

We Energies' generating system



WIND

Blue Sky Green Field Wind Energy Center

*The first large-scale wind farm
constructed by We Energies.*



Location:

Blue Sky Green Field is located in the towns of Calumet and Marshfield in northeastern Fond du Lac County, east of Lake Winnebago.

Type of plant:

Wind turbine

Initial cost:

Approximately \$300 million

Units:

88 turbines

Year in service:

2008

Net generating capacity:

1.65 megawatts each – 145 megawatts total

Blue Sky Green Field

Turbine manufacturer:

Vestas Wind Systems

Turbine design:

Vestas V82 is a horizontal axis, pitch-regulated, upwind turbine.

Total weight:

Tower and turbine: 204 tons

Rotor design:

Three blades constructed of a fiberglass-reinforced epoxy coating around a wood/carbon fiber frame.

Rotor diameter:

82 meters (269 feet)

Rotor speed:

14.4 rpm

Generator:

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

Generator nominal voltage:

600 volts, 3-phase

Integrated lightning protection:

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

Control system:

A microprocessor controls all turbine functions.

Tower dimensions:

Hub height:	262 feet
Weight:	140 tons
Base diameter:	13.8 feet
Rated power output:	1.65 MW @ 30 mph

Cut-in wind speed:

8 mph

Cut-out wind speed:

54 mph

Extreme gust wind speed:

133 mph