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Guemes Island Fire Station



Overview

Concerned that a power outage could paralyze disaster response efforts, the residents of Guemes Island banded together to deploy a grid-tie solar electric back-up system for the local fire station. To facilitate ongoing maintenance and promote community awareness, they wanted a way for anyone to monitor and display system performance remotely.

Case Study

Challenge

Guemes Island, Washington, is home to 600 year-round residents. During the winter months, storms and high winds lead to frequent power outages. Several years ago, a ship dragged its anchor in the Guemes Channel, cutting the underwater cable, leaving the island without electricity for days. As the designated center for emergencies, the Guemes Island fire station must have a sustainable backup source of power.

Solution

A grid-tie solar electric back-up system was installed during summer and fall 2007 that is capable of providing 100 percent of the electrical needs of the fire station. The station normally relies on the public utility for power. During a service interruption, however, 45 photovoltaic modules funnel up to 8kWs worth of electricity through a power center, inverters, and charge controllers from Outback Power Systems. And when the sun doesn't shine, a large battery system provides up to three days of power.

Fat Spaniel Technologies provided the monitoring services, which enables remote monitoring of the system over the Internet from any Web browser. "No one lives at the fire station," says Ian Woofenden, senior editor of Home Power magazine and a long-time resident of Guemes Island who was very involved in the project. "Having a Web-based monitoring system means that people at the fire company or anyone else can check on the health of the system at any time."

Results

The more than 200 individuals who donated money, time, and labor to this community project are not only getting some added peace of mind – they can actually see the fruits of their labor. "That's important for this project," says Woofenden. "Anyone with a vested interest and an Internet connection can see what the system is doing currently, or last week, or last month."



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OutBack Power Systems provided the power center, inverters, and charge controllers.

System Specifications			
Size	Technology	Expected Energy Production/Yr.	Greenhouse Gas Averted/Yr.
8kW	45 PV modules; 48 V battery bank with 90kWh total capacity	10MWh	12,020 lbs.

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