

## Turbine plan brings whirlwind of questions

### Proposed Rehoboth Beach wind farm raises environmental, cost concerns

By *JEFF MONTGOMERY, The News Journal*

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For years, environmental groups have viewed electricity-producing wind farms with a touch of reverence: energy from the natural rhythms of the air, without the need for fossil fuels or polluting greenhouse gases.

But questions about the risk, cost and environmental impact of offshore wind threaten to slow what some call a headlong state rush to approve a \$1.6 billion, 150-turbine wind farm off Rehoboth Beach, along with one of two on-land, backup natural gas-powered generating plants.

Concerns about Bluewater Wind LLC's state-endorsed venture range from the as-yet unexamined risks to birds and aquatic life to the cost to ratepayers and the public at large. Some fear that the massive project could burden **Delmarva Power** customers with needlessly higher rates while also discouraging development of better and cheaper alternative energy solutions.

Environmental risks remain largely unstudied in the proposed wind-farm area, situated amid flyways for migrating birds and habitat for a variety of aquatic life.

Also unclear are the consequences of potentially closing off or restricting access to a 30-square-mile section of ocean heavily trafficked by shipping and recreational boaters, an area adjacent to Delaware's beaches.

"As an environmentalist, I can't support bypassing a robust permitting process," said Alan Muller, who directs the environmental group Green Delaware. "I think this is going to be a problem for a lot of groups that have hung their hats on wind. Are they going to turn around and say, 'Let's shove this through,' without considering the implications?"

Bluewater said it has satisfied environmental concerns.

"We have worked with our expert environmentalists, ornithologists, marine specialists. We are very comfortable that, whatever state law or federal law is to be applied, we can meet them," said Bluewater spokesman Jim Lanard.

Bluewater plans to apply for approval for a temporary offshore study platform in the proposed wind farm area in the spring, Lanard said. The temporary platform would serve as a base for the company's first wind studies at turbine heights, as well as other weather studies and a two-year review of both bird and marine habitats, he said.

Few details are available about the ultimate cost to ratepayers, however, if the Public Service Commission requires **Delmarva Power** to sign a 25-year contract with Bluewater and a separate contract for a natural gas plant to serve as a backup.

The latest available wholesale figures for Bluewater's offer have been higher than the published rates for on-land wind farms or natural gas plants. PSC analysts have yet to estimate the additional cost to ratepayers during

interruptions or downturns in Bluewater's weather-dependent operations, problems that would at times force **Delmarva** to buy from other electricity producers when market prices are highest.

The cost issues have divided the state's environmental community along with some state lawmakers who favor conservation and smaller-scale additions to electricity supplies.

Delaware's Public Advocate last week warned that the PSC plan has "several shortcomings" that could mean greater risks and costs for consumers.

Wilmington resident Melissa Epstein has no such qualms.

"I think a lot of people who don't want this to happen are people more in the upper echelon, who don't want to see it in the distance from their million-dollar homes," Epstein said. "I think wind is a good idea."

### **Environmental questions**

Bluewater's project would overlap an area off the mouth of the Delaware Bay where horseshoe crabs are protected from fishing. Its foundations would burrow about 90 feet into seabed in water 35 to 75 feet deep, waters plied by schooling and migratory fish. The turbine blades would sweep up to 440 feet into skies traveled by migratory shorebirds.

The American Littoral Society, a national conservation group, and the National Oceanographic and Atmospheric Administration have warned that offshore wind farm sites need to be studied to prevent or minimize harm to protected turtle species, bottom feeding sea life and migratory fish. Electromagnetic waves from new networks of buried and underwater cables, NOAA warned, could disrupt senses that some types of fish need for hunting and navigating.

NOAA officials urged the federal government "to proceed with extra caution when establishing regulations to govern these activities."

In Europe, where several offshore wind projects have been built, Greenpeace and the World Wildlife Fund have supported them. Danish officials have reported that offshore ventures in that country kill few birds, and actually increase the amount of marine life near turbine supports.

"In general, and compared to other energy sources, the environmental impacts associated with wind power are small," The World Wildlife Fund reported in a position paper released in Great Britain in 2003. The organization also called for careful study of environmental impacts before building each site.

New Jersey regulators last week announced that \$19 million in state funds would be available for the early stages of a pilot offshore wind project in that state -- a venture that Bluewater officials said they may pursue.

But New Jersey's environmental agency separately reported plans to award \$4.5 million worth of contracts for an 18-month battery of environmental studies on the potential effect of offshore wind farms before moving ahead with a proposed 80-turbine pilot project near that state's coast.

"We are looking at this issue in a way that is scientifically robust and ecologically protective," said Jeanne Herb, director of policy, plans and science for the New Jersey Department of Environmental Protection.

"That's significant, in that other states and the federal government, as they have looked at other offshore wind projects, have not committed that level of attention," she said.

In Delaware, utility regulators have tentatively endorsed what would become the nation's largest offshore wind project without any independent state or federal evaluation of environmental consequences.

Bluewater's environmental requirements are heavily dependent on still-unsettled federal rules for offshore alternative energy projects, such as tidal generators and wind farms, outside state waters, but still on the Outer Continental Shelf.

Congress gave the Minerals Management Service responsibility for regulating alternative energy activities in the offshore area.

MMS, however, recently delayed the release of new rules for assessing the environmental impact of alternative energy projects. Final regulations needed for permit-writing and leasing could be as much as a year away.

Draft versions of the federal plan already have been criticized as "flawed, incomplete and lacking scientific justification" by Clean Ocean Action, a conservation group active in New York and New Jersey, the American Littoral Society, American Bird Conservancy and other organizations.

### **Environmental divide**

In Delaware, local leaders of the Audubon Society and Sierra Club have strongly supported the Bluewater project over coal-based or other conventionally-fueled power plants.

"Wind energy is the fastest-growing source of power on the planet," the Sierra Club Delaware Chapter recently advised its members. "Wind power is a renewable resource that emits no carbon dioxide. The wind farm would provide a substantial fraction of Delaware's electricity and is both local and sustainable."

But that endorsement came in the wake of a leadership struggle.

David Keifer, a former Sierra Club Delaware Chapter chairman, said his skepticism about the project contributed to his loss of a Sierra Club leadership post last year, and a general shakeup in the group that pushed doubters to the margins.

"There are a number of us who are concerned about how to put this thing in the proper context, as opposed to just plowing forward with one proposal from one company to do one thing," Keifer said. Too few groups are asking questions about Bluewater's plans, and too many are accepting the company's predictions on faith, he said.

"There's a place for wind power, but it's not a question of religion," Keifer said.

The American Littoral Society, American Bird Conservancy and several sportfishing groups have called for additional studies of threats to birds from turbine blades. Other concerns focus on noise disturbances and the possible hazard of underground cables.

"It's irresponsible to site these facilities without evaluating what their impact is going to be on the ocean environment, the living resources that are out there such as birds, fisheries and traditional uses of the ocean, like commercial fishing," said Tim Dillingham, executive director of the American Littoral Society. "It's a boondoggle."

Dillingham, who served on a New Jersey panel that studied offshore wind, said that several thousand wind turbines would be required to meet New Jersey's goal of using renewable energy for 20 percent of its needs.

"We think that offshore wind is inefficient, overly expensive and is probably a poor investment of public resources toward trying to solve the very real problem of greenhouse gases and global climate change," he said.

Although Bluewater officials have said the ocean tract meets all safety requirements, Bluewater's dozens of windmills would stand between the main approach lanes to the Delaware Bay, the nation's second-leading destination for supertankers. More than a million barrels of crude oil pass by the proposed wind farm area daily, bound for the six large oil refineries found along the lower Delaware River.

"Just off the top of my head, I dislike the location," said Michael Linton, president of the Pilots Association for the Bay and River Delaware. Linton added that he wanted more information about the plan.

### **Cost a hurdle elsewhere**

Delaware Public Service Commission staffers are expected to report on the Bluewater's terms and those of two natural gas bidders on Oct. 29, with the full PSC to consider the issue as early as Nov. 20.

Reviewers have pushed steadily toward a final recommendation even as offshore wind farm proposals in Texas and New York have been shelved over cost concerns.

Bluewater based its current price on a 105-megawatt average delivery to **Delmarva**, with another 17 megawatts reserved for the Delaware Municipal Electric Corporation. **Delmarva's** contract agreement would be for up to 300 megawatts. The plant could produce near its full 450 megawatts during high wind periods, and none during low-wind conditions and severe storms. Production could be lowest during the summer, when needs are highest.

As a result, the PSC required **Delmarva** to consider long-term contracts with one of two other new natural gas-fired power plants that would be built as "wind-firming" support sites in Sussex County.

"The whole project in Delaware is on one scale laughable," said Lisa Linowes, who directs the New Hampshire-based Industrial Wind Action group.

"They said that they recognized that the wind doesn't blow all the time, so they're adding a 300-megawatt gas plant. In effect, we're building the generation twice," said Linowes, whose group opposes major wind development projects.

### **Experimentation**

While some regard offshore windmill generation of electricity as still in the experimental stage, land-based wind generation is firmly established.

FPL Energy, the nation's leader in onshore wind production, flirted with an offshore project for Long Island Power Authority. That project was tentatively canceled over cost concerns. One market analyst said that FPL has since described U.S. offshore wind ventures as still largely in the research and development stage.

"I don't think that FPL is treating offshore projects seriously," said Angie Storzynski, an analyst with HSBC. "They view it as expensive -- more of a research and development area. It's the most expensive energy out there."

Land-based wind farms are a different story, Storzynski said. FPL plans to develop 8,000 to 10,000 megawatts of electrical capacity from on-land wind turbines during the next five years.

At least 27 offshore wind farms are already in operation, mostly in the North Sea and Baltic Sea Area off Germany, Denmark, Sweden and the Netherlands.

Sen. Harris B. McDowell III, D-Wilmington North, sponsored legislation signed by Gov. Ruth Ann Minner earlier this year that created a new "Sustainable Energy Utility" program that would emphasize both energy conservation and development of small-scale solar, wind and other "green" electricity projects.

Last month, Minner and McDowell visited Denmark to examine an offshore wind farm.

"Before we commit to what is apparently an experimental thing, we have to fully understand what the impact is going to be," McDowell said. Electricity costs in Denmark, he added, are more than double those in Delaware.

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## OFFSHORE WIND POWER FOR DELAWARE

### Pros

- Generates electricity without air pollution
- Reduces dependence on imported oil or natural gas
- No releases of greenhouse gases blamed for global warming
- Curbs reliance on electricity purchased from plants in other states
- Free wind protects customers from rising fuel prices

### Cons

- Large upfront construction cost
- Customers pay "green" premium for wind power and volatile prices for replacement power on calm or stormy days
- Weather variations could limit average power to 25-35 percent of potential
- Unknown effect on birds, coastal resources
- May require replacement after 20-25 years
- Requires leasing of large ocean area to private interests

### *Wind with a twist*

**WHAT:** Bluewater Wind proposed \$1.6 billion, 450-megawatt offshore wind farm east of Rehoboth beach.

**WHY:** Public Service Commission directed **Delmarva Power** to negotiate a deal for wind to stabilize prices, supplies.

**HOW:** **Delmarva Power** would commit to buy up to 300 megawatts from Bluewater's plant (average 105 megawatts).

**BACKUP:** **Conectiv** and NRG Energy are competing to supply **Delmarva** when wind falls short.

**COSTS:** Still under PSC review

**PRICE:** Bluewater offered \$112 per megawatt in 2007 dollars, with inflation adjusters to cover higher steel and other construction expenses. Some terms withheld.

**COMPARED WITH:** Smaller **Conectiv** natural gas plant, once favored by PSC consultant, priced at \$86.63 per megawatt in 2005 dollars.

**UNKNOWN:** Bluewater would sell to **Delmarva** or keep "renewable energy credits" potentially worth tens of millions,