

Frequently Asked Questions

Rural Electric Convenience Cooperative's board of directors voted in 2006 to build a large wind turbine just outside of Farmersville, and construction was completed at the end of 2008. Actual production of electricity began on March 5, 2009. The 900-Kilowatt generator is made by Emergya Wind Technologies (EWT) in The Netherlands.

Why would the co-op be interested in building a wind turbine?

While it's perfectly okay to use coal and/or natural gas to generate electricity, if you can use a renewable resource, that's even better. It's the right thing to do.

Since renewable resources are generally found in the rural areas served by electric co-ops like ours, we're naturally interested in those resources whether they are wind or biomass or methane from animal waste. When you can use those resources economically, we think everybody wins.

Why put the project in Montgomery County?

The former Crown I Coal Mine just east of Farmersville was identified as a unique location that showed a large hill with higher wind speeds than the surrounding land. The abandoned mine's 14-acre pile of coal tailings, or "gob," stands 60 feet over the adjacent fields. This extra height catches more wind currents, meaning the turbine can run more hours and produce more electricity each year.

The site is also just ½ mile from RECC's Farmersville substation, so we can easily deliver the electricity from the turbine to the substation where it's distributed to the co-op members in the surrounding area. All of the energy produced at GobNob will be used directly by our members, and will reduce the amount of power we have to purchase.

The project would not have been possible without the cooperation and support of the Illinois Department of Natural Resources, which gave the co-op a long-term lease for the turbine site. The land is managed as part of Sangchris State Park.

How much did the project cost?

In all, the project cost about \$1.8 million. The co-op received grants from the United States Department of Agriculture's Rural Development program, the Illinois Department of Commerce and Economic Opportunity, and the Illinois Clean Energy Foundation totaling \$675,000.

The remainder of the cost is being financed with a zero-interest loan through the Clean Renewable Energy Bonds program, created in the Energy Act of 2004. This loan will be repaid over about 15 years.

The energy from the wind turbine will cost less than the average cost of the co-op's wholesale energy supply. There is no fuel cost for a wind turbine! The price of the energy from the wind turbine will increase very slightly from year to year, while the cost of power on the wholesale market is expected to rise steadily. The increases for wind energy will come principally from increases in labor for maintenance, but that's a small component of the total cost.

How tall is the wind turbine?

The hub of the wind turbine is 230 feet tall, and, when one of the blades points straight up, it will be 310 feet tall. A red beacon at the top of the tower is installed to alert any nearby aircraft.

How fast does the wind have to be for the turbine to make electricity?

The turbine will generate electricity at wind speeds from 5 to 55 miles per hour. If the wind is too fast, the turbine shuts down.

How much of the time will electricity be produced by the wind turbine?

The turbine will produce some electricity whenever the wind speed is 5 mph or higher. It will produce its full 900 KW of power in winds of 26 mph or more. On average, the turbine is expected to produce about 30 percent of its capacity during the year, or 2.3 million kilowatt hours per year.

How much electricity is 900 Kilowatts?

A turbine the size we're installing will provide enough electricity for about 300 homes when it's operating at full capacity. It's about 5 percent of the total demand on the co-op's system on a hot day.

One Kilowatt is one thousand watts or enough power to light ten 100-watt light bulbs. So, 900 Kilowatts equals 900,000 watts. It's also equal to 0.9 Megawatts.

Where does the electricity go?

The electricity from the turbine is used by RECC members in the surrounding area. It will offset purchases from our wholesale power supplier. The turbine's output is 600 volts, so RECC has a transformer on the site which boosts the voltage to 12,500 volts to feed into our existing power lines.

Will the turbine generate power when the substation power goes out?

The turbine uses utility electric power to regulate the voltage and frequency output. So, if service is interrupted to the substation, the wind turbine cannot generate power. The blades may turn, but the generator will not operate.

Are they noisy?

The new turbines produce a little less noise than an average house, about 45 decibels at 1,150 feet. You can carry on a conversation in a normal voice at the base of an operating turbine.

Do the windmills pose a threat to birds?

Today's turbines are designed not to pose a threat. The turbines twenty years ago built years ago had a couple of serious problems. They were built on open latticework structures on which birds perched and then flew into the moving blades. Today's turbine blades also turn at slower speeds than older, smaller models.