Forward Wind Park

**Location:**
Forward Wind Park is located on more than 4,000 acres of land in Dodge and Fond du Lac counties.

**Type of plant:**
Wind turbine

**Initial cost:**
$178 million total purchase price
WPS owns 44.6 percent, Wisconsin Power & Light owns 42.6 percent and Madison Gas and Electric owns 12.8 percent

**Units:**
Eighty-five 1.6 megawatt GE turbines
One 1.85 megawatt turbine

**Year in service:**
2008
Forward Wind Park

**Net generating capacity:**
137.85 MW total

**Turbine manufacturer:**
General Electric

**Turbine design:**
GE 1.6-MW wind turbine generator, a pitch-regulated, upwind turbine with active yaw and three-blade rotor

**Total weight:**
Tower and turbine: 193.37 tons

**Rotor design:**
Three blades constructed of fiberglass-reinforced epoxy that each consist of two airfoil shells bonded to a supporting beam

**Rotor diameter:**
77 meters (252.62 feet)

**Rotor speed:**
11-20 rpm at variable blade pitch

**Generator:**
Induction-slip ring-rotor, IM B3 Design

**Generator nominal voltage:**
575 (60 Hz)

**Integrated lightning protection:**
Surge arrestors and grounding system

**Control system:**
Each wind turbine generator is controlled by either a Bachman or ESS wind turbine generator PC controller as the master device.

**Tower dimensions:**
Hub height: 262 feet
Weight: 138 tons
Base diameter: 14.9 feet
Rated power output: 1.6 or 1.85 MW

**Cut-in wind speed:**
8.9 mph

**Cut-out wind speed:**
55.9 mph

**Extreme gust wind speed:**
62.6 mph (67.1 mph on 1.85 wind turbine generator)

**Rated wind speed:**
26.8 mph