Jefferson County, Colorado wind-solar parking lot light lights

High visibility wind-solar hybrid parking lot lights provide safety lighting and reduce electric costs.

The turbines just have good visual impact. People like to see them. That’s like a billboard that says the county is doing something.

Wade Yates, project manager, facilities and construction management

Customer
Jefferson County, Colo., the fourth most populated county in Colorado, is located along the Front Range of the Denver metro area. The county campus houses county administrative buildings, courts and a detention center. Lighting was required for a new overflow parking lot at the detention center.

Objectives
- Reduce overall campus electricity consumption
- Provide safety lighting to a 150-car parking lot
- Demonstrate renewable energy technologies

Project Requirements
- Less costly solution than running electric lines to the site
- Adequate light output to meet safety requirements

Site Details
- Location: 39.730583,-105.202022
- Average annual wind speed: 4.5m/s (10 mph)*
- Average solar insolation: 4.5 kWh/m²/day*

Solution
- Nine 12V AIR Breeze units, 5.5 m (18 ft) steel light poles
- Nine 170-230 watt PV panels
- 35 watt high-efficiency LED lights
- Aesthetically pleasing, integrated design
- Turbines provide clean, ready-to-use AC power (no external inverter or controller required)
- “Behind the meter” connection reduces campus’ utility energy costs

Benefits
- Saved $22,000 to install vs. grid-powered lights
- Zero utility costs
- Provides light for safety; 100% up-time
- Public demonstration of wind and solar

Partners
- Next Generation Energy
- McKinstry

*Source: U.S. Dept. of Energy's National Renewable Energy Laboratory