

Customer Motivation:

Provide a safe, healthy environment for dogs, visitors, volunteers and employees with a green, environmentally-friendly building utilizing solar panels, natural sunlight and energy efficient design.

System Overview:

Completed in 2011, this 12.7kW solar power system consists of 54-PV panels operating in parallel with the utility service as a grid-tie power system. The system feeds utility-grade power of 12.7kW at 480VAC, 3-phase into the facility's electrical distribution network. The system was designed and engineered by RedHawk personnel.

The solar arrays are ground mounted on a concrete pad facing true south featuring RedHawk's innovative VersaTilt mount. The VersaTilt mount is designed to allow solar arrays to be adjusted to reach multiple desired tilt angles horizontally from 0° to 55°. This gives the system the ability to achieve maximum performance each and every season.

The system is arranged as a total of six (6) structures each containing nine (9) series-connected *Sharp* solar panels positioned in two (2) rows of three (3) sub-arrays. The output of each string of arrays is connected to a junction box mounted on the sub-array framework, whose output is then connected to a common combiner box that feeds to the *Solectria* grid-tie inverter. The *Outback* combiner box is an outdoor rated NEMA 3R enclosure equipped with din-mounted fuse holders, 10A 600VDC fuses, and surge protection for over-current protection.

When power is provided by the solar array (with adequate sunlight) the inverter automatically monitors and matches its output with that of the utility. In the case of utility power outage the inverter prevents power transmission to the grid and remains in standby mode until utility power is restored.



Environmental Impact:

This 12.7kW PV system under historical conditions is estimated to produce approximately 19 kilowatt-hours per year of energy.

- 1,523 gallons of gasoline consumed (CO₂ emissions)
- Annual greenhouse gas emissions from 2.7 cars
- CO₂ emissions from 566 propane cylinders used for home barbeques



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