

# Wind-Power Politics

By Mark Svenvold

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*“The moment I read that paper,”* the wind entrepreneur Peter Mandelstam recalled, “I knew in my gut where my next wind project would be.”

I was having lunch with Mandelstam last fall to discuss offshore wind in general and how he and his tiny company, Bluewater Wind, came to focus on Delaware as a likely place for a nascent and beleaguered offshore wind industry to establish itself. Mandelstam had been running late all morning. I knew this because I received a half-dozen messages on my cellphone from members of his staff, who relayed his oncoming approach like air-traffic controllers guiding a wayward trans-Atlantic flight into Kennedy. This was the Bluewater touch — crisp, informative, ever-helpful, a supercharged, Eagle Scout attentiveness that was part corporate style, part calculated public-relations approach. It would pay off tremendously in his company’s barnstorming campaign of Delaware town meetings and radio appearances to capture what he had reason to believe would be the first offshore-wind project in the country’s history.

These features were, unsurprisingly, manifestations of Mandelstam himself, who arrived in a suit and tie, a wry smile, his wiry hair parted in the middle and tamped down like someone who had made a smooth transition from a Don Martin cartoon. Mandelstam, a 47-year-old native New Yorker who is capable of quoting Central European poets and oddball meteorological factoids with ease, had long committed himself — and the tiny company he formed in 1999 — to building utility-scale wind-power plants offshore, a decision that, to many wind-industry observers, seemed to fly in the face of common sense. Offshore marine construction was wildly, painfully expensive — like standing in a cold shower and ripping up stacks of thousand-dollar bills. The very laws for permitting and siting such projects had yet to be enacted. Indeed, the recent past was littered with failed offshore wind projects. Never mind that there were so many more opportunities in the continental United States to build land-based wind farms, which cost half as much as offshore projects. While wind-energy companies in Europe were moving offshore at great speed, neither Mandelstam nor anyone else had ever successfully built an offshore wind farm in the United States. Failed, stalled or delayed projects sounded like a catalog of coastal shipwrecks: Long Island, Padre Island, Cape Wind. Entrepreneurs, of course, need to anticipate the next market, but when it came to offshore wind, Mandelstam seemed too far ahead of the curve to ever succeed.

Then in 2005 Willett Kempton, a University of Delaware professor in the school’s College of Marine Studies, began teaching a course on offshore wind power. “In our department,” Kempton recalls, “most of my colleagues were working on some aspect of the global-warming problem.” Coal-fired power plants, a major contributor of carbon in the atmosphere, had recently been linked in Delaware to clusters of cancer outbreaks and to high levels of mercury in the state’s fishery. One of the first things Kempton and his class did was go down the list of clean-energy options for Delaware — “It was a pretty short list,” he said. Solar power was still far too expensive to be economically sustainable. And the state had no land-based wind resource to speak of. But a team of students, led by Amardeep Dhanju, became curious about measuring the winds off the coast to determine whether they might serve as a source of power. What he found was that Delaware’s coastal winds were capable of producing a year-round average output of over 5,200 megawatts, or four times the average electrical consumption of the entire state. “On the wholesale electricity markets,” Dhanju wrote, “this would produce just over \$2 billion” in annual revenue.

It so happened that the day Dhanju's semester-long research project was discussed, Kempton had invited several wind entrepreneurs to class. Mandelstam was the only invitee to show up in person. It was then that Mandelstam had his eureka moment. The amount of power Dhanju was describing, Mandelstam knew from Kempton, was but a small fraction of an even larger resource along what's known as the Mid-Atlantic Bight. This coastal region running from Massachusetts to North Carolina contained up to 330,000 megawatts of average electrical capacity. This was, in other words, an amount of guaranteed, bankable power that was larger, in terms of energy equivalence, than the entire mid-Atlantic coast's total energy demand — not just for electricity but for heating, for gasoline, for diesel and for natural gas. Indeed the wind off the mid-Atlantic represented a full third of the Department of Energy's estimate of the total American offshore resource of 900,000 megawatts.

The Mid-Atlantic Bight was particularly attractive to Mandelstam because offshore winds blow strong and steady throughout the day, which means offshore wind is more likely than land-based wind in the Northeastern United States to generate electricity when demand is high. More important, offshore wind farms, Mandelstam explained, can be built close enough to big, power-hungry cities or "load centers" to avoid construction of expensive and politically unpopular transmission lines. "That's a chronic problem facing land-based wind in West Texas or in California," Mandelstam said, "or in the Dakotas, or Wyoming," where wind resources are often many hundreds of miles removed from the cities they are meant to serve. In Europe, Mandelstam said, developers are planning to build upon this inherent advantage by connecting offshore projects to one another using high-voltage direct current cables. In America, such a system could supply the needs of local load centers and also export huge amounts of electricity, becoming part of a long-sought coastal megagrid, a robust, highly efficient, undersea transmission system capable of dispatching electricity anywhere along the East Coast, from Massachusetts to Florida.

As I listened to Mandelstam, the contours of what seemed to be a savvy and competitive business plan began to sharpen into focus. His aim was to exploit a huge, unheralded and presently untapped energy resource precisely at a time and place of colossal energy demand — demand that is increasing at roughly 2 percent every year. Renewable Portfolio Standards and other state-driven initiatives requiring that a percentage of power (to increase annually) be generated by renewable sources, would, in effect, guarantee a growing market for developers like Mandelstam. Add to this the recent, spectacular rise in fossil-fuel energy prices, which has galvanized public attention around the need for alternative energy sources, and it seemed that Mandelstam — by dint of being first in what some were predicting could be a trillion-dollar-plus build-out, had a pretty good shot at becoming king of the Mid-Atlantic Bight.

In late 2005, however, it was safe to say that nobody outside of Kempton, a cluster of grad students and Mandelstam himself imagined offshore wind power actually coming to Delaware. Which is not to say they shouldn't have been thinking about it. Delaware citizens had recently experienced the kind of awakening toward which most environmentalists believe we're all headed — a collective recalibration of what it costs to keep the world up and running. It began with the restructuring of the state's electricity market and the subsequent removal of price caps, which had for seven years kept electricity prices artificially low. "Everything skyrocketed," recalls Karen McGrath, formerly of the Chamber of Commerce for the small coastal communities of Bethany-Fenwick. "Prices went up anywhere from 60 to 100 percent." The state's General Assembly responded by passing a law — House Bill 6 — that called for Delaware to generate more of its own electricity. Under the new state law, the state's Public Service Commission solicited proposals for the construction of an electric-power plant. Wind power was not even mentioned, but, as Willett Kempton later recalled, "it wasn't excluded, either."

Kempton brought this fact to the attention of Mandelstam and others in August 2006, and Mandelstam and his staff flew into action. "We worked day and night from August until December," Mandelstam said. He knew that his plans for an offshore wind farm would face fierce opposition, as had other projects, perhaps none more famously than Cape Wind in Nantucket Sound. Conceived in 2000, when the price of oil was \$25 a barrel, the Cape Wind project remains the best-known unbuilt offshore wind farm in America. A small, vocal, well-organized and politically connected minority argued that a wind farm would irrevocably spoil a pristine, treasured seascape, a sentiment perhaps most famously expressed in a New York Times editorial by Robert F. Kennedy Jr.: "I wouldn't build a wind farm in Yosemite Park. Nor would I build one on Nantucket Sound."

Against such pronouncements, and to the question of a sacrosanct American horizon best reserved for God's signature, Mandelstam is sometimes prompted, in a way that seems inevitable in a story like this, to evoke the windmills in Cervantes's "Don Quixote." "Quixote is a romantic and chivalrous knight who doesn't want anything to change," Mandelstam said. "He actually says that windmills are monsters with which he is going to do battle. That's a delusion that he projects onto these windmills." To combat these perceptions, Mandelstam hired a British consultant, RPS, that specializes in computerized models to show Delaware citizens exactly how the wind farm would look after its construction. Mandelstam says he thought these would help Delaware citizens to see offshore wind turbines as Sancho Panza, Quixote's sidekick, saw them not romantically but practically, as a new technology benefiting humanity. "I think it's a very powerful literary example of a human phenomenon," Mandelstam said. "When you see wind turbines rather than imagine them in your mind's eye, then you perceive a new object in the landscape for what it is rather than projecting upon it your own fear." It helped, of course, that Bluewater's turbines would be sited more than 12 miles out to sea, as opposed to the 5 to 7 miles for Cape Wind, so that, once constructed, the turbines would appear on the horizon no larger than half the size of a thumbnail, and then only on clear days.

"The Europeans see offshore wind turbines as sentinels," Mandelstam told me, "protecting them from energy domination by foreign powers. When you put that against a few winter days of seeing turbines on the beach as you walk your dog, I think that's a very easy trade-off."

Mandelstam's visual consultants showed the public what the turbines would look like when built. He hired consultants to address public concerns about the effects of wind turbines on migrating birds. He commissioned private meteorologists to verify the wind resource. And he and his team met regularly with the Delaware public to discuss the impact of the wind farm on ratepayers. "In one 21-day period, we spent \$380,000 to do a geophysical investigation of the sea floor," Mandelstam said. "On land, the same geophysical work would cost \$5,000." Four months and \$5 million later, on Dec. 22, 2006, Mandelstam and his staff submitted the Bluewater Wind Park proposal, a 3,400-page document describing a 200-turbine, 600-megawatt, \$1.5 billion offshore wind farm that would serve as a new electrical power plant.

Still, Bluewater was up against two energy Goliaths. NRG, a generation company with \$5.9 billion in annual gross receipts, proposed building a coal-fired power plant; Conectiv, a subsidiary of Pepco Holdings, a Washington-based electric company with annual revenues of \$8.3 billion, filed to build a natural-gas power plant. Conectiv's sister company Delmarva Power immediately began to wage a negative advertising campaign. It used radio spots to try to turn people against wind energy, as did NRG, whose clean-coal plant was well represented by Mike Houghton, an NRG lobbyist and a major fund-raiser for Gov. Ruth Ann Minner. Six months before the bids were officially due, Governor Minner publicly endorsed NRG's clean-coal proposal.

And yet, despite the long odds against Bluewater, Delaware's citizens began swinging heavily in favor of the offshore wind project. They were receptive to Bluewater's director of communications, Jim Lanard, who appeared weekly on a local talk show. "When I first invited Jim onto my show," recalls the host, Randy Nelson, "nobody cared about wind power, but within five months, Jim would come on, and all the phone lines would light up." According to Nelson, the Bluewater project captured the attention of a citizenry hungry for an alternative to coal-fired plants. "Out here, the Delaware shore is all we've got for an economy," he says. "And the coal plant seemed to put the Delaware shore at risk. It's hard to overstate just how much people hated that." For his part, Mandelstam waged a low-budget campaign of town meetings throughout the state, emphasizing price stability how Bluewater's 25-year utility contract protected ratepayers from rising fossil-fuel prices. Mandelstam and his firm reinforced wind power's environmental benefits and brought their visual simulation images to show how slight the change would be to the Delaware seascape. "They answered questions," says R. Chris Clark, a Fenwick Island Council member. "They were the only ones doing town meetings." People also responded to the economic benefits that the Bluewater project would bring to the state: hundreds of new union jobs, roughly \$100 million in direct local union construction wages and spinoff industries. As a first-mover in offshore wind, Delaware was likely to become a development hub for a big build into the mid-Atlantic. The construction of the Bluewater Wind Park, moreover, would be part of an important step in decommissioning several old coal-fired power plants, the removal of which would, by some estimates, save the state \$750 million in health-care costs.

Over time, comments to the Public Service Commission were nearly 10 to 1 in favor of the wind project. A survey conducted by the University of Delaware concluded that 91 percent of the state's residents supported wind power offshore even if it meant paying more per month for electricity. Soon Bluewater began picking up important endorsements. One of the first came from Jack Markell, the state treasurer and a current gubernatorial candidate. Dozens more followed, including a judicious opinion published by the state's Audubon Society, but perhaps none were more important or telling of the change in public opinion than those from the half-dozen coastal tourist towns whose "viewshed" would be slightly but more or less permanently altered.

Then in May 2007, after the longest and most exhaustive review process in its history, the Public Service Commission unanimously selected the Bluewater Wind Park as the winner of the open competition and ordered Delmarva Power, the same company that had been actively campaigning against the wind farm, to begin negotiating a contract what's known in the business as a long-term power purchase agreement, or P.P.A., with Bluewater. The decision seemed nothing short of miraculous. "Two years ago," Mandelstam told me shortly thereafter, "if I told the governor of Delaware that I was going to build a wind farm off the coast, she would have laughed in my face. Maybe it's energy prices. Maybe it's the Al Gore movie. But nobody's laughing now."

*In the golden light* of last October, things seemed to be going very well for Bluewater, especially after the infrastructure conglomerate Babcock & Brown announced its decision to purchase the company, signaling that a major player had squarely faced the many significant obstacles of offshore wind and placed a big bet on Bluewater in Delaware. Just as Delaware seemed to become more continental in its outlook, a sea change of favorable public opinion was well under way on Wall Street, where wind power, at least the onshore variety, has become a new American frontier, a \$9 billion market that is expected to grow to \$65 billion by 2015.

Last year, onshore wind power added more than 5,200 megawatts of new electrical capacity to the grid or nearly a third of America's new generating capacity, surpassing all other forms of new generation except natural gas and amounting to enough electric capacity to power one and a half million homes. While it's true that wind is still a tiny part of the energy picture just 1 percent of the total electricity portfolio in the United States and 3.3 percent in Europe more than a quarter of the 20,000 megawatts of the world's new wind capacity last year was installed in North America, where all the global wind-energy players have set up shop, lured by the low U.S. dollar and the high rate of returns. "In America," explains António Mexia, chief executive for Energias de Portugal, which bought the Texas wind company Horizon Energy, "you can put up a 200- or 300-megawatt wind park. You can't do that in Europe." Indeed, in the continental United States, resources are vast with more than eight thousand gigawatts of potential electricity blowing overhead. "The amount of wind energy potential in this country," says Walt Musial, a principal engineer at the National Renewable Energy Laboratory's National Wind Technology Center, "is bigger than the national grid itself."

But the explosive growth in land-based wind farms owes more than a little to state and federal subsidies for the wind industry: state renewable energy credits; accelerated depreciation credits; and, perhaps most important, federal tax credits for equity investors who help wind developers finance and construct wind farms. This last subsidy is keyed to actual electricity production, which is why it is called a production tax credit, or P.T.C. Large wind farms simply can't be financed without the P.T.C., which, in effect, decreases by as much as 40 percent the financing that developers need to build a project. "That's huge," says Bruno Mejean, managing director at Nord/LB New York, a German-based bank and an active wind-energy lender. "You cannot finance these projects without this 40 percent component. That's what makes wind power viable commercially." Investors are happy with the P.T.C. because for a modest return on their money they get huge corporate tax breaks. Wind developers are happy because P.T.C.'s allow them to build bigger projects.

But for some, P.T.C.'s are a problem, not the solution. Senator Lamar Alexander of Tennessee, the third-most-powerful Republican in the Senate and perhaps the most outspoken opponent of wind energy in Congress, argues that the wind industry is disproportionately subsidized, which has made harvesting wind a lucrative opportunity for entrepreneurs like Mandelstam and the investors who finance their projects. Alexander says he feels that wind should be given tax

breaks no different from those for other forms of renewable energy, like nuclear power: “If I had the money to spend, I’d spend it on conservation and efficiency, nuclear power and on cleaning up the coal plants that already produce half of our electricity.”

Those who remain skeptical of wind energy as a viable solution to America’s energy question tend to focus on the problems of intermittence and variability: the wind doesn’t always blow, and it seldom blows at the same speed. Therefore, turbines generate variable amounts of electricity. All of this can be very troublesome for the grid, which requires consistency and predictability. “There’s a third element,” says Lisa Linowes, executive director of the Industrial Wind Action Group, “and that is that wind power is unpredictable power. The wind often blows when you don’t really need the electricity at night, or off-peak periods. What to do then?” To date, according to Linowes, there is no effective utility-scale mechanism for storing off-peak wind power. Eric Rosenbloom, president of National Wind Watch, a Massachusetts-based group, adds that wind power’s inherent unreliability requires that backup natural-gas power plants be built alongside wind plants, and that this “increases, rather than decreases, both the overall expense of wind power and its carbon footprint.”

Within Delaware itself, opponents of Bluewater focused on the economics of the project. One report financed by Delmarva Power argued that Bluewater would raise the average electric bill by \$20 or more a month. If natural-gas prices flattened or decreased, the company could pass those savings on to its customers but not if it were stuck in a long-term contract at the Bluewater price of 10 cents per kilowatt hour for the next 25 years. Delmarva’s president, Gary Stockbridge, argued that cheaper land-based wind farms should be considered, even though a search for land-based wind power would, of necessity, take Delmarva into out-of-state electricity markets, in contravention of the very state law that prompted the bid for new energy generation.

Spurred by these objections, a handful of powerful state legislators among them the State Senators Charles Copeland and Harris McDowell III stepped in last December and managed to force a deadlock among four state agencies that were set to ratify the power purchase agreement between Bluewater and Delmarva. In a move that surprised everyone (“There were audible gasps in the room,” recalls one witness to the proceedings), the vote was tabled. A local paper, *The News Journal*, called it a legislative coup d’état orchestrated beyond public scrutiny, at the 11th hour, by an “old-boys’ network,” as it was put in *The News Journal*, who now seemed to be airing the views of the wind park’s most vocal opponent, Delmarva Power.

All winter, the Bluewater Wind Park remained in limbo, while its chief legislative opponent, Senator Harris MacDowell III, conducted hearings that seemed, by many accounts, designed to torpedo the project. Meanwhile, Delmarva pressed its advantage, buying radio, television and print ads and hiring its own consultants to make its case. “From a risk perspective,” Stockbridge said in a phone interview in December, “do we really want to lock in to what amounts to a period of 30 years to a technology when it’s most expensive and most risky? Offshore wind is just not ready yet.”

**So how was it that**, six months later, after millions of dollars spent fighting one of the most protracted political battles in Delaware history, Gary Stockbridge sat before a room filled with reporters to announce that offshore wind power in America was, in fact, ready? Delmarva, he revealed, had signed a power purchase agreement with Bluewater Wind to build a scaled-down, 200-megawatt wind farm off the coast.

When I met Mandelstam at lunch a day after Delmarva’s surprise announcement, he was beaming and wearing little wind-turbine cuff links, a present from his wife, Dawn. “The offshore wind industry grew up yesterday,” he said. “Delmarva came to understand that offshore wind was beneficial for its ratepayers, and that wind would fit onto its system.”

Though Mandelstam praised various legislators and Delmarva for coming to an agreement, he conceded that no small part of this realization was linked to the rise in energy prices. “Energy markets went significantly higher and scarily so, particularly in the last six months,” he said. Indeed, oil has skyrocketed, and the price of Appalachian coal has more than doubled this year. Tom Noyes, a Bluewater supporter, blogger, and Wilmington-based financial analyst, says that a year ago, “the numbers that both sides of this debate were throwing around were largely academic. Now, those numbers are visceral.” Against this backdrop of steadily climbing energy prices, Bluewater’s offer of stable-priced

electricity an inflation-adjusted 10 cents per kilowatt hour for the next 25 years became something that no utility, it seems, could credibly oppose. “A few decision-makers got it early on,” Mandelstam said, “some got it slightly later and Delmarva finally got it.”

For those looking for a parable of civic action in Bluewater’s unlikely victory in Delaware, it is useful to remember how much the outcome seems to have hinged on one man: State Senate Majority Leader Anthony DeLuca. While never publicly opposing the Bluewater deal, DeLuca had serious concerns about how electricity rates would affect his constituency and was believed by many observers to be among the leadership that succeeded in orchestrating the December coup. The same man was widely credited for brokering the deal between the antagonists. “I managed to get criticized by both sides of the argument,” DeLuca said, “for asking the same question: Are you really going to build a wind farm?” He continued: “We were headed for two very large companies spending 25 years as adversaries. The net result of this is that we’re going to spend 25 years with two very large companies being partners.”

Whatever eventually persuaded DeLuca, the lesson in Delaware is clear. “It’s about the importance of leadership,” says Ryan Wisner, a staff scientist at the Lawrence Berkeley National Laboratory who has studied the barriers to renewable energy and the economics of wind power. Wisner cites Colorado as an example of a state shifting from fossil fuels to wind and other alternative sources of energy after electing a new governor, Bill Ritter, on a platform of green energy. “In a two-year period, Colorado made a total about-face,” Wisner says. What was the difference? “The utility was the same. The economics were more or less the same. The decisive factor was the change in leadership.”

Delaware’s project, it turns out, joins more than a dozen offshore wind projects in the United States, the largest among them aimed toward the Mid-Atlantic Bight. A report released by the National Renewable Energy Laboratory suggests that the technological challenges of wind power will not, in fact, prevent it from becoming an important part of the nation’s energy supply. “Wind power,” says Walt Musial of the N.R.E.L., “is not a niche player. That’s something that the American public may not fully be aware of.” According to many academics and industry researchers, the grid is, in fact, far more adaptable than wind-power opponents suppose. In Texas and California (states with the largest amount of installed wind capacity), utilities are working to enable the grid to adapt to variable and intermittent loads. In New York, it seems that wind energy could provide the state with 20 percent of its energy capacity without causing trouble to the grid. “You can’t say that because wind power is intermittent it can never be used,” says Revis James, director of the Energy Technology Assessment Center at the Electric Power Research Institute, a nonprofit agency whose funds are provided almost entirely by electric utilities. Musial agrees: “Intermittency and variability are not going to prevent us from going into wind energy.” He points to countries like Denmark, which generates 20 percent of its electrical supply from wind. “And they haven’t done anything different to their grid structure,” he adds.

Nonetheless, many hurdles remain. Federal regulations governing the construction of offshore wind farms, for instance, haven’t even been written. In the absence of a coherent federal energy policy, moreover, the states have begun to shape America’s energy future. The result is a hodgepodge: 50 different states with different energy resources and utilities with varying degrees of receptivity to new forms of power generation.

“What we need,” says Lester Brown, founder and president of the Earth Policy Institute, “is the grid equivalent of the Eisenhower Interstate Highway System.” Wind energy, according to Brown, would be the centerpiece of such a program because of its ability to scale up fast. T. Boone Pickens, the oil-and-gas billionaire, has just introduced his own program, which features a major deployment of wind power at the national level. According to the D.O.E., the net incremental cost of such a project would be \$43 billion, enough to bring wind energy to supply 20 percent of the nation’s electricity by 2030, bringing about a total economic benefit of more than \$440 billion.

In the end, the back and forth between wind-energy supporters and opponents is ultimately about the role the federal government should play in shaping the energy market. “You and I are subsidizing wind energy,” the banker Bruno Mejean reminded me with a smile when I spoke to him last year. “How you feel about that depends upon how you frame the argument. If it’s about energy security, then we should do as many wind farms as we can. But by paying the prices for the energy and by providing the tax breaks, big corporations like Florida Power and Light, General Electric and others are reducing their taxes at our expense. It’s a political hot potato.”

Is it right for Congress to single out an industry like wind power and favor it with tax credits? Mandelstam argues that when it comes to energy, free markets are a mirage. “Let’s be honest,” he says. “The government makes policy decisions about technologies and industries all the time. The P.T.C. helps finance wind-energy projects that actually get built and that actually produce energy. It leverages private dollars and private initiative, and at the end of the day is a tiny subsidy.” He notes that most of the world’s oil supply is owned by national governments: “No serious economist or public policy analyst would suggest that this industry, by some reckoning the largest on the planet, operates as a free market. Within the United States, the regulations and the laws both for fossil fuel and for the electricity market are a web of sometimes contradictory regulations and subsidies. It’s a fiction that there’s a free market with energy.” But if energy markets aren’t free, then who is at the helm?

It may seem strange for an entrepreneur to call for more government regulation, but when it comes to energy, that is what Mandelstam is doing. “As a student of history, you go back to a guy named Thomas Edison, and his first power plant, and the thing one has to point out is that the government and regulators have been integrally enmeshed in the energy business ever since it began on Pearl Street in 1882.” He points to Europe as an exemplar: “We were the world leader in wind. Europe overtook us quite a while ago and continues to beat us all the time because they got the public policy right.” Wise regulation, according to Mandelstam, and a thoughtful debate about energy policy is the best way to correct that. “Let’s line up all the subsidies of coal and nuclear power and oil and natural gas and wind and let’s have a debate,” Mandelstam urges. “That hasn’t happened in the last eight years, and now, frankly, we’re paying the price for it.” n