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Preparation for groundbreaking offshore wind farm project begins in Atlantic City

By Abby Gruen/The Star-Ledger
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Patti Sapone/The Star-Ledger

Fishermen's Energy of New Jersey holds a press conference as they prepare to launch their environmental monitoring buoy, the first step to developing a wind farm. They are one of the first wind farm developers in the state.

ATLANTIC CITY -- An 85-foot research vessel pulled away from Barney's Dock in Atlantic City last Thursday, an American flag fluttering from its rigging, and a yellow painted buoy perched on its stern.

Riding the tide, the trawler headed for a spot 2.8 miles as the crow flies from Tennessee Avenue and the Boardwalk before dropping the buoy, bristling with scientific instruments, into the cold waters of the Atlantic.

It is the beginning of a two-year wind and whale study for what may end up being the nation's first offshore wind farm, where pylon-mounted turbines perched high above the waves, driven by huge, aerodynamic blades spinning freely to catch the wind, are expected to generate enough power one day to light up thousands of homes.

New Jersey is in a race to have the first offshore wind-generated power project, and the state just might beat Massachusetts, where U.S. Interior Secretary Ken Salazar last week announced the approval of a 130-turbine wind farm in Nantucket Sound. That project, under review for nine years, continues to be threatened by lawsuits.

The issue has taken on renewed urgency as the ongoing oil spill in the Gulf of Mexico, which threatens wildlife and beaches along the Louisiana and Florida coastline, has dampened enthusiasm for offshore drilling. On Friday, a group of New Jersey lawmakers called for a moratorium on oil exploration off parts of the Atlantic Coast, and urged the federal government to speed up

the permitting process for offshore wind farms.

The shore of the Garden State slopes to a shallow continental sea shelf — perfect for locating turbines — and at least four sites are under study. Three are in federal waters as far as 20 miles from shore. A fourth, the focus of the research being conducted out of Atlantic City, is in state waters much closer to land.

The technology of harnessing energy from the wind harkens back to the iconic windmills of Holland, updated by modern materials. Conical towers are typically anchored to the seabed, rising above the ocean, where a nacelle on top houses a generator spun by helicopter-like rotors. The electricity produced is then brought ashore through underwater cables to land-based substations for distribution.

Wind farms, planted like hundreds of steel trees along barren hilltops and wind-swept ridges, are already producing electricity around the world. But sites offshore offer unique advantages. The wind blows far more steadily at sea and the sound and vibration from spinning rotors don't bother neighbors.

However, the challenges of building and maintaining equipment that will hold up in the harsh marine environment of the coastline, and opposition to the esthetics of the turbine towers, has made for slow going at sea. The Cape Wind project in Massachusetts, for example, has met with heavy resistance from critics who say the project will endanger wildlife and mar historic vistas.



New Jersey officials say offshore wind energy could supply 3,000 megawatts — far more than a nuclear power plant — while helping reduce greenhouse gas emissions by 20 percent in the next decade.

"We can take the lead on wind energy," said Gov. Chris Christie at an energy forum last month. "New Jersey can be the first state to get that energy and harness it."

Testing the waters

Last year, the state Board of Public Utilities gave development rights, and \$4 million in rebates, to three off-shore wind companies to build test towers. The companies were granted interim licenses for four proposed sites off Jersey's shore.

NRG Bluewater Wind of Princeton has proposed a 348-megawatt project more than 13 miles out, with 80 to 100 turbines.



Daniel Cohen, president of Fishermen's

Garden State Offshore Energy, a joint venture between Deepwater Wind, of Hoboken, and PSEG Renewable Generation, will be building a test tower for its 345-megawatt project more than 16 miles out.

Fishermen's Energy of Cape May will use its buoy to test a site in state waters for a proposed 20-megawatt project less than three miles out, where a meteorologic tower is not needed. The cost of building nine

Energy of New Jersey, speaks during the press conference.

turbines there is roughly \$100 million, about \$5 million a megawatt. The company is planning a 350-megawatt wind farm some 10 miles out to sea.

So far there has been little opposition in New Jersey to wind energy. Indeed, in Atlantic City, wind power has become a tourist attraction. Trolley tours go out to the five land-based windmills operated by the Atlantic County Utilities Authority, according to Elaine Zamansky, a spokeswoman for the Atlantic City Convention & Visitors Authority.

"People do stop," she said. "I'm not sure there would be any objection to more of them off shore.

Surveys of residents and visitors by developers have found overwhelming support, and while many environmental groups support the projects because they provide clean energy and create jobs, the New Jersey Sierra Club, which supports more renewable energy from the wind, said the oil spill in the Gulf of Mexico demonstrates the starkness of the choices to be made.

"Right now, decisions are being made in Washington on whether to continue with the fossil foolishness of the past or move to clean energy," said Sierra Club director Jeff Tittel. "This week, we see both happening: the approval of the wind farm off Massachusetts and the oil spill in the Gulf of Mexico. We can't have it both ways."

Urging caution

Yet not all advocates agree. Tim Dillingham of the American Littoral Society, an ocean and avian conservation group, cautioned against a rapid expansion of offshore wind generation without further environmental studies.

"Our concerns are making sure that these large industrial facilities do not harm the ocean, which they have the potential to do," he said. "We think the ocean provides a tremendous amount of benefit to New Jersey right now. We need to take good care of it to make sure it continues to do so."

Dillingham noted that whales and marine mammals now migrate off the coast of New Jersey, and the state is a major migratory pathway for birds.

"What's the impact of putting those structures in the migratory pathways?" he asked. "We're talking about 1,000 windmills or more. That is a lot of structure out there."

The Department of Environmental Protection is expected to release a \$7 million, two-year study of the wildlife in the wind turbine zone in June.

Offshore wind power is going to be a component of any portfolio that addresses the issues of global warming, said Eric Stiles, chief operating officer and vice president for conservation and stewardship at the New Jersey Audubon Society. But he said it must be approached with reason.

"You do it in areas where you can expect a high wind return with acceptable impacts," he said. "It's not rocket science. There are zoning models and we've been doing it on land for over a century."

For Dan Cohen, a second-generation fisherman, it represents a new catch to haul from the sea. Cohen, now president of Fishermen's Energy, first opposed wind farms because he thought they would damage his fishing grounds.

"Then I realized that all of us in society have a responsibility to sustainability," he said.

Staff writer Ted Sherman contributed to this report.

