

# Akron Beacon Journal

## Air of hope whirls in

### **But even with efforts to add hundreds of turbines, the state is still lagging far behind its neighbors in wind power**

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A fresh wind is blowing across Ohio.

The state is aggressively pursuing wind as a new source of energy, jobs and economic development. Wind developers, including some from Europe, have big plans for Ohio — on land and in Lake Erie.

Six sprawling, large-scale wind farms with up to 436 towering turbines — and a price tag in excess of \$2 billion — are proposed across western Ohio.

The heaviest concentrations are atop a glacial ridge west of Columbus in Champaign County, in northwest Ohio in Hardin County and on the flat farmlands near the Indiana line in Paulding and Van Wert counties.

Four of the projects are pending before the Ohio Power Siting Board. The two others are expected to be filed soon.

Approval for the first project, in Champaign County, is expected early this year.

Buckeye Wind LLC, a subsidiary of New York-based EverPower Wind Holdings, is behind a \$380 million project to install 70 turbines on 9,000 leased acres near Urbana. Some turbines would be nearly 50 stories high. Each requires one acre for the base and access road.

The six wind projects together would produce 1,100 megawatts — as much electricity as a large nuclear power plant or 50 percent of the electricity a large coal-fired power plant generates.

Even more wind farms for Ohio are on drawing boards, in part because Ohio's high-altitude winds exceed the 15-mph threshold needed to make utility-scale projects viable.

Texas-based Horizon Wind Energy LLC, with a \$400 million wind project planned in Paulding County, has three additional Ohio projects in the works. The total price tag is about \$950 million.

Wind has become the potential "next big thing" as a clean energy source for Ohio and for Ohio jobs.

According to some estimates, Ohio will get 3,000 to 4,000 additional large wind turbines.

About 20 wind-energy developers have been scouring western Ohio for several years in search of the best sites. The players involved include British, Spanish, German and Portuguese conglomerates with wind experience in Europe.

Electricity the wind farms produce would be sold to Ohio utilities like Akron's FirstEnergy Corp. and Columbus-based American Electric Power, allowing them to comply with a new Ohio rule on renewable energy.

Ohio's impending wind boom — triggered largely by that 2008 change in state law — is seen by some as a sign the state is moving toward cleaner, renewable energy and away from dirty, polluting coal that has ruled Ohio economically for decades.

Ohio, however, remains far behind neighboring states in adopting wind power. Today there are about 30,000 wind turbines in North America and 50,000 in Europe.

Ohio has four.

The state's ace in the hole in developing wind power might be putting turbines in Lake Erie, the site of Ohio's most productive winds.

That's where Cuyahoga County wants to develop a pilot project with three to eight turbines built three to five miles off downtown Cleveland by 2013. (That timing would make the project eligible for federal incentives.)

The turbines would stand 260 feet above the water. The project could cost as much as \$92 million to build and up to \$4.6 million a year to operate.

In addition, supporters want to develop a new wind-power research, testing and development center with Case Western Reserve University. It could cost as much as \$15.75 million to equip and staff.

Cuyahoga County officials say that wind power can be a major economic driver. The first region to develop offshore wind power will have a major advantage, said A. Steven Dever, executive director of the Great Lakes Energy Development, the Cuyahoga County-driven initiative.

"If we can be the first to get these [turbines] in Lake Erie, the whole industry will grow up and around our project," said Bill Mason, the Cuyahoga County prosecutor, who is spearheading the wind initiative. "That's why it's important to be first."

Ohio is interested in both wind on land and wind on water, said Tom Maves, a spokesman for the Ohio Wind Working Group, an entity the Ohio Department of Development organized in 2003.

Gov. Ted Strickland said he expects offshore wind development in Lake Erie, but Ohio will see land-based projects first.

It probably will be 10 years or more before the first utility-scale turbines are sited in Lake Erie, said Richard Stuebi, an energy expert and the BP fellow for energy and environmental advancement at the Cleveland Foundation.

### **Higher costs**

Wind is the fastest-growing form of energy in the United States, although it represents just 2 percent of the nation's energy market.

Nationally, wind produces about 31,109 megawatts of electricity — equal to about 30 mid-sized nuclear power plants or 14 large coal-fired plants. An additional 5,567 megawatts are under construction.

Wind cannot replace coal, but it can supplement it. Coal-fired plants can produce electricity on days when wind is not blowing.

Right now, wind-generated electricity is more expensive than coal-derived electricity, Stuebi said.

The cost of coal-based electricity is likely to climb from the current 5 to 6 cents per kilowatt hour to 10 cents per kilowatt hour, the current cost of wind-derived electricity, he said. The rise will be due to steps taken to fight carbon-dioxide emissions, a key global-warming gas.

Generating electricity in Lake Erie could cost 20 cents a kilowatt hour. Technology must be improved to bring that cost down to 10 cents and make Great Lakes offshore wind more competitive, Stuebi said.

Another problem is that America's electric grid cannot handle the proposed influx of wind power without updates. Who would pay for needed transmission lines is a simmering issue.

### **Tracking winds**

Ohio's wind frenzy comes as a mild surprise because the state's wind potential was once considered poor.

But in 2007, a U.S. Department of Energy study of winds at 100 meters (328 feet) aloft revealed that Ohio has stronger and more persistent winds, with far greater commercial potential, than anyone had realized.

The new study meant 12 percent of Ohio had suitable winds — mostly northwest of a line from Cleveland to Dayton — not the 1 percent found in previous studies.

Ohio has the wind to produce perhaps 20 percent of its energy needs by 2030, the U.S. Department of Energy said.

Ohio might provide up to 66,000 megawatts of on-land wind power, according to state estimates. That's 30 times the output from FirstEnergy's Sammis plant and enough to power 48 million homes.

Wind, however, has some other drawbacks.

Bats and birds can be at risk from spinning blades. Some neighbors complain of noise and aesthetics.

A federal court decision in Maryland concerning the endangered Indiana bat could hinder wind development, according to some within the industry.

U.S. District Judge Roger Titus ruled in early December that Maryland-based Beech Ridge Energy LLC had violated the Endangered Species Act.

Titus said the developer cannot complete building turbines, and the ones completed can operate only from November to April, at a \$300 million wind farm in Greenbrier County, W.Va., because of the threat to bats.

Only 40 of the 119 planned turbines have been completed.

The company was directed to get a permit from the U.S. Fish and Wildlife Service, a step that could take several years and cost several million dollars.

The decision could have "a chilling impact" on wind projects, industry spokesman Frank Maisano said.

### **Ohio plays catch-up**

Ohio remains far behind other states, according to data from the American Wind Energy Association.

As of Sept. 30, Texas (8,797 megawatts), Iowa (3,053 megawatts), California (2,787 megawatts) and the states around Ohio — Pennsylvania, West Virginia, Michigan and Indiana — are all far bigger players, the association said.

Ohio currently has 7 megawatts of wind power and is 33rd among the states. (Thirteen states, mostly in the southeast, have no wind power.)

Strickland said it is regrettable that Ohio lags so far behind.

"We were not asleep at the switch but maybe not as farsighted as we should have been," he said. "It's a problem that we're trying to correct now."

The picture in Ohio changed significantly in 2008 with passage of Senate Bill 221.

Under Ohio's "advanced energy portfolio standard," 25 percent of the state's energy must come from advanced and renewable sources by 2025.

The law requires that Ohio's investor-owned utilities, like FirstEnergy, obtain at least half of that power within the state. If wind accounts for 75 to 95 percent of that power, Ohio has created an instant market for 5,000 to 7,000 megawatts of wind-generated electricity.

Wind is not the only energy source that will be tapped to meet Ohio's rule but most experts expect it to be the big player.

Ohio ranks fourth in the United States for electric consumption, behind only Texas, California and Florida.

Strickland said he is surprised at the surge in wind development in Ohio.

"It has far exceeded what I thought would happen and it's happened so soon," he said in a telephone interview.

He called the adoption of the new state rules "one of the most important things to happen in Ohio in decades."

Without those rules, Ohio would have fallen further behind other states, he said.

## **Project under review**

Buckeye Wind's project in Champaign County is the most developed on-land site in Ohio. It has been taking shape for three years.

It was the subject of a public hearing — the first of its kind in Ohio — on Oct. 28 in North Lewisburg. Neighbors raised concerns about noise, safety, aesthetics and property values.

The state review is expected to continue into early 2010. Construction would begin once state permits are issued.

The Ohio Power Siting Board has authority over any wind farm that will produce 5 megawatts or more.

The board has set a minimum distance from a wind turbine to the closest neighbor's house as 750 feet, and from the turbine to the property line as 110 percent of the turbine's height.

Wind farm operators also want to separate turbines, so the turbines don't "steal" wind from one another, companies said. That's why the operators have acquired large leases for thousands of acres for some of Ohio's first wind farms.

The siting board has completed formal hearings on the request. A staff report recommended that most, but not all, of the turbines be approved, agency spokesman Matt Butler said.

There is no timetable for a final decision, he said.

The 70 wind turbines would have hubs at 330 feet off the ground and a height of 492 feet with a blade extended straight up on 60 leased tracts, said Michael Speerschneider, EverPower Wind's director of development in Ohio.

The company has not decided on the final turbine design, but each turbine probably would produce just over 2 megawatts — with the overall project producing 140 to 150 megawatts, he said.

That's enough to power more than 42,000 Ohio houses and to reduce greenhouse gases by about 350,000 tons, EverPower said.

The electricity produced by the project would be added to the electric grid via the Dayton Power & Light network.

The project is expected to create 140 jobs during construction and 10 to 12 permanent jobs, Speerschneider said.

## **'Wind Alley'**

Its site, the company said, is part of Ohio's "Wind Alley" north of Interstate 70 on a ridge in Champaign, Logan and Hardin counties.

"The best wind in Ohio is where the highest land is. . . . That's no secret," Speerschneider said. "We think we've got some of the best onshore winds in the state."

The glacial ridge — it is 100 to 200 feet higher than surrounding farmland — can be a big boost, said Mike Pullins, the project's community liaison.

A 10 percent boost in turbine height can produce a 25 percent increase in energy production, he said.

Tests show the wind farm will be able to operate at an annual average capacity better than 30 percent, the company said.

Each turbine will generate from \$10,000 to \$12,000 per year in income for landowners leasing land and wind rights, EverPower says.

Farmers will benefit and will be able to continue growing crops up to the base of the turbines on their land.

The company said it expects to pay \$1.5 million to \$2 million a year in leases, based on a percentage of gross revenue.

Ohio's adoption of renewable energy portfolio standards was a big reason for the company's interest in moving into Ohio, Speerschneider said.

The project got a grant of up to \$3 million from the Ohio Department of Development's Ohio Wind Production and Manufacturing Incentive Program. It was one of two state grants awarded in 2007 to wind developers to promote Ohio projects.

The developers will get the money when the turbines are up and running.

### **Supporters, critics**

The project has come under fire from some in the community, but support in agricultural Champaign County overall is "very, very strong," Pullins said.

Jon Berry farms 175 acres in Champaign County and is a strong advocate of the project.

Berry, 50, is involved with Champaign Advocates for Renewal Energy, a farm-based grass-roots group that supports wind. He has signed a lease with another wind development company. One or two turbines could be sited on his land.

"I'm not worried at all. . .and this makes sense for clean energy. It's the best way to go. . .and it's the right thing to do for farmers," he said.

Berry said the company and his group have taken community members to see wind farms near Bowling Green and in Indiana and Illinois. Those tours have won over most critics, he said.

One of the most visible critics has been Tom Stacy of Zanesfield, in Logan County. He's the man behind the grass-roots group Save Western Ohio and its Web site, <http://www.savewesternoh.org>.

Stacy laments locating unsightly turbines in an area that is booming with suburban homes. He doesn't believe the environmental, economic and energy justifications for developing wind turbines.

One local group, Union Neighbors United, wants bigger setbacks between turbines and houses.

Issues cited by other turbine opponents include the ceaseless noise, ice flying off turbine blades and an issue called "shadow flicker" that is created when the sun strikes a spinning blade at certain angles.

### **Health effects**

Complaints about illnesses being caused by turbine sounds are just beginning to be studied. It's called "wind turbine syndrome," and symptoms include headaches, anxiety attacks and high blood pressure.

Doctors in other countries have some limited research of people living near turbines who say the sounds they emit make them sick.

Some research indicates that turbines should be at least one mile from houses.

Such evidence is anecdotal at best, the wind industry says.

A new industry-backed study with experts from the United States and three other countries concluded that wind turbines are not harmful to human health. That analysis was released Dec. 15 by the American Wind Energy Association and the Canadian Wind Energy Association.

In the long run, Ohio might never catch up with surrounding states for wind power, but that's OK, says Stuebel of the Cleveland Foundation.

Ohio and surrounding states probably will form a regional system that will produce tens of thousands of megawatts of cleaner electricity from wind.

"That's a major step forward," he said. "We're moving in the right direction for the future."

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