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New England poised to be key wind energy player

By Jackie Noblett

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New England is primed to ride a tailwind of advancements in wind turbines for both small and large systems, with the help of a few high-profile, fast-growing companies. While Europe is still king when it comes to large-scale turbine deployments (thanks to its wind-friendly feed-in tariffs), a combination of regulatory changes and financial incentives is making this region an attractive market for wind turbines on both public and corporate properties — exactly the market several local wind companies are going after.

The state of Massachusetts' new Commonwealth Wind incentive program provides site testing as well as design and construction grants, while Connecticut offers incentives for wind turbine construction through its Connecticut Clean Energy Fund. Renewable energy developers such as Solaya Energy LLC in Woburn have emerged as companies looking to develop such projects, like the turbine to be constructed at the Blandford rest area on the Massachusetts Turnpike.

In addition, the region appears poised to be a major center for the development of offshore wind on the East Coast. In January, the University of Maine received a $12.4 million grant from the U.S. Department of Commerce for construction of a deep-water wind energy research and testing facility. The state has already chosen a site off Monhegan Island to test a floating turbine being designed at UMaine. Others are looking at construction of the Cape Wind farm in Nantucket Sound to kickstart the industry.

"Once we get the first few offshore farms up, I think we'll see another round of technology innovation, and I think the presence of the wind-blade (testing) facility in Charlestown will create a venue for that innovation," said Massachusetts Secretary of Energy and Environmental Affairs Ian Bowles.

Here is a look at two companies helping to drive growth in the region's wind sector.

Optiwind

The 2-year-old Torrington, Conn., company is developing a community-scale wind turbine that looks more like a feed silo than a turbine.

"Right now, the way this market is being served is taking big wind turbines and making them smaller or taking small turbines and making them bigger, but neither are well suited for the market," said David Hurwitt, vice president of marketing at Optiwind. "We start with the premise that the sites are not going to have great wind and try to take the most expensive costs out of the turbine to make it economical."

The odd design of Optiwind's 150-kilowatt and 300-kilowatt turbines comes from that premise — taking costs out of the most expensive parts of turbines, which happens to be construction and blades. The turbine is built on a triangular lattice frame that can be erected using hydraulics rather than requiring a crane to lift it. There are no large wind blades spinning around the tower's center either; in their place are six or 12 fans that

generate electricity from the wind.

While Optiwind's home state of Connecticut ranks dead last in wind turbines constructed and has among the highest electricity costs in the nation, Hurwitt says the state offers an opportunity to make a big impact on electricity costs while adding engineering, sales and production jobs. Optiwind has gone from zero employees to roughly two dozen in two years, and it plans to double employment this year.

The company is funded by Charles River Ventures and the Connecticut Clean Tech Fund, a venture capital fund managed by Connecticut Innovations.

Northern Power
Fresh with cash following a $45 million fundraising round launched in October, Northern Power Systems Inc. is poised to grow both its product line and customer geography in 2010.

The Barre, Vt., company is in the midst of developing a 2.2 megawatt wind turbine using its gearbox-less, permanent magnet direct-drive system already built into its 100 kilowatt turbines.

Expanding into the multibillion-dollar utility-scale wind market is key to Northern Power's long-term success, executives say, and they feel the technology will help it stand out against much larger competitors in the business.

"The core technology of Northern Power gives us an ability to open a market that didn't really exist in community wind," said Northern Power CEO John Danner. "The technology also delivers competitive advantages into the rapid growth, global market of utility-scale wind without the premium that direct drive has always cost."

To do so, the company opened a technology development office in Cambridge last month to tap into the engineering and business know-how of Greater Boston. Its office space has room for 30 employees, and several executives are expected to be based there. Danner said there is a natural connection between Vermont and the Boston area, and he expects Boston to be a first stop for utility customers on their way to company headquarters.

In Vermont, the roughly 150 employees design and manufacture Northern Power's smaller turbines installed in several spots across the Northeast — including one under construction in New Haven, Conn., that is the first such turbine in the Nutmeg State. Danner said the company expects to gain traction in the community wind market thanks to the attractive incentives for such projects and by this time next year hopes to be the largest community wind turbine manufacturer. The company also expects to expand its customer base and operations in Europe, where it established a beachhead in Zurich.

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