

Let Bluewater really compete

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For a variety of reasons, the proposed Bluewater wind farm is a bad idea and should be rejected. I propose an alternative that the state should consider.

I am a supporter of non-polluting power (who isn't?) and have helped build a small demonstration windmill at the [University of Delaware](#) for engineering students to study.

The proposed facility off the coast of Rehoboth Beach has some advantages. Being miles offshore, problems with bird and bat kills and noise should be minimized. The windmills will be mostly invisible from the beaches.

The main problems are the Bluewater proposal will be very expensive and will supply relatively little power.

A wind generator's output is strongly [dependent](#) on the wind, being proportional to the cube of the wind velocity. A 20-mph wind produces almost 2.4 times as much power as a 15-mph wind.

[Engineering](#) experience in Europe indicates that wind farms average about 20 percent of their maximum capacity. The Bluewater proposal is for a 450- megawatt system, but Delmarva would be obligated to buy only 300 megawatts at a time. The average output would be about 60 to 90 megawatts -- only 5 percent to 7 percent of Delaware's current electrical load.

Even this estimate likely overstates the wind farm's contribution. Not only do winds vary, they vary unpredictably. Even with the best hourly weather forecasts, prediction errors will be made.

To counter these random variations and provide a constant voltage on the electrical grid, some extra power will be generated -- and wasted.

Estimating electricity cost is tricky, as there are no offshore wind farms in the United States. There are some in Europe, but they have been operating for only a few years and do not have to withstand the occasional hurricane.

The state hired an independent consultant to evaluate the proposal. If only the Delmarva Power "standard offer service" customers pay (basically [homeowners](#) and small businesses outside the towns served by independent suppliers), then the increased above-market cost will be \$13 or \$14 per month per household in 2007 dollars. If all electric customers share the cost, the above-market cost drops to about \$5 per month per household.

If the state goes ahead with the Bluewater proposal, it is only fair that all customers share this cost.



The Mountaineer Wind Energy Center on Backbone Mountain near Thomas, W. Va., is in the region. AP

The consultant estimates the break-even time, when the above-market cost is zero, to be between 2028 and 2036. After that, power from wind is estimated to be cheaper than the alternatives.

Delmarva Power argues that even these estimates are low as they do not include various hidden costs that are not part of the direct bid. For instance, at night in the spring and fall electricity demand can fall below 300 megawatts. If wind is blowing strongly, Delmarva would have to buy 300 megawatts and sell any excess on the open market, likely at a loss. This loss would be absorbed by Delmarva's customers, and is not reflected in the consultant's estimates.

In summary, the wind proposal will replace only a small fraction of total consumption and do so at a substantial cost.

Are there alternatives? Yes; Delaware could import cheaper "green power" from other states. An organized conservation program, such as replacing old motors with new ones and electric water heaters with solar heaters, could almost certainly save up to 7 percent.

Rather than trying to guarantee a price, the state should do the following:

Grant Bluewater a permit to build a wind power facility off the Delaware coast. Require Delmarva Power to negotiate with Bluewater regarding where and how the wind farm will connect to the grid.

Rather than requiring Delmarva Power to buy power from Bluewater, allow Bluewater to compete in the green power market, selling electricity at whatever price the market will bear.

This proposal shifts the risks to Bluewater, but increases its potential reward. Delaware and other states have mandated future demand for green power. Bluewater should have no trouble selling to this market.

If Bluewater profits, the state will see increased income tax revenues. Future wind power projects will benefit from the knowledge gained.

I hope the wind farm is a success, but I cannot support asking Delaware ratepayers to absorb the many risks.

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