

# Illinois may be up to bat next to build first Great Lakes wind farm after Cleveland drops project

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Credit: CC0 Public Domain

Before millions of Americans installed solar roofs, before towering wind turbines became a common sight in Midwestern skies, before electric car giant Tesla rolled out its first sedan, there was Icebreaker.

Small but seemingly unstoppable, the Cleveland clean energy project fought for 14 years to become the first [offshore wind](#) farm on the Great Lakes.

Along the way, there were victories: Icebreaker Wind secured a \$50 million grant from the U.S. Department of Energy and won a case before the Ohio Supreme Court.

But a few weeks ago, the Icebreaker team finally admitted defeat, with an announcement that the project had been indefinitely suspended due, in part, to lack of funding.

"We just don't have a path forward right now," said William Friedman, a board member at the nonprofit behind Icebreaker, the Lake Erie Energy Development Corp.

The fall of Icebreaker is a blow for those who dream of clean energy flowing in from the Great Lakes, which have the potential to supply electricity to millions of homes.

But experts and Icebreaker insiders told the Tribune that the pioneering Icebreaker project faced obstacles specific to its advancing age, relatively [small size](#) and lack of state support—obstacles that other projects, including one being considered in Illinois, could potentially avoid.

The Illinois wind farm—proposed in February for Lake Michigan in a bill that notes the potential benefits of a Chicago location—would be larger than Icebreaker and could benefit from strong state support for clean energy.

"Chicago probably could lead the way, and in some ways is leading the way" in the race to build the first Great Lakes wind farm, said Walt

Musial, chief engineer for [offshore wind energy](#) at the National Renewable Energy Laboratory.

The Illinois bill, the Rust Belt to Green Belt Act, passed in the House and is under consideration in the Senate.

"Some people think this is (just) a cute little thing we're doing for energy," said state Rep. Marcus Evans, D-Chicago, who introduced the bill in the House. But he sees the quest for a Lake Michigan wind farm as part of a global clean energy transition.

"We're building the infrastructure to power the world," Evans said.

## **The Icebreaker era**

From a [clean energy](#) perspective, offshore wind is better wind: faster and more consistent, with a smoother flow, according to Gregory Nemet, a professor at the La Follette School of Public Affairs at the University of Wisconsin at Madison.

"You get less electricity out of the same turbine on land," Nemet said. "It's just the difference between having the smooth surface you have on water versus hills and buildings and terrain that introduce turbulence."

And the advantages of offshore wind don't stop there.

With [wind turbines](#) getting bigger, developers can avoid daunting transportation challenges, such as fitting huge trucks under bridges. Offshore turbines can be built at specialized ports and hauled directly to installation sites by barge.

Offshore turbines, which can be situated 15 miles or more from land, are less likely to interfere with scenic views or cause aesthetic complaints,

Nemet said. And they can be placed relatively close to major population centers such as Chicago.

Icebreaker would have benefited from such advantages, as well as the \$50 million Department of Energy grant. For a while, there was also a partnership with a big Norwegian wind developer.

But Icebreaker experienced delays in 2020, when Ohio regulators added a "poison pill" to their approval of the \$126 million, six-turbine project: The turbines would have to power down at night for eight months of the year, to limit harm to migrating birds and bats.

The poison pill was added despite testimony from state experts that a nighttime shutdown was unnecessary, according to the Cleveland Plain Dealer.

"That was a very damaging blow," said Richard Stuebi, a lecturer at Boston University's Questrom School of Business and the first president of the nonprofit behind Icebreaker.

The regulators backed down, but they had already delayed a project that had to meet Department of Energy timetables and deadlines to keep its funding.

Another set of delays was caused by a lawsuit filed by citizens with environmental concerns. Icebreaker emerged victorious in a 2022 Ohio Supreme Court decision, but again, valuable time was lost.

In the end, Icebreaker essentially ran out of deadline extensions from the Department of Energy and had to forgo \$37 million of its \$50 million grant, according to Friedman.

"It's disappointing," Friedman said. "A lot of people worked hard over

the years to try to advance the project."

Still, he remains optimistic about the future of Great Lakes wind power. Great Lakes wind can supply enough electricity to power millions of homes by 2050, according to Musial.

Icebreaker would have produced enough electricity to power about 7,000 homes.

Friedman noted that the proposed Illinois wind farm could get strong state support, something that Icebreaker never obtained.

And he pointed out that Icebreaker was conceived as a relatively small demonstration project that—due to its size—couldn't pay for itself. At this point, he said, it probably makes more sense to go with a big, economically viable project.

The Illinois bill proposes a pilot project capable of generating at least 150 megawatts of electricity, while Icebreaker would have generated about 21 megawatts.

The Illinois bill would set up a fund to help the wind project apply for federal grant money and the bill would require the state to procure electricity from at least one very large offshore wind project on Lake Michigan.

Friedman, the president and CEO of the Port of Cleveland, said he isn't aware of an equally promising Great Lakes offshore wind project.

"I think with the interest that's been sparked in Illinois, you all are probably the next up to bat," he said.

## **Jobs, money at stake**

To make a wind turbine you need to bend steel, turn screws and grind gears.

"It's the stuff that the industrial Midwest has historically done," said Stuebi, and workers in this region have the right skills for the jobs that will be created.

There could also be money for the state of Illinois. On the East Coast, wind developers have paid billions of dollars for leases that allow them to build offshore wind farms.

Most of that money has gone to the [federal government](#), but in the Great Lakes, the states would have control over leasing.

"(States) would presumably be able to keep a lot of the (lease) money," Musial said. "That hasn't been worked out yet, but I would think that would be an incentive to at least look into it."

Offshore wind can serve big cities like Chicago that have large populations, relatively little available land, and few options for local, utility-scale, carbon-free electricity.

One option—referenced in the Illinois bill but not required by it—would be to locate at least part of the project, a specialized port, on the South Side of Chicago, which is already home to a major port.

Offshore wind farms have been supplying power to Europe since the 1990s, and earlier this month a Long Island wind farm became the first commercial-scale offshore wind project in the United States to deliver electricity to the power grid.

"I think we will see wind power on the Great Lakes," said Musial. "The question is more, how much will we see, and when will it happen?"

Large floating turbines could be installed about 15 miles offshore in the Great Lakes, where the winds are good, the birds are fewer and the visual impact is minimized, Musial said.

Among the challenges: There has never been a commercial-scale floating wind farm built in waters that freeze in winter.

Sheets of ice as big as Chicago could collide with floating turbines as tall as skyscrapers, and the turbines would have to be designed to break the ice and deflect it.

"We've done design studies and it doesn't appear to be an insurmountable engineering problem, but because it hasn't been done yet, there's uncertainty about the things that might occur," Musial said.

## **Passing the torch**

There are also regulatory issues: States would have to set rules for wind farms, perhaps by adopting federal regulations. A government report co-authored by Musial recommends forming a Great Lakes wind energy advisory group, with members drawn from government, industry, nonprofits and research institutions.

The report also recommends holding workshops to allow discussion among the affected states, set research priorities and encourage regional partnerships.

Musial said that given the technical challenges and regulatory gaps, it will likely be at least eight to 10 years before we will see a wind turbine operating on the Great Lakes.

"I think what happens next is some kind of regional dialogue among the states that want to do this," he said.

Icebreaker could, technically, be resurrected, should a new source of funding appear. But Friedman doubts that the project, in its current form, will ever be built.

"Too much time went by," he said. "That's part of the whole story of the demise. When you begin planning and designing something many, many years ago, technology changes during that time frame. Costs change. And you get to the point where you almost have to start over."

As for Illinois, Evans refrained from offering an estimate of when a [wind](#) farm could be built, saying at this point it's hard to know.

He knows his next step, though: drumming up support for his bill.

"It's all about moving the ball along," he said.

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