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### Wind storm - a debate over power and place

By *Jeremy Moule*

In the latest debate over power plants, the symbol of controversy isn't a smokestack or a reactor. It's blades. Along country roads around Upstate New York, you see the signs: pictures of windmills and words of support or opposition: "Wind Power Yes," "Clean and Green," "No Wind Turbines."

(And, in Hamlin, the Burma-Shave adaptation: "The bird was fast / the blade was too / I guess he'll make / some kind of stew.")

Wind-power developers are paying increasing attention to Upstate New York. They've proposed projects - large and small - for hills and shorelines. They've promised money for municipalities. And they've polarized communities.

In Hamlin, where the Spanish company Iberdrola wants to install wind turbines on a 3-square-mile section in the northwest part of the town, neighbors, friends, and families are divided. The company - the same one that is trying to buy Rochester Gas and Electric's parent company, Energy East - is one of the world's largest wind-power operators.

To proponents, in Hamlin and elsewhere, wind power is a part of a renewable energy solution, a way to reduce reliance on fossil fuels. And it's a way to curb the pollution, danger, and waste associated with coal and nuclear plants. The proponents also see wind power as a way to bring money into their towns.



Critic Linda DeRue of Hamlin: "Wind power is more suitable for offshore development or in scarcely populated areas."



Wind turbines in Wethersfield, Wyoming County.

To opponents, wind power is an inefficient power source that relies too much on public subsidies and causes sound and visual pollution. Windmills are also a danger to birds, bats, and other wildlife, they say. And although wind power may be a source of renewable energy, critics say the drawbacks outweigh the benefits.

Nationally, both the Sierra Club and the Audubon Society back wind power. But they do so with the stipulation that site selection and studies of the environmental impact should be a careful, painstaking process. Some environmentalists oppose the projects entirely.

Upstate New York is well-suited for wind power, and the areas with the good wind - the Lake Ontario shore and the ridges of the Finger Lakes area and the Southern Tier - have been popular with wind-power developers. The problem is, they are also popular with birds, says June Summers, president of the Genesee Valley Audubon Society. The Lake Ontario shore is part of a bird migration path.

"We're in favor of green sources of energy that take into account any impact they will have," says Summers. But the local Audubon Society also believes that turbines should not be located in migratory paths and other areas that birds frequent, she says. That includes the area within 5 miles of the Lake Ontario shore.

And the Hamlin land targeted by Iberdrola falls within that limit.

**Last year, Upstate New Yorkers** consumed 518,000 megawatts of wind-generated electricity, says Sal Graven, a spokesperson for the New York State Energy Research and Development Authority. That's enough juice to power 86,000 homes for a year, based on NYSERDA's estimates that the average home uses 6,000 kilowatt hours of electricity a year.

Right now, there is around 370 megawatts of wind-generation capacity in New York State, says Ken Klapp, a spokesperson for NYISO - New York Independent System Operator - which oversees the state's power grid. There are more than 50 wind-project proposals statewide, with a combined total of 6,000 megawatts of capacity.

"Capacity" is an important word: If a wind-power plant has a capacity of 20 megawatts, that means that at a given moment, if all the turbines are running full tilt, the plant can produce 20 megawatts of power.

But turbines typically generate only a fraction of their capacity: 10 percent, according to the most liberal estimates, says Brad Jones, a wind-power opponent and activist who lives in Italy, Yates County. That's because the wind doesn't blow all the time, and even when it does, it doesn't blow at a force strong enough for windmills to produce power at their maximum capacity.

Nonetheless, wind power will probably be key in meeting Upstate's energy needs. Ultimately, 10 to 25 percent of the state's power could be generated through wind, says Carl Lundgren, an RIT engineering professor who teaches courses on alternative energy. But it won't replace high-capacity coal, natural gas, or nuclear plants. Wind farms "have to be part of a larger system," he says. "We're not going to stand alone on wind energy."

**Wind-generated electricity** is best used close to its source, since some of it is lost when it is transferred over distances, says Keri Kaminsky, co-chair of the local Sierra Club's global warming and energy committee. That means the plants must be scattered across a region.

The state's largest plant - and the largest wind farm east of the Mississippi River - is the 192-turbine Maple Ridge Wind Farm in the Tug Hill region of Lewis County. It has a production capacity of more than 320 megawatts.

On the other end of the scale, the Steel Winds project in Lackawanna, Erie County, has eight turbines, capable of generating 20 megawatts.

Roughly a dozen projects are operating, under construction, or under review in Monroe, Genesee, Wyoming, Livingston, Ontario, and Steuben Counties. (Wyoming and Steuben Counties have the most.) And they vary in size. The 10-turbine Wethersfield Wind Farm in Wyoming County would be able to produce, at most, 6.6 megawatts. Invenergy's proposed High Sheldon Wind Farm, also in Wyoming County, would have 86 turbines and would be able to produce, at most, 129 megawatts.

And some individuals and businesses have entered the field on their own. HARBEC Plastics in Ontario, Wayne County, for example, gets power from its own wind turbine.

Wind developers are interested in the Rochester and Finger Lakes region for a couple of reasons. In the hillier areas, such as Bristol, the slopes are relatively gentle, easing the placement of the wind farms, says RIT's Carl Lundgren. But more important, the area has enough sustained wind to power the turbines, he says.

Also attractive: there is a market for wind power in this area. In New York, consumers can choose, through their electricity providers, whether they want to buy wind power. (That option is typically more expensive than standard electric, often because it costs more to produce.)

Under former Governor George Pataki, the state set a goal of having 25 percent of electricity generated in New York come from renewable sources by 2013. Governor Spitzer has also pushed for the expansion of renewable power - wind power in particular.



Opponents have posted their messages along Hamlin roadsides.

**Some cash-strapped** municipalities have found another advantage: wind-power projects provide revenue, which can mean lower property taxes or better services. Earlier this month, the Town of Cohocton, in Steuben County, approved UPC Wind Management's Cohocton Wind and Dutch Hill Wind projects. Under a proposed payment-in-lieu-of-taxes agreement, the company will pay the town \$11.5 million over 20 years: \$725,000 up front, and then yearly payments starting at \$950,000 and declining to \$600,000 over the next four years.

But opponent Brad Jones says the money's not as much as it should be. Typically, wind-farm projects make payments in lieu of taxes, but that's just a fraction of the taxes they'd pay if the towers were assessed at market value, he says.

And Jones says that wind projects don't lead to lower power rates for nearby residents. In fact, he says, since wind power generally costs consumers more than electricity produced through from other sources, dumping it into the grid could raise overall prices.

**Municipalities across the state** are under some pressure to pass regulations governing wind-power projects: the state is preparing to reinstate a law controlling the siting of power plants. The law - known as Article X of the Public Service Law - is intended to streamline the construction of new power plants, to meet the state's power needs. Article X expired in 2002, and the State Assembly and Senate have approved new versions. Governor Spitzer has also submitted a proposal. Differences in the three bills will have to be reconciled, but all give an appointed board the power to decide where power plants can go, superseding local laws. And all three would cover the location of wind-power projects.

In Ontario County, the Town of Gorham is considering regulations that would permit wind farms, though with restrictions. The proposed regulations declare some parts of the town off-limits for wind-farm development. To build turbines in other parts of town, the property must be rezoned as a wind-farm district. The law also limits the height of towers and turbines to 300 feet and establishes a property-line setback of one and a half times the windmill's highest point.

In Hamlin, half a mile inland from Lake Ontario, an Iberdrola test tower is collecting data on the area's wind patterns. It's a subtle sign that big wind has its eye on the town.

But in living rooms and meeting halls, the issue has been in the forefront.

After Iberdrola approached town officials about locating a wind farm on Monroe-Orleans County Line Road near Hamlin Beach State Park, the Town Board created a Wind Tower Committee to research the issue. Ultimately, the committee was to present recommendations that the board could use to develop wind-tower regulations.

The committee was supposed to make its recommendations to the Town Board in December of this year. But after the state Senate and Assembly passed bills to reinstate Article X, Supervisor Dennis Roach and the Town Board asked that the committee submit its recommendations by the end of July. Committee members presented their report on July 30, although they issued a strong caution that their research was incomplete.

The committee recommended that windmills would have to be set back 1,500 feet from roads and 2,640 feet from dwellings. And it recommended that there be noise limits; that the town require in-depth studies of the effects on birds, bats, and other wildlife; and that there be a full evaluation of the financial impacts of any proposed project.

The committee disbanded August 28.

Hamlin officials still have to draft regulations and hold public hearings, but the Town Board is expected to follow the committee's recommendations. If it does, it's not likely that wind turbines would be banned.

**The issue** has spilled over into Hamlin's politics. Candidates in the November town election include two members of the now-disbanded Wind Power Committee: Linda DeRue, who is running for Town Board, and Jerry Borkholder, who is running for supervisor. The Town Board, they say, halted the committee's work prematurely.

The committee, says DeRue, was meant to make the town look good - to give the appearance of gathering community input.

"We weren't meant to really make progress," DeRue says.

DeRue says she started work on the committee with an open mind, but has since soured on the idea of wind power in her town. The impact is too much for a town like Hamlin, where hundreds of residents would live close to the project. Wind power, she says, is more suitable for offshore development or in scarcely populated areas.

Roach, who is running for re-election, says he pushed for the early recommendations because of the state's action on Article X. (DeRue, he charges, is using her position as a way to "further her political ambitions.") The town has benefited from the committee's work, Roach says, and its recommendations have been given to attorney Dan Spitzer, who has been retained to draft Hamlin's wind-power regulations.

Although he couldn't comment on any specific proposal because Iberdrola hasn't submitted one, Roach says he favors wind power as long as there are good regulations in place.

Roach says he hopes to submit proposal regulations to the Hamlin Town Board by October, "so we can schedule some public information meetings and public hearings."

### The damage question



Hamlin wind-power opponents have posted a Burma-Shave take-off: "The bird was fast / the blade was too / I guess he'll make / some kind of stew."

One of the most frequent criticisms of wind turbines is that they kill birds and bats. Critics, supporters, and wind-power developers all agree that it happens. But there's no agreement on the extent of that damage. National Audubon Society officials say that there isn't enough data about turbines' effects on birds and bats to draw solid conclusions.

Bat Conservation International, a bat conservation organization, estimates that a single turbine can kill up to 50 bats a year. But other studies say that no more birds or bats are killed flying into windmills than they are flying into tall buildings, says Keri Kaminsky, who co-chairs the local Sierra Club's global warming and energy committee. That amounts to one or two birds or bats killed per turbine per year, according to Josh Dorner, a spokesman for the national Sierra Club.

Study results also depend on location. For example, Bat Conservation International says bat fatalities tend to be higher at turbines in or near forests.

But industry studies, which maintain that windmills don't cause excessive harm to wildlife, are often flawed, says Brad Jones, a wind-power critic and activist. In radar studies meant to determine area bird or bat counts, for example, the companies often use low-powered marine radar units that aren't effective at tracking the animals, he says. High-powered radar capable of tracking and counting smaller objects should be used, says Jones.

Critics also charge that the low-frequency noise from the moving blades can be disruptive to animals.

And Jones and Troy Nesbitt, who lives near the site of a proposed wind-power project in Hamlin, insist that there are health risks for humans, too. The low-frequency noise - Jones compares it to bass from a subwoofer, with sound pressure you can feel in your chest - combined with shadow flicker from the blades, can be a problem for people living near the turbines.

In papers she has written about the health effects of wind turbines, Dr. Nina Pierpont, a Franklin County pediatrician, argues that noise and flicker can aggravate migraines, cause headaches, and cause sleep disturbances and associated mood and anxiety problems. Pierpont, who has testified about the health effects of wind turbines before the State Legislature, says turbines should be located at least 1.5 miles away from homes and other places people congregate.

And while some say the noise is no louder than a hushed conversation, that's enough to disrupt people's lives, Nesbitt says.

"If you've got someone talking in your room at night, are you going to be able to sleep?" he says.

Proponents say that wind power's critics exaggerate its ill effects, however, and, they say, new wind turbines are quieter than older ones. And an industry website the American Wind Energy Association suggests that setback regulations and tree plantings can mitigate noise and flicker problems.

### **Bringing wind power home**

When New York State deregulated the electricity market, it gave consumers the ability to choose their power providers. And renewable energy supporters suddenly had a way to put their money behind technologies like hydroelectric and wind power.

Each year, New York consumers select a company to buy their electricity from. Among the dozen suppliers, most offer a renewable-energy option. Typically, the power is some mix of wind power, hydroelectric, and biomass.

Consumers choosing a renewable source will pay for their environmental activism: while standard electricity costs about 7 or 8 cents per kilowatt hour, renewable sources cost around 10 cents an hour.

If you buy wind power, that doesn't mean the electricity arriving at your home comes from a wind turbine, though. The electricity from all of the power plants in New York - including wind turbines and hydroelectric generators - goes into the state's power grid. The electricity you receive is a mixture of the output from all the plants in the area.

If you choose a supplier that sells power from renewable sources, the money you pay for the electricity you consume goes only to those sources, not to coal or nuclear plants. Your choice, then, indicates that there's a demand for wind power, and it helps finance the production of that power.

### **Where the farms are**

Roughly a dozen wind farms are being built or have been proposed in the Rochester and Finger Lakes region - the bulk of them in Steuben and Wyoming Counties. In most cases, the Department of Environmental Conservation is part of the review process, typically for environmental impacts. Following is a list of projects involving the DEC that are in stages of review or construction.

Batavia Wind Farm (118 megawatts): Alabama, Genesee County; under review.

Noble Bliss Wind Park (100 megawatts): Bliss and Eagle, Wyoming County; under construction.

High Sheldon Wind Farm (198 megawatts): Sheldon and Orangeville, Wyoming County; under review.

Dairy Hills Wind Farm (120 megawatts): Perry, Warsaw, and Covington, Wyoming County; under review.

Wethersfield Wind Power (129 megawatts): Wethersfield, Wyoming County, under review.

Prattsburgh Wind Farm (79.5 megawatts): Prattsburgh, Steuben County; under review.

Cohocton Wind One Power (82 megawatts): Avoca, Cohocton, and Prattsburg, Steuben County; under review.

Hartsville Wind Power (50 megawatts): Hartsville, Steuben County; under review.

Howard Wind Project (62 megawatts): Howard, Steuben County; under review.

Paragon (100 megawatts): Schuyler, Steuben County; under review.

Prattsburgh Wind Farm (75 megawatts): Prattsburgh, Steuben County, and Italy, Yates County; under review.

Cohocton Wind (82.5 megawatts): Cohocton, Steuben County; approved by town.

Dutch Hill Wind (42.5 megawatts): Cohocton, Steuben County, approved by town.

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