

## Using Solar Panels to Reduce Power Consumption

**Cripple Creek Golf and Country Club**  
**Glen MacDonald, superintendent**

**Dagsboro, Del.**

### The Issue

The golfers at Cripple Creek Golf and Country Club appreciate the environment and want to make a difference by reducing their carbon footprint. Located near the Indian River Bay and its surrounding low-lying marsh wetlands, both staff and golfers have embraced local wildlife and desire to limit their environmental footprint. Golf Course Superintendent Glen MacDonald is mindful of their proximity to vital wetlands and believes strongly in preserving the local environment.

### The Solution

As a result, Cripple Creek decided to explore alternative energy. With several available forms of alternative energy, Cripple Creek formed an energy committee to evaluate alternative energy sources, determine if any government subsidies and grants would be available and identify which energy solution best fit their needs. The energy committee chose to take a historical step and install solar panels in productive yet inconspicuous areas throughout the property. At the time, Cripple Creek was the first golf course to utilize solar panels on a large scale in the state of Delaware.

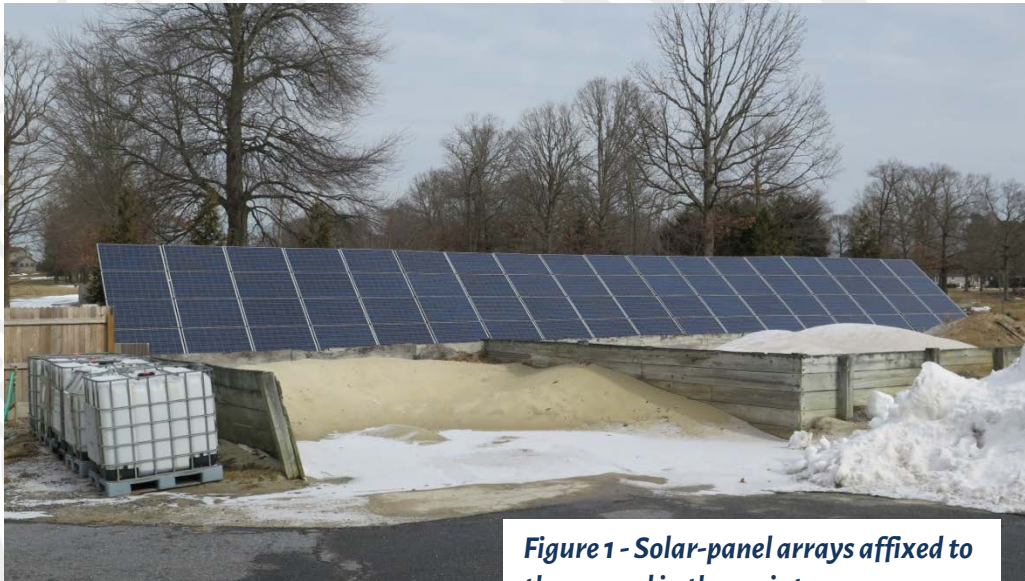
Flexera – a contractor located in Delaware – was chosen to assist with every aspect of the project from planning to installation. Flexera not only helped Cripple Creek maximize available incentives and subsidies but, by working with a Delaware company, also helped the course qualify for additional state subsidies. Three arrays of solar panels were installed in late 2010 and early 2011 on the roofs of the pool house, cart barn and maintenance building. A fourth ground-mounted array of solar panels was installed in the maintenance area and powers the irrigation system. After all incentives and subsidies were factored in, the total cost of installation was \$180,000.

### The Results

The financial rewards were immediate. After just one year, the solar panels provided enough power to reduce energy expenses by \$19,000 – a 45-percent reduction compared to the prior 12 months. In addition to energy-cost savings, two of the four arrays generate Solar Renewable Energy Credits (SREC) at a 20-year, fixed-price sales contract. The SRECs will provide the course

\$12,000 per year through 2020 and \$2,000 per year from 2021 to 2030 – in all totaling \$140,000. The new income has been funneled back into the course budget to fund other capital improvement projects.

As of January 2015, the solar panels at Cripple Creek have generated a 25 percent return on investment. During 2014, the solar panels produced 5 percent more electricity than original projections. With increasing energy prices, the additional energy helped Cripple Creek realize additional energy-cost savings. Cripple Creek Golf and Country Club has seen major financial success with the implementation of four simple arrays while also leading the way for environmental stewardship in Delaware.



**Figure 1 - Solar-panel arrays affixed to the ground in the maintenance area.**



**Figure 2 - Solar-panel array atop the maintenance building roofs.**