

# America's First Offshore Wind Farm May Power Up a New Industry

**A just-completed project off the coast of Rhode Island, though relatively tiny, is at the forefront of a sea-based transition to renewable energy.**

By JUSTIN GILLIS, AUG. 22, 2016, *New York Times*

BLOCK ISLAND, R.I. — The towering machines stand a few miles from shore, in a precise line across the seafloor, as rigid in the ocean breeze as sailors reporting for duty.

The blades are locked in place for now, but sometime in October, they will be turned loose to capture the power of the wind. And then, after weeks of testing and fine-tuning, America's first offshore wind farm will begin pumping power into the New England electric grid.

By global standards, the [Block Island Wind Farm](#) is a tiny project, just five turbines capable of powering about 17,000 homes. Yet many people are hoping its completion, with the final blade bolted into place at the end of last week, will mark the start of a new American industry, one that could eventually make a huge contribution to reducing the nation's climate-changing pollution.

The idea of building turbines offshore, where strong, steady wind could, in theory, generate large amounts of power, has long been seen as a vital step toward a future based on renewable energy. Yet even as European nations installed thousands of the machines, American proposals ran into roadblocks, including high costs, murky rules about the use of the seafloor, and stiff opposition from people who did not want their ocean views marred by machinery.

“People have been talking about offshore wind for decades in the United States, and I've seen the reaction — eyes roll,” Jeffrey Grybowski said last week in an interview on Block Island. “The attitude was, ‘It's not going to happen; you guys can't do it.’”

Mr. Grybowski and the company he runs, Deepwater Wind of Providence, R.I., have now done it. They had a lot of help from the political leadership of Rhode Island, which has seized the lead in this nascent industry, ahead of bigger states like New York and Massachusetts.

Now, offshore wind may be on the verge of rapid growth in the United States.

Using [a law](#) passed by a Republican-led Congress in 2005 and signed by President George W. Bush, the Obama administration has been clarifying the ground rules and leasing out large patches of the ocean floor for wind-power development. Nearly two dozen projects are on the drawing board, with some potentially including scores of turbines.

Equally important, state governments in recent months have been making big, new commitments to renewable power, driven by a rising sense of urgency about climate change.

Gov. Andrew M. Cuomo of New York set a goal of getting 50 percent of the state's power from renewable sources by 2030, and the state will probably need large offshore [wind farms](#) to help achieve that. In Massachusetts, a Republican governor, Charlie Baker, just signed a bipartisan bill ordering the

state's utilities to develop contracts with offshore wind farms for an immense amount of power, 50 times the expected output of the Block Island Wind Farm.

Other states are looking at wind power, too, and [studies by the Department of Energy](#) suggest that many thousands of these turbines may eventually ring the United States coastline.

If that sounds ambitious, consider that the country has installed some 50,000 wind turbines on land over the past two decades. They now supply roughly 5 percent of the nation's electric power, a figure that reaches double digits in particularly windy states like Kansas and Iowa.

The turbines are easier and cheaper to build on land. But the wind is also weaker on land, and the power the machines produce there is intermittent. The stronger breezes in the ocean can produce steadier power, potentially helping to balance out intermittent renewable sources like solar panels and onshore turbines.

The technology has been proved in Europe, where offshore wind farms as large as 300 turbines are being developed, with each turbine costing up to \$30 million to build, install and connect to the power grid.

But the first major proposal in the United States, an immense project off Cape Cod that was to be called Cape Wind, was too big — 130 turbines — and too close to shore, many experts now believe. It drew ferocious opposition from oceanfront homeowners, gradually lost political support in Massachusetts and appears unlikely to go forward.

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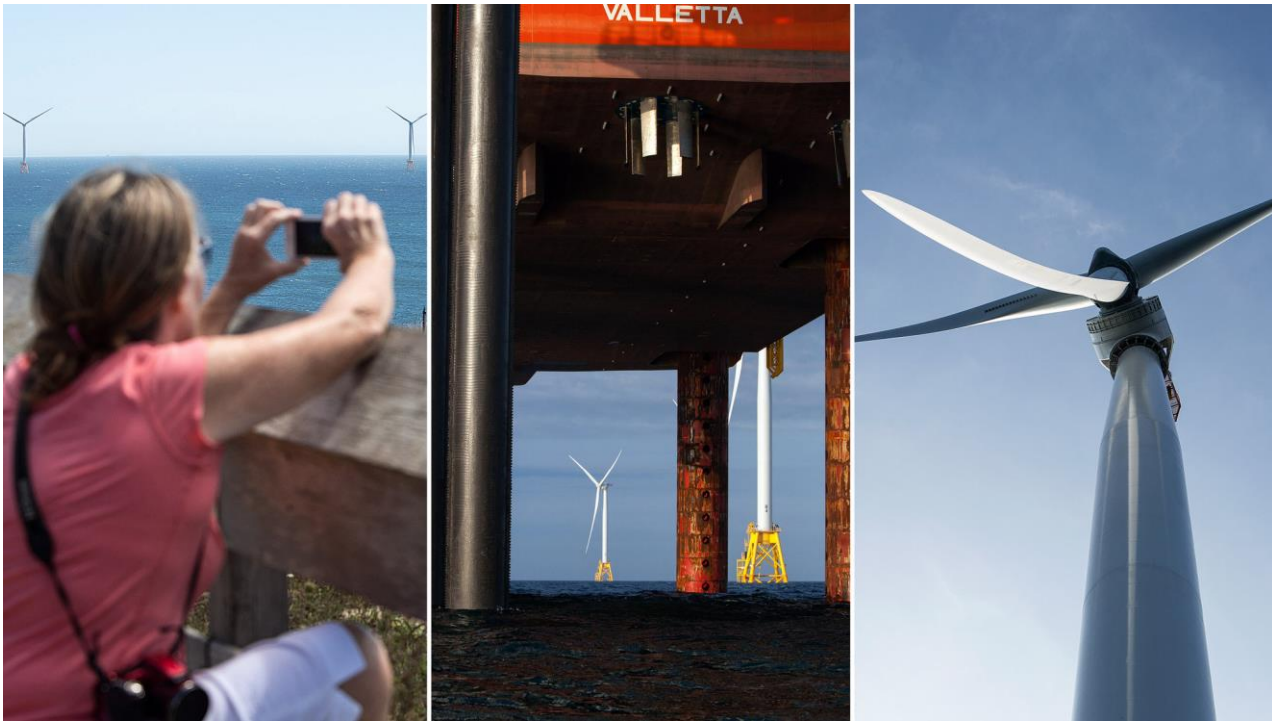
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The companies now trying to start an offshore wind industry are determined not to repeat the mistakes that plagued Cape Wind. That is one reason Deepwater Wind decided to start with a small project.

The focus is still on the Northeast. That region has dense cities with strong electrical demand, high power prices, opposition to new power plants on land and some of the world's stiffest ocean breezes off the coast. And the water remains relatively shallow many miles from shore, so wind farms could be installed far enough away that most of them would not be visible from the beaches.

With Northeastern states committing to the idea, the big question is: How much would it cost to get thousands of offshore turbines up and running?

When the first offshore projects were built two decades ago, European nations had to promise the developers extremely high prices for the electricity generated by their turbines, sometimes three or four times the wholesale power price, to get a new industry going.



From left: Mimi LeVeille, a local resident, photographing the Block Island Wind Farm from the shore of New Shoreham, R.I.; some of the wind farm's turbines as seen through the main installation vessel, which erected them; one of the project's turbines, which are to be cranked up in October. Credit Kayana Szymczak for The New York Times

Since then, offshore wind turbines have become a big business in Europe, worth billions, and the companies installing them have been able to create economies of scale. Recently, European nations have scrapped their old subsidy methods and have used competitive bidding to drive down the cost of the projects.

In some ways, the United States benefited by waiting for the industry to mature, as it can now take advantage of those falling costs. Installation is still pricier here than in Europe, and may be for a while, because few American companies have invested in the boats and other gear necessary to do the work.

The Block Island turbines were built overseas by a division of General Electric and were installed by a ship from Norway, brought over at a cost of millions of dollars, with help from an American vessel.

Yet if states go forward with their plans, experts say the costs are likely to fall sharply as domestic industry scales up to meet the demand. On the Block Island project, a company in Houma, La., won the contract to build the metal foundations in the water, and other Gulf Coast businesses that have long built offshore oil structures see wind power in the Northeast as a potential new market.

For now, the construction of the first wind farm off an American coast sends a simple message to governments, investors and citizens: It can be done.

“Spectacular!” Mr. Grybowski said from the deck of a boat last week as he watched the final stages of construction.

The Block Island project was a marriage of Rhode Island political will and New York financial expertise. Initial financing for the \$300 million project came from the D. E. Shaw Group, a big investment firm based in Manhattan.





The project's wind turbines, about three miles away, can be seen from shore on Block Island, but island residents have been largely supportive. Credit Kayana Szymczak for The New York Times

D. E. Shaw's head of United States private equity investment, Bryan Martin, had invested huge sums over the years on the firm's behalf in onshore wind farms, convinced that renewable energy was poised to displace fossil fuels. He saw offshore wind power as the next step and has been pushing the Block Island wind farm and other Deepwater Wind projects forward for more than a decade.

The turbines are about three miles off Block Island and can be seen easily from land. That drew some opposition, and could have been fatal.

But Block Island is a rustic vacation spot where residents turned out to be largely supportive of the project. Not only does it help the environment, but it will connect their power grid to the mainland for the first time, giving them a more reliable supply.

Competitors are moving to challenge Deepwater Wind for the coming wave of offshore contracts, but the company hopes to hold its lead and win the next project, a proposed wind farm 36 miles off Montauk, N.Y., meant to supply the power-hungry South Fork of Long Island.

"I do believe that starting small has made sense," said Mr. Martin, who is also Deepwater Wind's chairman. "I would say that the next projects are going to be substantially bigger."