

Hybrid Power System

Repeater Site

Sierra Vista, AZ



Remote Industrial
Case Studies

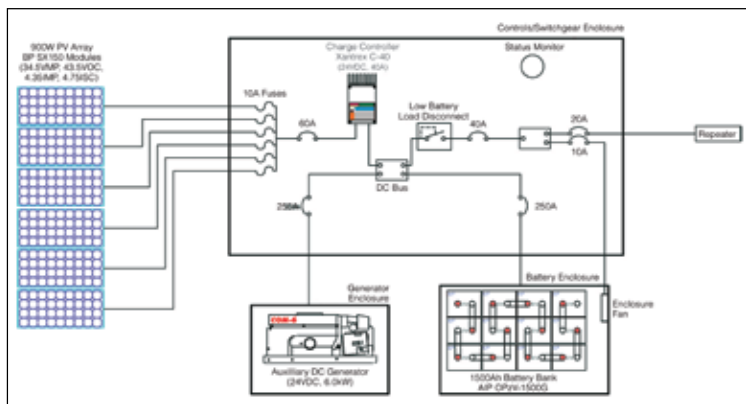
This is the site of a cellular repeater along a remote stretch of highway near Sierra Vista in southeastern Arizona.



Alpha Technologies HPS24-900/1500 in Sierra Vista, Arizona.

Although the grid may one day be installed at this site, it was not when the customer needed power here. Initially the repeater was powered by a 10kW Onan propane generator. Running this generator 24/7 required an inordinate amount of generator maintenance and fuel. It was costing over \$21,000 annually to power the 250W continuous load. That's why Alpha Energy was called. Alpha had

the perfect solution — a hybrid power system or HPS. This HPS is now saving about \$20,000 per year and will pay for itself in roughly 2 years.



The HPS24-900/1500 combines two power sources (photovoltaic or PV and engine generator) with energy storage (battery bank) to provide 24/7 high reliability power. The PV array delivers over 75% of the total

energy consumed by the repeater and, in combination with the battery bank, reduces the generator run time from 8760 hours per year to less than 200 hours per year! This in turn allows for a smaller, lighter duty generator to be used...one that consumes much less fuel per energy unit produced.

HPS24-900/1500 Specifications

System Voltage:
24VDC

Maximum Customer Load:
300W (DC) continuous

PV Array:
(6) BP Solar SX150 modules
(900W, 24VDC)

Generator:
(1) Kohler COM-6 (6kW,
24VDC, variable speed
1800 to 3600rpm, propane)

Battery Bank:
(12) AIP OPzS-1500
(Flooded, 1500Ah, 24VDC)

Weight:
5400lbs

Temperature Range:
-4 to 104°F

System Maintenance:
Once Every 3 to 6 Months
(generator and batteries)



This HPS was mounted on a heavy duty steel skid and delivered to the project site almost fully integrated. The HPS was operational within 24 hours of delivery.



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