

# ELM CREEK Wind Power Project



## Project Details

**Project Capacity:** 99 megawatts (MW), providing electricity to more than 29,000 homes served by Great River Energy member cooperatives.

**Number of wind Turbines:** 66

**Project Location:** Near Trimont, Minnesota, in Jackson County. The project encompasses about 9,554 acres of land leased from 56 local landowners. The land continues to be used for corn and soybean farming.

## Developer and Owner

**Iberdrola Renewables** is the world's leading provider of wind power with almost 10,000 MW in operation globally and more than 3,000 MW in the United States.

## Customer

**Great River Energy** ([www.greatriverenergy.com](http://www.greatriverenergy.com)) is a not-for-profit electric generation and transmission cooperative providing wholesale electric energy and related services to 28 distribution cooperatives in Minnesota and Wisconsin serving more than 600,000 members, or approximately 1.7 million people. Great River Energy is the second largest power supplier in Minnesota in terms of generating capacity and the fourth largest utility of its type in the United States.

## Technology

**Wind Turbine Type:** GE 1.5 MW

**Rated Output:** 1.5 MW (1,500 kW)

**Turbine Height:** 384 feet (117 meters) as measured from the bottom of the tower to the tip of the highest blade. That's about as high as a 27-story building.

**Turbine Weight:** Approximately 60 tons (120,000 lbs.)

**Tower Facts:** Three-section tubular steel

**Tower Height:** 263 feet (80 meters)

**Tower Weight:** 125 tons (250,000 lbs.)

**Blade Facts:** Swept Area: 50,050 square feet (4,657 square meters) per turbine

**Blade Length:** 122 feet (37 meters)

**Rotor Diameter:** 253 feet (77 meters)

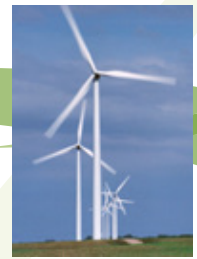
**Revolutions per Minute:** 11-20  
(one revolution every 3 to 5 seconds)

## Foundations

Each individual wind turbine foundation consists of an octagonal spread footing of 50 feet, seven feet deep. Concrete volume is 259 cubic yards per turbine or 12,400 total cubic yards – that's 1,240 truckloads.



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## Project Benefits

**Households Served:** Elm Creek will meet the annual energy needs of 29,000 homes served by Great River Energy member cooperatives. The Elm Creek Wind Power Project is helping Great River Energy increase the amount of renewable energy supplied to its customers and helping meet Minnesota's law requiring 25 percent of electricity sold to be generated by renewable sources by the year 2025.

## Local Economic Benefits

**Taxes paid by the Elm Creek and Trimont Area Wind Projects:** \$700,000-800,000 annually

**Local landowner payments paid by the Elm Creek and Trimont Area Wind Projects:** Approximately \$1.5 million annually

## Balance of Plant Infrastructure

**Turbine Access:** Provided seven miles of gravel-surfaced roads.

## Transmission Interconnection

To Great River Energy through Xcel Energy's Martin County 345kV system.

## Engineering & Construction

**Total project man-hours worked:**

128,124 with no loss time to injuries

**Civil and installation contractor worked:**

93,969 total man-hours

**Electrical and substation contractor worked:**

21,872 total man-hours

**Equipment supplier worked:** 12,283 man-hours

## Construction

**M.A. Mortenson:** Road and foundation construction, turbine installation, operations and maintenance building upgrade

**Par Electric:** Underground and overhead collection system installation and substation expansion

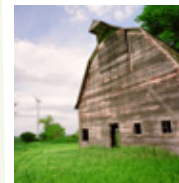
**Sioux Falls Tower/GEC:** Met tower installation

**GE Energy:** Turbine commissioning

**Project Site Workforce:**

Average 100 on site with a peak of 150

Construction began in May 2008



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