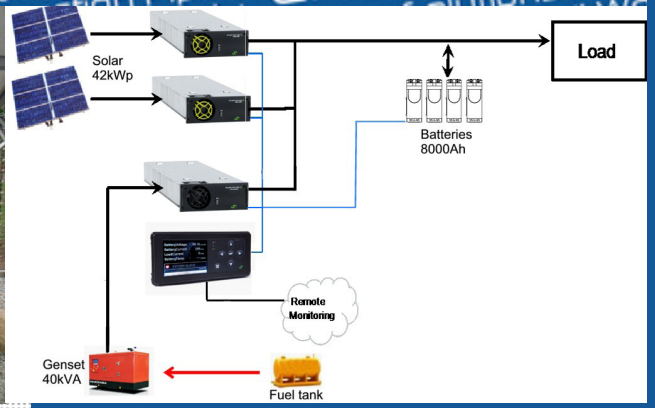
Project Profile



Hybrid solar systems for large co-location BTS sites with 17 kW average power consumption

Description:

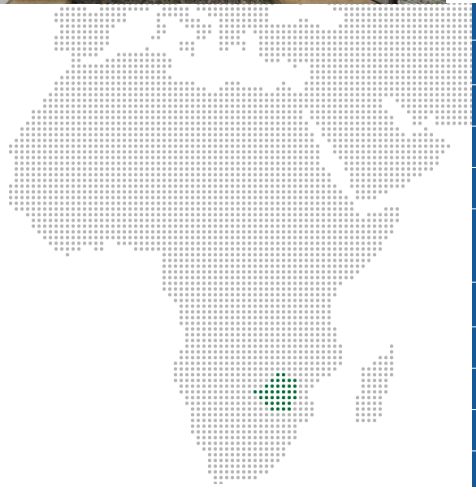
Likusasa was awarded the contract to design and build hybrid solar powered co-location BTS sites, with an average power consumption of 17 kW, for the Posts and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ).

Scope of Work:

The contract consists of 8 sites for the co-location of 4 mobile operator's BTS and microwave equipment, along with 4 repeater sites. The scope includes site survey and design, access roads, site civil works, tower supply and erection, fencing, and the site hybrid solar power systems.

For the co-location sites, the power system consists of 6 arrays of polycrystalline PV modules with 42kWp, 8000Ah OPvZ deep cycling batteries, and a 40 kVA generator. The load consists of three outdoor BTS units, one indoor BTS unit, and four mini-links, along with a DC cooling load. The site peak load was estimated at 21 kW. This configuration produces a 33% renewable component in energy production.

Thermally insulated battery cabinets, which are shaded by the panels, are provided with DC air-conditioning as standard. The rectifiers and solar charge controllers are cooled by low power DC heat exchangers.



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Project Facts and Figures:	
Value	US $5.6 million
Location	Throughout Zimbabwe
Client	POTRAZ
Lead contractor	Likusasa Engineering and Contracting (Pty) Ltd
Start and duration	2011, 9 months
Solar insolation level	5.74 kWh / m2 / day
PV array size	42kWp (210 x 200Wp)
PV array elevation	24°
Site size	32.5m x 20m
Solar energy produced	59 630 kWh per annum
Excess solar energy produced	1.4%
Site autonomy	18 hours
Battery life	7 years
Generator size	40 kWA
Generator run time	3350 hours per annum
Generator life	4 years