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Wind Power In NYC by Sam Williams 08 Mar 2006

The Statue of Liberty, our nation's 119-year-old national symbol of freedom, will soon become a symbol of something else as well – wind power.

Last month, the General Services Administration, the U.S. government agency that oversees management of federal buildings and federal monuments, announced that it will be [purchasing 100 percent](#) of the electricity needed to light up and power the Statue of Liberty, Ellis Island and 22 other federal buildings -- a yearly electricity demand of roughly 27 million kilowatt hours --- from so-called windmill farms located in western New York, Pennsylvania and three other states.

While the source of this power will be largely invisible to city dwellers, the deal fills a major symbolic void at a time when city and state officials, and even President George W. Bush, are singing the virtues of alternative energy sources.

Remember The Freedom Tower Windmills?

Only a short while ago, there promised to be a far more visible symbol of wind power in New York – Freedom Tower at the site of the World Trade Center. Architect David Childs, in a modification of Daniel Libeskind's high concept plan for a 1776 foot tall Freedom Tower, unveiled a design that would embed a [series of 30 vertical windmills](#) at the top. More than just eye candy, the windmills would provide much-needed local electricity in a city that, only four months earlier, had experienced a major blackout.

Child's attempt to harness the wind has been forgotten. A May 2005 redesign, while primarily responding to New York Police Department security concerns, [quietly jettisoned the windmill](#) stack in an attempt to give something a little closer to the original World Trade Centers 1 and 2 profile. (The new design still has some [environmentally-friendly elements](#), such as clear glass to allow more natural sunlight into the building, and a system to collect rainwater, probably for use in the restrooms and the fire sprinklers.)

The General Services Administration power purchase, while lacking in the showpiece visibility of the 2003 Freedom Tower design, more closely reflects the reality of the current wind power marketplace. Despite state and federal tax credits for suppliers and purchasers alike, wind energy requires exploitation on a large scale in order to be cost competitive with coal-burning and other, traditional electricity generation methods. The kind of windmill often used to generate electricity (a 750-kilowatt turbine) costs roughly \$800,000 yet generates only \$80,000 to \$100,000 in salable electricity per year.

Wind companies have learned to locate dozens of turbines on "wind farms" -- remote facilities that take advantage of steady predictable wind currents, low land-leasing costs and an additional helping of subsidies from the U.S. Department of Agriculture which currently encourages farmers to exploit this secondary revenue source. Added together the resulting cost savings have brought wind-powered electricity generation down to the market-critical four to six cents per kilowatt-hour, the same wholesale cost range for electricity that comes from burning coal.

"Essentially a wind farm operates like any other power plant," says Paul Copleman, spokesman for Community Energy Inc., a Wayne, Pennsylvania company whose wind farms in the mid-Atlantic region are supplying the electricity that will eventually power the Statue of Liberty's

lantern. “When businesses or homeowners are choosing to purchase wind energy, they’re not taking the step of putting a windmill on their home. It’s just as easy as purchasing any grid-connected power source.”

Still, in New York, a city that has added [six natural gas-burning power plants](#) over the last half-decade, some are looking to make wind power more visible to the local energy consumer.

Windmills On The Fresh Kills Landfill

Currently the most ambitious plan of this type is the Fresh Kills Landfill redevelopment plan. At the urging of Staten Island Borough President James Molinaro, BQ Energy, a Pawling, N.Y. company which has a cost-sharing agreement with the New York State Energy Research and Development Authority (NYSERDA), is investigating the feasibility of installing at least five windmill towers atop the closed landfill’s tallest mound.

According to the Staten Island Advance, BQ Energy engineers already believe the winds that buffet the former landfill could sustain up to five large turbines, generating enough electricity for 5,000 nearby homes. The process must first clear FAA regulatory hurdles to make sure the windmills don’t interfere with the Newark Liberty International Airport flight path. It will also most likely face a challenge from environmental groups who want to protect the migratory waterfowl that currently use the recovering Fresh Kills waterway and could be threatened by the spinning turbine blades. Finally, there is the risk that Staten Island residents near the facility, much like their counterparts in [Cape Cod, Massachusetts](#), will balk at losing their rapidly-improving view to a series of industrial windmills.

Despite such challenges, Molinaro sees the turbines as a chance to make Staten Island the “renewable energy capital of New York City” while at the same time deflecting complaints over the New York Power Authority’s new natural gas-burning power plant on the northeastern corner of the island.

“Our plan to erect a wind energy facility at the Fresh Kills landfill will tackle tomorrow’s energy challenges today, right here on Staten Island,” Molinaro said in a statement issued immediately after the president’s State of the Union address.

The Windy City

Meanwhile, with the passing of the Freedom Tower wind turbine design, the struggle to marry wind turbine efficiency and aesthetic design moves west to Chicago, where Mayor Richard Daley is an enthusiastic supporter of green building design, especially those designs that take advantage of Chicago’s “windy city” reputation. In January, city officials announced plans to integrate two wind turbines into the structure of the Richard J. Daley Center in The Loop and eight turbines into the still-unbuilt Ford Calumet Environmental Center on the north side. Unlike the propeller-shaped windmills that had been proposed for the Freedom Tower, these newer windmills, developed by University of Illinois at Chicago professor William Becker, will employ a tube-shaped corkscrew design. As Becker noted in an interview last year with the trade magazine [Building Design and Construction](#), the design is intended both to minimize the industrial look of turbine fans and increase turbine efficiency.

The Kidwind Project In The Bronx

While New York City has yet to match that creativity, Dr. Reid Strieby, a professor at [the Bronx Community College Center for Sustainable Energy](#), has been working with local teachers to get students thinking more about the next generation of turbine design. Strieby’s program, which is

in partnership with a small nationwide non-profit called [the Kidwind Project](#), is part of an effort to give high school and middle school teachers (mostly earth science and environmental science teachers) the lesson plans and wind turbine kits to explore wind energy as a concept.

The next Bronx installment of the Kidwind Project will be in the fall. Strieby sees this as more than just a lesson; to him it's a mission. With so little apparent enthusiasm currently for wind energy among governments and public utilities, he hopes to help create a new generation of energy consumers who will see things differently: "One of the ways to get the word out is to tell the teachers," he says, "and the teachers can tell the kids, and the kids can become advocates."

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