

# Crystal Lake I, II & III Wind Energy Center

## Overview

### Crystal Lake I

- » Located in Hancock County, Iowa
- » 150 megawatts
- » 100 1.5-megawatt GE wind turbines
- » Began commercial operation in 2008

### Crystal Lake II

- » Located in Winnebago County, Iowa
- » 200 megawatts
- » 80 2.5-megawatt Clipper wind turbines

### Crystal Lake III

- » Located in Winnebago County, Iowa
- » 66 megawatts
- » 44 1.5-megawatt GE wind turbines
- » Both Crystal Lake I and II began commercial operation in 2009

- » Owned and operated by a subsidiary of NextEra Energy Resources
- » The three sites combined are capable of producing enough electricity for approximately 67,000 homes

## Benefits

- » Employs a staff of 11
- » Adds tax base to counties
- » Provides economic stimulus of landowner lease payments
- » Creates no air or water pollution
- » Uses no water in the generation of electricity
- » Allows land to remain in agricultural use



## About NextEra Energy Resources

- » A leading clean energy provider operating wind, natural gas, solar, hydroelectric and nuclear power plants across the nation
- » More than 18,000 megawatts of generating capacity in 26 states and Canada
- » The largest wind generator in North America with facilities in 17 states and Canada
- » A subsidiary of NextEra Energy, Inc., with headquarters in Juno Beach, Florida

## How It Works

Wind turbines work on the same principle as a child's pinwheel. When you blow on a pinwheel, the blades of the pinwheel spin around—same with a wind turbine.

When the wind blows against the blades of the wind turbine, the blades slowly rotate. The blades are connected to a drive shaft inside the large box (called a nacelle) seen on the top of the tower. The drive shaft turns the generator, which makes the electricity. Each wind turbine operates independently of the others. Each is, essentially, an individual power plant.

The turbine has a weather station on the top that tells it the wind speed and wind direction. That information is sent to the turbine's computer, which moves the top of the turbine (the nacelle and blades) so that the blades are always facing into the wind. The nacelle can turn 360 degrees.

The electricity is carried in cables from the generator down the inside of the tower, then underground to the site's substation. That power then goes into the offsite transmission lines and is used by the local utility to serve its customers in the region.

