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"Charter School eyes renewable energy system" - August 2008



Charter School eyes renewable energy system

By Janet Hefler - June 12, 2008

The Martha's Vineyard Public Charter School (MVPCS) not only wants to reduce its carbon footprint, but to erase that footprint entirely by the year 2010. The school will hold an informational community meeting about proposed plans for a renewable energy system to accomplish that goal on Tuesday, June 17, at 6:30 pm.

The Charter School's quest to become a net-zero, carbon-neutral facility hinges on using a wind turbine to generate all of the building's electricity and to run heat pumps for heating and cooling. Depending on the wind potential at the school's State Road site in West Tisbury and the size of the turbine ultimately chosen, it also may produce enough electricity to sell some back to the electric grid.

MVCPS board president Sam Berlow views the project as an environmental, educational, and fiscally responsible project. As board president for five years, Mr. Berlow said he has seen gas and electricity prices continue to rise in the school's budget.

"We budget \$22,000 a year for electricity and \$10,000 a year for oil, gas, and propane, which we prepay every year," Mr. Berlow said. "I'm sure it will go up this year - we're preparing for that - and we're assuming in the next five to six years, it's going to double."

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going to occur.

"It will get to the point where it costs us a teaching position or an aide position or something that affects the school's education program and the quality of education," Mr. Berlow pointed out. "With this type of project, maybe we can eliminate that possibility. Plus, it's the right thing to do."

As a first step, MVPCS recently applied for and received a \$40,000 Large Onsite Renewable Initiative (LORI) grant from the Massachusetts Technology Collaborative (MTC). The grant is funding a wind feasibility study at the school's State Road campus in West Tisbury.

The MVPCS board hired Brian Nelson, co-owner of Nelson Mechanical Design, to oversee the feasibility study, hire consultants, arrange for necessary studies, and write the final report.

"I think the concept of using on-site generation and heat pumps greatly intrigued the MTC, and they saw the fundamentals were very good for a school situation," Mr. Nelson said.

Before building a wind turbine, the school must erect a meteorological (met) tower to collect wind data. The Charter School applied for and received a permit from the town of West Tisbury for the tower, which will be identical to one put up four miles away at the old septage lagoon fields off Holmes Hole Road in Tisbury in last June.

"What's exciting is we'll have the same brand of equipment and same height at both locations," Mr. Nelson said. "We will be able to correlate the data from the two sites, which the MTC supports." The

grant stipulates the met tower must be up until December, when the final report is due.

The Charter School's met tower will be 165 feet high and collect data with four anemometers. Mr. Berlow plans to meet with the board of directors and school administrators, as well as the building facilities committee, to confirm where the tower and guy wires will go.

"We're hoping to erect it by the end of the month," he said. Offshore Engineering in Tisbury will do the installation.

Mr. Nelson said West Tisbury building inspector Ernest Mendenhall told him the town's bylaws would allow a wind turbine up to 220 feet tall, and that he would not refer the project to the Martha's Vineyard Commission (MVC).

Mr. Berlow said he did inform the Martha's Vineyard Commission's Land Use Planning Committee Monday night about the renewable energy system the Charter School is considering during discussions about the school's proposed building addition plans.

The Massachusetts Aeronautical Commission has granted permission for a 220-foot turbine, with approval from the Federal Aviation Administration pending.

A 220-foot wind turbine is almost a utility-scale turbine, Mr. Nelson said, capable of producing 900 kilowatts. Both he and Mr. Berlow stressed that the Charter School has not made any decisions regarding the renewable energy project or the size of the wind turbine, which may range from 85 to 220 feet.

Wind data is a critical factor in determining turbine size.

"Once we have the met tower, we'll set up a website that will show different sized turbines and what they will generate, Mr. Nelson said. "That way, the Charter School community and board of directors can select what they feel is most appropriate for the school. They will have to strike a balance between the size of the turbine, the costs of the project, and the revenue stream it will generate."

Mr. Berlow voiced similar thoughts. "There's a size at which it's break-even, and then there's a size at which we build at an increased energy cost, and a size where we make a little money, and a size where we make a bunch of money," he said. "Each size has an impact on the neighborhood, and we have to weigh all those things and make sure everyone is comfortable."

Then comes a second round of seeking grant funding, which will determine what the private fund-raising tab will be. "This will be completely separate from our fundraising effort for the addition to the building," he said. "This will take people who are really interested in this type of project to do something different with their foundation money - I've got quite a few people interested."

Mr. Berlow said the school also will work towards making the existing building as energy-efficient as possible. As a first step, the school began a strict recycling and composting program two years ago.

In the meantime, Mr. Nelson said the MTC has indicated the Charter School's renewable energy project looks good and encouraged him to apply for a \$400,000 LORI grant in August to provide funding for the design and construction component of the wind turbine

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