

## Project Highlight

### National Park Uses Solar to Eliminate Diesel Fuel Consumption



In 2002 SunWize designed and installed a hybrid solar electric system using a 14.4 kW solar array for park operations on Loggerhead Key at the Dry Tortugas National Park in Florida.

One of the most remote and inaccessible of the U.S. National Parks, the Dry Tortugas are located approximately 70 miles west of Key West, Florida in the southern Gulf of Mexico. The park encompasses over 64,000 acres of marine sanctuary and seven small islands.

Facilities on Loggerhead Key, largest of the seven small islands, consist of two houses, an historic lighthouse and a number of other small buildings. The hybrid system provides power for employee housing including air conditioning, refrigeration and potable water production.

One of the logistical challenges facing SunWize was the transportation of foundation materials to the site via boat

and manual labor. To avoid the tremendous effort associated with the transport of materials such as cement and aggregate, SunWize used earth augers as solar array anchor points. The augers were hand installed and exceed specifications for maximum wind loading at 120 mph.

The SunWize hybrid solar electric system replaced an inefficient prime power generator. The hybrid system uses solar to provide up to 92% of the power requirements and a propane generator supplies 8%. Operation of the hybrid system reduces fuel consumption from 10,000 gallons of diesel per year to 392 gallons of liquid propane per year.

The park service implemented conservation measures to reduce daily energy use in half from 100 kWh per day to 50 kWh per day. The system helps the National Park Service meet their goal of protecting the environment by replacing a generator system with a renewable source of power.

In August of 2004, Hurricane Charley hit the islands with sustained 120 MPH winds for five hours and recorded gusts of 133 MPH. Throughout the storm, the SunWize system operated normally and maintained structural integrity.

Mike Jester, Facility Manager at the Everglades National Park which oversees the Dry Tortugas National Park, said, "I was thrilled with the system performance. The system never went down during the hurricane."



Rear view of solar array showing subarray combiner box.

#### Corporate Headquarters

1337 Main Street, P.O. Box 895, Philomath, OR 97370

1.800.827.6527 | [power@sunwize.com](mailto:power@sunwize.com) | [www.sunwizepower.com](http://www.sunwizepower.com)