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The City of Milwaukee's first wind turbine harvests clean energy on the shores of Lake Michigan

Created in 2006, Milwaukee's Office of Environmental Sustainability (OES) sponsors and operates economically viable and environmentally sound partnerships and initiatives throughout the city, including the Milwaukee Shines solar program, the Milwaukee energy efficiency program (Me²) and the ME3 sustainable manufacturing program. In February 2012, OES achieved yet another sustainability goal when the city's first wind turbine was commissioned near the Port of Milwaukee's administration building.

Located just off South Lincoln Memorial Drive near the Lake Express ferry terminal, the wind turbine is intended to demonstrate the city's commitment to clean energy. The Harbor Commission and Port of Milwaukee were enthusiastic about being part of a project that would make use of the shoreline's untapped resource while bolstering Wisconsin businesses. With a hub height of 121 feet, the city's Northwind 100 generator is less than half the height of a typical commercial wind turbine, but taller and more productive than the small turbines that stand outside the Discovery World Museum. In late 2011, the City of Milwaukee accepted bids from renewable energy contractors and selected Vermont-based Northern Power Systems to supply the turbine; Kettle View Renewable Energy to install the generator; and Milwaukee-based contractor RL Davis was subcontracted by Kettle View to aid with construction at the site. Kettle View, a certified small wind site assessor and full-service wind system installer based in Random Lake, was a good fit for this installation, having installed the same turbine model for customers such as the Village of Cascade and Preder Farm. Northern Power Systems sourced many of the components to various state manufacturers, including Bassett Mechanical, which fabricated the tower—the first wind turbine component that the Kaukauna company has ever fashioned. Indeed, Milwaukee's wind turbine was principally a Badger state endeavor, with eleven other Wisconsin companies taking part in the project. See full list here: <http://city.milwaukee.gov/sustainability/WindProject>



Wind Turbine Specifications

- Turbine Model: Northern Power 100
- Capacity: 100 kW
- Hub height: 121 feet
- Est. avg. output: 150,000 kWh/yr
- Utility: We Energies
- Year of installation: 2012
- Incentives:

ARRA	\$300,000+
Focus on Energy	\$100,000
We Energies	\$100,000
Total	\$500,000+

Further Information:

goMilwaukee

City of Milwaukee Office of
Environmental Sustainability
"Wind Turbine Project"

<http://city.milwaukee.gov/sustainability/WindProject>

Milwaukee Journal Sentinel

Articles by Thomas Content
"Port of Milwaukee wind turbine project to
move forward"

Sept. 14, 2011

<http://www.jsonline.com/blogs/business/129817273.html>

"City Wind Turbine Almost Ready
To Go" Feb. 23, 2012

<http://www.jsonline.com/business/city-wind-turbine-almost-ready-to-go-ju4ahks-140245023.html>

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"We're very pleased with the construction, we're happy that the vast majority is made in the U.S., and that we have many Wisconsin manufacturers contributing parts to the turbine including the tower," said Matt Howard, Director of OES. Project funding was provided by government and utility grants that covered the \$580,000 total cost of the turbine in its entirety. More than \$300,000 in federal renewable energy stimulus dollars were provided through the American Recovery and Reinvestment Act (ARRA), while a total of \$200,000 in grants were provided by Focus on Energy and We Energies, the electric utility serving Milwaukee.

At the groundbreaking ceremony on November 3, 2011, Milwaukee Mayor Tom Barrett lauded the city's initiative. "I believe that this project is a smart, cost-effective demonstration of the city's commitment to clean energy. This is one more tool in the energy efficiency and tax dollar savings toolbox." Installation of the turbine was completed in February 2012, and on the 27th of the month it began generating clean energy for the city. During the construction process, RENEW Wisconsin staff spoke with Randy and Maureen Faller, owners of Kettle View Renewable Energy. "We are proud to be the system installer of the wind turbine at the Port of Milwaukee. This project is one of the most visible of the five Northwind 100 turbines we have installed in Wisconsin. It is a very clear example of sustainability and progression for the City of Milwaukee. All city officials involved in implementing this project should be commended for taking the initiative to meet their energy needs now and in the future."

The port administration building's electricity consumption provides insight on the benefits of the wind turbine. In 2010, the administration building consumed 100,240 kWh, at a cost of \$12,351. In comparison, the estimated annual energy production of the wind turbine should range from 109,000 kWh to 152,000 kWh. The city estimates annual savings of \$14,000 to \$20,000 at 2011 rates, which includes revenues generated from selling excess energy back to We Energies. The turbine's output will offset fossil generation, with its associated emissions and other environmental impacts, from nearby power stations. Standing alongside a port through which millions of dollars worth of windpower components enter and exit, Milwaukee's wind turbine stands as a striking symbol of both the city's embrace of a clean energy future as well as its strong desire to become a regional hub of wind energy manufacturing.