

# Wind Turbines in Kalamazoo

## At Western Michigan University

“I wanted to stick a pole in the ground and make a statement,” says Professor John Patten, department chair and director for WMU’s Manufacturing Engineering Department, who paid for Kalamazoo’s first wind turbine with money from his personal WMU account. “I got interested in the wind energy business in 2004. I had been going to meetings, but I wanted a demonstration project,” he says.

John made the decision to plant the turbine near WMU’s College of Engineering and Applied Sciences building on the Parkview Campus in March 2007. He obtained approvals from university administrators, then advised neighboring businesses and city and township officials of his intentions in April. The \$10,000 turbine was up and producing power by the end of July. Today, the turbine can be seen while driving along U.S. 131 south of the Parkview Avenue overpass.

The turbine sits on a relatively

**Wind turbine located at WMU’s Business Technology and Research Park.**



Photo: Rick Bifasce

short tower of 45 feet and is rated to generate 1.8 kilowatts of electricity. “The rating measures capacity at wind speeds of 20 to 25 knots. On average, it spins half the time and operates at only 15 percent of its rated capacity, but I’ve seen it put out 2.5 kilowatts and as much as 4 kilowatts when the wind is howling,” John says.

The turbine’s output represents only about one-tenth of one percent of the electricity used within the college’s 343,000-square-foot building. “It’s a small turbine and a big building,” John states, “but if I had this turbine at home, it would reduce my electric bill by 25 percent.

Located where it is, students are reaping the benefit of capturing and analyzing data from the meters they have attached to it. This data reinforces John’s vision for future wind generation. He says the time will come when populations will be served by turbines of various sizes. “The wind current is different at 300 feet above the ground than it is at 45 feet,” John states. “Short turbines get more wind during the daytime, while the big ones get more wind and generate more electricity at night. He believes clusters of small turbines, combined with solar panels, can produce enough electricity to operate homes and businesses during the day and megawatts from big turbines can be used to recharge the nation’s future fleet of plugged-in hybrid-electric vehicles overnight.

## At Kalamazoo Valley Community College

Seeing a need for technical skills in the growing wind-energy industry, KVCC built its wind turbine as a teaching model. The turbine’s erection in



Photo: Robert Weir

**WMU professor John Patten uses electricity generated by the WMU turbine to recharge batteries in his conversion hybrid Toyota Prius, which he retrofitted with additional batteries and plug-in capability.**

January 2009 coincides with the launch of the college’s trendsetting program to train students to install, operate, and maintain turbines that range in size from large utility-grade units found on wind farms to smaller commercial and residential units.

The turbine, located on the Texas

**Wind turbine on the campus of Kalamazoo Valley Community College.**



Photo: Courtesy of KVCC

Township campus, is of commercial, or medium, size. Standing on a 145-foot tower, it has the capacity to generate 50 kilowatts of electricity, which will supply up to 15 percent of the electrical requirements of the technical wing at KVCC's Michigan Technical Education Center (M-TEC) facility.

Because KVCC will become a national training center, James DeHaven, vice president for economic and business development, says, "These training opportunities will bring people from all over the United States to Kalamazoo as the college continues to lead by example

when it comes to weaning the country away from dependence on fossil fuels.

The college will initiate two programs in 2009 that will provide training in both mechanical and electrical skills. One will provide students with basic certification in wind energy for commercial- and residential-size units. The second, based on industry-leading European standards, will teach skills needed for installation and maintenance of utility-grade turbines.

Cindy Buckley, executive director of training at the M-TEC facility, says she has already received calls from

companies wanting to hire program graduates. "Jobs won't be available locally because there are not enough wind farms in Michigan yet," Cindy states, "so the program appeals to those who want to travel while working in construction trades.

In addition, KVCC will offer wind-energy seminars to colleges, municipalities, companies and a summer camp for teenagers to learn about wind-related career opportunities.

For more information, visit <http://windenergycenter.kvcc.edu> or call 269-353-1253. 📞

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