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Land Turbines Grow Popular

Three Island Towns, Plus Tribe In Various Stages of Planning To Build Single Wind Towers;

One More at High School

By JIM HICKEY

While debate continues over the Cape Wind project from the Vineyard and Nantucket all the way to the halls of the United States Congress, several onshore wind turbine projects are now quietly under way with considerably less fanfare.

Three Island towns are now considering building land-based wind turbines. Oak Bluffs, Aquinnah and the Wampanoag Tribe of Gay Head (Aquinnah) are in the exploratory phase, while Tisbury recently took an important first step toward building a turbine.

The Federal Aviation Administration has approved plans for a meteorological data tower to be built near the Tisbury landfill. The 140-foot data tower, which would collect weather data and wind speeds for one year, is expected to be a precursor to an actual turbine. The information collected by the data tower will determine if there is enough wind at the location for the turbine to be economically feasible.

If all goes according to plan, the tower would be built by the Community Wind Collaborative, a division of the Massachusetts Technology Collaborative, a state agency that helps increase the supply and demand of renewable energy statewide.

Created in 2003 as a multi-million-dollar statewide initiative, the wind collaborative is dedicated to helping cities and towns tap into clean, renewable wind power. The agency offers technical assistance, wind monitoring equipment, data analysis and resources to qualified communities.

Currently, more than 40 cities and towns across the state are exploring the potential for developing wind energy through the agency. The town of Orleans is currently working with the Massachusetts Technology Collaborative to build two turbines. Construction could start as soon as this year.

If data gathered from the Tisbury tower is favorable, which is likely, the wind collaborative would then provide technical assistance and professional consultants to help town officials draft the best plan for a turbine.

Kristin Burke, community planning manager for the wind collaborative, said she believes there is enough wind to justify the construction of a turbine in Tisbury. After the data is compiled, wind collaborative consultants will help officials decide whether the town should serve as the project applicant or if they should enter into a partnership with a private developer.

Henry Stephenson, a member of the town planning board and chairman of the Tisbury renewable energy committee, said the town would like to build a turbine approximately 240 feet tall, that could generate up to 660 kilowatts of electricity, enough to supply power to 200 to 250 homes annually. The tower would cost between \$550,000 and \$700,000, according to officials at the wind

collaborative.

Mr. Stephenson said electricity produced by the turbine would provide direct energy services for the town. For example, he said the turbine could generate enough power to run the town sewer plant, which costs between \$50,000 to \$60,000 annually. A majority of the energy produced by the turbines would be channeled "behind the meter," meaning it would be used on site to power the sewer plant. Any surplus energy, he said, would feed into the overall power grid, and could be sold in the energy market for tax credits.

Mr. Stephenson said the turbine would be both a sound financial investment for the town and an important step toward developing more renewable energy, better air quality and reducing the Island's contribution to climate change.

"If you live on an Island in a rising sea, you really should be interested in doing something to stop global warming," he said.

Richard Toole, a clean-energy advocate and former Martha's Vineyard Commission member, is working with town officials in Oak Bluffs to bring a wind turbine to that town. He has already met with town administrator Casey Sharpe and several selectmen about the turbine. As in Tisbury, the Oak Bluffs turbine would likely be built near the town landfill and would be a mid-sized tower capable of generating approximately 660 kilowatts of electricity, he said.

Mr. Toole noted that the Island has an interesting mix of people who are acutely aware of the need for clean energy, as well as people who set the benchmark for energy overconsumption.

"It used to be that people would come to the Island and stay in a small cottage near the beach. Now they build these enormous homes they heat year-round, even though they live there for only a few months out of the year," he said.

Mr. Toole said many environmental scientists are now warning of a possible point of no return, where pollution may cause irreparable damage to the planet. And while a wind turbine on a small Island off the coast of Massachusetts might not make a huge difference, it is definitely a step in the right direction, he said.

"Every little bit helps. It's just as important because it sets an example for other towns to follow," Mr. Toole said.

Aquinnah is also exploring the possibility of a smaller wind turbine that would be installed behind town hall or on another town-owned parcel.

At a special town meeting in February, voters agreed to allocate \$750 as startup money for a wind turbine. Selectman and board chairman James Newman said the town has worked with the Massachusetts Technology Collaborative to lay the groundwork for building a turbine, although the proposal has temporarily been placed on the back burner for financial reasons.

Mr. Newman said the technology collaborative would help the town pay for the turbine, but the town would have to come up with the funding first and then seek reimbursement.

"There are a lot of people in town who are very interested in building this turbine, myself included. But we don't have the money to do it right now," he said.

Mr. Newman said the town will likely revisit the issue in the coming months. He was also hopeful that free cash returned from the state could be used as startup funds for a turbine project.

Kate Warner, a West Tisbury architect and director of the Vineyard Energy Project, said wind power is an integral part of the Island's heritage. In the 1700s windmills were used to pump sea water into evaporative ponds to produce salt. They were also used to power gristmills, she said.

While the windmills of that era served to make everyday life easier, Ms. Warner said the turbines of today are part of a larger plan to lessen dependence of fossil fuels and cut down on energy costs.

"The Vineyard depends almost entirely on imported energy. Because we are essentially at the end of the pipeline, we wind up paying more than just about everyone else. So from an economic point of view these technologies make a lot of sense," Ms. Warner said.

But she said the advantages of wind power go far beyond economics. It saves the release of pollutants, produces no hazardous waste, is eternally renewable and lessens our dependence on foreign oil. It also sends the message that officials are serious about protecting the Island's fragile ecosystem.

"We live on one of the most special places in the country. But it is also one that is the most vulnerable to pollution and changes in global climates," Ms. Warner said.

The Vineyard Energy Project's 10-year plan calls for three strategies to increase wind power on the Vineyard. One involves building ten 1.5 megawatt-per-hour turbines that theoretically could provide 22 percent of the Island's energy.

Ms. Warner is optimistic that the Cape and Islands can lead by example when it comes to wind power. While New England has traditionally been behind the rest of the country when it comes to wind-based power sources, there has been a recent surge in local interest in the technologies. About 10 towns on Cape Cod are either moving forward with plans for turbines or are considering putting up a tower.

Many point to recent changes in the federal Energy Policy Act and state legislation proposed by state Rep. Matthew Patrick, a Democrat from Falmouth, that make it easier for towns to build and operate wind turbines.

A growing number of private residents have shown interest in installing wind turbines, according to John Abrams, president of the resource-conscious South Mountain Company.

"I think more and more people are realizing that we have to change our ways, especially here on the Island," Mr. Abrams said.

Earlier this week, South Mountain, which has its own turbine at its headquarters in West Tisbury, began work on a small turbine at the Martha's Vineyard Regional High School. The turbine was made possible by a \$90,000 anonymous donation, and will produce 12 to 15 kilowatts of electricity.

More importantly, the turbine will educate students about wind power and other clean renewable energy sources, high school principal Margaret (Peg) Regan said.

"One of the best things is that it will be visible and accessible. Anyone can access the windmill and learn from it. And I think in a small way it will help educate people that wind is a viable source of energy. With all the contention about Cape Wind going on, I think this will help demystify wind-based technologies," she said.

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