

We Energies' generating system



WIND

Glacier Hills Wind Park

The largest wind farm in Wisconsin.



Location:

Glacier Hills Wind Park is located in the towns of Randolph and Scott in Columbia County.

Type of plant:

Wind turbine

Initial cost:

Approximately \$364 million

Units:

90 turbines

Year in service:

2011

Net generating capacity:

1.8 megawatts each – 162 megawatts total

Turbine manufacturer:

Vestas Wind Systems

Glacier Hills Wind Park

Turbine design:

Vestas V90-1.8 MW wind turbine is a pitch-regulated, upwind turbine with active yaw and a three-blade rotor.

Total weight:

Tower and turbine: 300 tons

Rotor design:

Three blades constructed of fiberglass-reinforced epoxy that each consist of two airfoil shells bonded to a supporting beam.

Rotor diameter:

90 meters (295 feet)

Rotor speed:

14.5 rpm

Generator:

An asynchronous 6-pole, 3-phase induction generator with wound rotor and full-load reactive power compensation.

Generator nominal voltage:

690 volts, 3-phase

Integrated lightning protection:

Protection system includes lightning receptors and conductors in the rotor blades, lightning arrestors, earth grounding and shielding.

Control system:

A microprocessor controls all turbine functions

Tower dimensions:

Hub height:	262 feet
Weight:	171 tons
Base diameter:	13 feet
Rated power output:	1.8 MW @ 29 mph

Cut-in wind speed:

9 mph

Cut-out wind speed:

56 mph

Extreme gust wind speed:

133 mph