

Customer Motivation:

Seeking net-zero energy consumption at facility (in theory the total amount of energy used on annual basis is roughly equal to amount of renewable energy created on site).

System Overview:

Completed in 2012, this 30kW solar power system consists of two (2) nominal 15kW solar systems (pictured top right). Each 15kW solar system contains fifty-four (54) *Sharp* 240W PV panels and a *Solectria* 15kW grid-tie inverter. The inverters operate in parallel with the site utility service as a grid-interactive power system. The system feeds utility-grade power at 208/120 VAC, 3-phase into the facility's electrical distribution network. The system was designed and engineered by RedHawk personnel. RedHawk assisted a local electrical contractor with installation.

The solar arrays are mounted on a *Schletter* ground mount system facing true south. The two (2) 15kW solar structures are arranged as six (6) parallel-connected strings of nine (9) series-connected solar panels per structure. The output of each string is connected to the combiner box at the inverter DC disconnect that consolidates all individual PV strings of the structure in order to feed the array inverter.

When power from adequate sunlight is provided by the solar array(s), the inverter control system automatically monitors and matches its output with that of the utility. In the case of a utility power outage the inverter will disconnect itself from the grid and remain in standby mode until utility power is restored.

Environmental Impact:

This 30kW solar power system under historical conditions is estimated to provide approximately 29,354kWh/yr (system total); 14,677kWh/yr (per array).

* On cloudy days and at night conventional grid power is the facility's main power source. While a good percentage of power is provided by the solar array(s), most net-zero facilities may still get half or more of their energy from the grid.



RHCaseStudyPV3

Copyright © 2016 All Rights Reserved
RedHawk Energy Systems, LLC

RedHawk Energy Systems, LLC
10340 Palmer Rd., S.W.
Pataskala, OH 43062

ph: 740-964-4000
www.redhawkenergy.net