

Business Journal

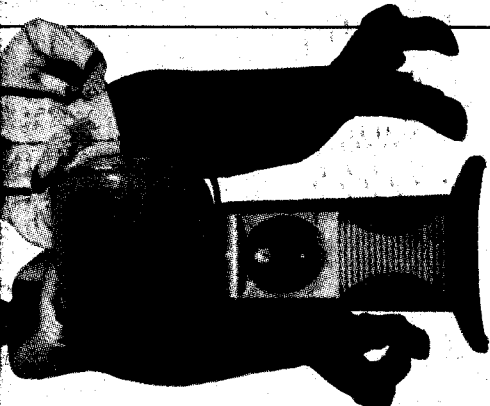
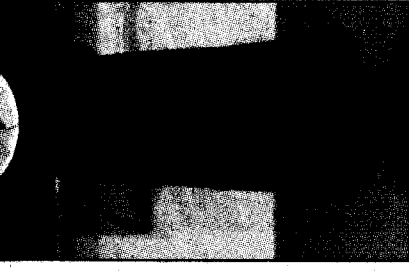
SERVING GREATER MILWAUKEE

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STOCK

Indoor theater finds audience

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BACK TO THE FUTURE

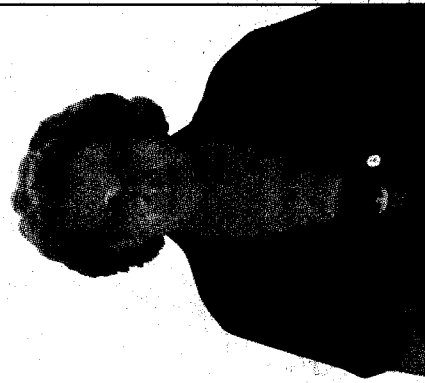
Dave Riedel and Mike Lipscomb meet demand for retro-style TVs.

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VULTURE INVESTOR

APW Ltd. expects its new majority shareholder to maintain a long-term stake

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REVEALING IN REDEVELOPMENT

Megan Riviere is the new anchorwoman for downtown West Allis

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THE LIST

Ogden & Co. Inc. leads list of residential property

Huge wind farm slated for Darlington

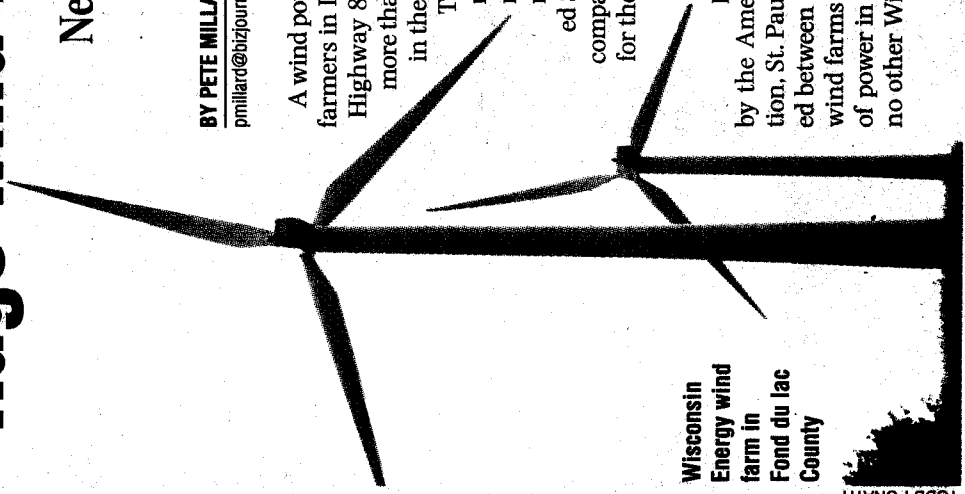
New development would supply We Energies

BY PETE MILLARD
pmillard@bizjournals.com

A wind power development company is negotiating with farmers in Lafayette County to build a wind farm along Highway 81 in southwestern Wisconsin that would be more than six times larger than any existing wind farm in the state.

The prospective developer of the proposed 200-megawatt wind farm is a national firm with more than a dozen other wind projects already running throughout the United States. An executive with the company would not discuss its plans for the Darlington area.

The Darlington project is one of 16 new Midwest wind power developments identified by the American Wind Energy Association, St. Paul, Minn., that will be completed between 2003 and 2007. The 16 new wind farms would add 5,500 megawatts of power in the upper Midwest. There are no other Wisconsin projects on the wind



Wisconsin Energy wind farm in Fond du lac County

Todd Ponath

SEE DARLINGTON, PAGE A53

Wind lines could cost \$100 million in state

BY PETE MILLARD
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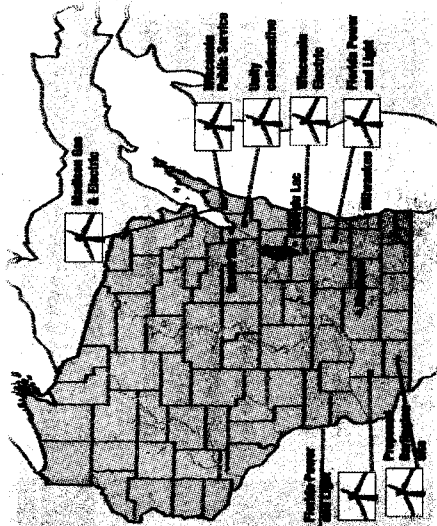
Wind energy development companies plan to build some 6,500 windmill-like electricity generators throughout the Midwest that will produce thousands of megawatts of power and will require transmission lines to connect far-flung wind farms to urban markets where the

SEE WIND LINES, PAGE A53

WIND POWER IN WISCONSIN

Existing and proposed wind farms in Wisconsin.

Source: Wis. Dept. of Administration



Pittsburgh high-tech firm

organization, estimating that it plans producing 10,000 megawatts of new power will be constructed in rural areas across nine Midwest states by 2007. A 200-megawatt wind farm in Darlington is being planned by a national wind-power developer (see accompanying story).

Since major transmission lines are not common in rural areas, the American Wind Energy Association, a wind power company trade group based in Washington, D.C., is leading the appeal to invest billions of dollars in new and expanded transmission facilities in the Midwest.

The wind energy groups are working with Midwest Independent System Operator to force utilities to invest in transmission lines that would transport wind power. MISO represents 40 utility companies in 25 states, including Wisconsin.

MISO is a regional transmission organization created two years ago to monitor

and to the regional power transmission grid.

In Wisconsin, the responsibility for planning and building new high-voltage transmission lines falls on the American Transmission Co. ATC recently released its 10-year assessment of capital spending needs for electric transmission for Wisconsin. The 10-year plan carries a price tag of \$1.5 billion and does not include all of the transmission upgrades required to transport wind energy.

"We fully expect to modify our plan if there is new generation proposed or load growth in areas that were not forecasted in the past," said Teresa Mogensen, director of transmission planning and customer service for ATC.

ATC already has plans to beef up high-voltage transmission connections from Wisconsin to Illinois and Minnesota that

new wind power from the three states can be transported into Milwaukee or Chicago, seven transmission line upgrades, including three in Wisconsin, would have to be undertaken.

In Wisconsin, the American Wind Energy Association claims there would have to be expansions to two existing 34.5-kilovolt lines that connect the state to Illinois and Minnesota.

We Energies, the public utility subsidiary of Wisconsin Energy Corp., has committed to purchase 5 percent of the electricity it supplies to customers from renewable energy sources by 2011.

Wind power facilities can be constructed two to three times faster than natural-gas and coal plants, putting even more pressure on transmission planners to build or upgrade transmission lines.

A project-by-project approach to transmission expansion planning may need to

improved in an arbitrary in the past 20 years and will continue to improve as the industry matures," said Dunlop.

Since 1982, new wind turbines have increased from less than 50 kilowatts in output capacity to more than 1,500 kilowatts or 1.5 megawatts. Turbine rotors have mushroomed in size from less than 20 meters in diameter to between 70 and 100 meters in diameter.

Prices for wind-generated electricity have also dropped more than 90 percent since the early 1980s, said Dunlop. Wind-powered electricity is now more practical for power companies to purchase. In most areas of the Midwest, wind power can be produced for about 4 cents per kilowatt hour.

Utilities in Wisconsin produce electricity from coal, natural-gas and nuclear plants for between 2 and 3 cents per kilowatt hour.

DARLINGTON: Huge wind farm slated for southwestern Wisconsin

CONTINUED FROM PAGE A1

energy group's list.

The primary reason for building the 200-megawatt wind farm in southwestern Wisconsin is to accommodate We Energies' voluntary pledge to purchase 5 percent of the electricity it supplies customers from renewable power resources by 2011, said Beth Soholt, executive director of Wind on the Wires, a St. Paul group sponsored by the Isaac Walton League, an environmental organization.

We Energies, the public utility subsidiary of Wisconsin Energy Corp., Milwaukee, announced two months ago it plans to in-

crease the amount of renewable energy sources it purchases.

"There are growing markets for wind power in Milwaukee and Chicago," said Soholt. "Some of the best resources in Wisconsin are in the southwest part of the state."

FPL ENERGY FARM

The Darlington wind farm would be about 30 miles south of a 30-megawatt wind farm in Montfort owned by FPL Energy Inc., Vero Beach, Fla. Over a three-mile route in rural Montfort, FPL installed 20 towers with turbine rotors measuring more than 70 meters in diameter that produce 1.5 megawatts of electricity. The Montfort wind farm is in its second year of operation.

Three farmers in the Montfort area who agreed to have the wind turbines constructed on their property receive \$3,000 per tower each year as payment. We Energies purchases 2.5 megawatts

of power from the FPL wind farm in Montfort.

PLAN NOT FILED

The wind power development company studying the Darlington area has not yet filed a plan with the Wisconsin Public Service Commission and has not pursued conditional use permits from the Lafayette County planning department.

"We have few zoning ordinances here, so they could build almost anything without us being involved," said Steve Huebner, director of planning for Lafayette County.

Wind power developers typically sign long-term leases with farmers and other landowners who agree to let the firms build the wind generators on their property.

The best potential sites in Darlington are located on a 14-mile long ridge west of the city. The majority of land along the route is owned by dairy and grain farmers. The Darlington area is well suited to accom-

modate wind power because of the steady winds that average about 15 miles per hour in southwestern Wisconsin.

The Wisconsin PSC will have to be notified by the wind developers before construction because all power facilities that produce more than 100 megawatts of electricity in Wisconsin need PSC approval.

Lafayette County officials expect the wind farm to develop incrementally over the next five years.

The wind farm may require that Wisconsin transmission planners at American Transmission Co., Pewaukee, build a new 138-kilovolt transmission line into Darlington to transport the power to urban markets.

An existing 138-kilovolt line seven miles south of Darlington runs east-west from Cassville to Janesville. A 115-kilovolt electric line already operates in the Darlington area.

CONTINUED FROM PAGE A1

power is needed.

More than \$100 million is likely to be invested in expanded transmission lines in Wisconsin to accommodate wind power, said a Wisconsin Public Service Commission spokesman. A

precise figure is not available because wind energy developers have not submitted formal plans. The vast scope of the new transmission lines has high-voltage transmission planners at American Transmission Co. in Pewaukee and at the Midwest Independent System Operator (MISO) in Carmel, Ind., wondering how they will meet the demand.

The American Wind Energy Association and Wind on the Wires, a group funded by the Isaac Walton League, an environmental organization, estimate that wind farms producing 10,000 megawatts of new power will be constructed in rural areas across nine Midwest states by 2007. A 200-megawatt wind farm in Darlington is being planned by a national wind-power developer (see accompanying story).

Since major transmission lines are not common in rural areas, the American Wind Energy Association, a wind power company trade group based in Washington, D.C., is leading the appeal to invest billions of dollars in new and expanded transmission facilities in the Midwest.

The wind energy groups are working with Midwest Independent System Operator to force utilities to invest in transmission lines that would transport wind power. MISO represents 40 utility companies in 25 states, including Wisconsin.

MISO is a regional transmission organization created two years ago to monitor

traffic on the interstate transmission lines in the Midwest. It also has authority to recommend how to improve shipments of electricity among states over high-voltage transmission lines.

Investments in transmission lines are covered by ratepayers in their respective states.

The wind energy association has even recruited prominent lawmakers, such as Senate Majority Leader Tom Daschle (D-S.D.), to pressure federal agencies and other organizations for new transmission lines and upgrades. Daschle has met with the Federal Energy Regulatory Commission and written to the head of MISO, pointing out the potential of wind power and the problems of getting the wind-generated electricity to urban markets.

"The development of additional wind resources will be hindered without additional transmission capacity," said Daschle in a letter to Jim Jorgerson, chief executive officer of MISO.

LOGISTICAL CHALLENGES

In addition to the challenge of financing new transmission lines, scores of logistical problems could arise when connecting smaller power sources, like wind farms, to the regional power transmission grid.

In Wisconsin, the responsibility for planning and building new high-voltage transmission lines falls on the American Transmission Co. ATC recently released its 10-year assessment of capital spending needs for electric transmission for Wisconsin. The 10-year plan carries a price tag of \$1.5 billion and does not include all of the transmission upgrades required to transport wind energy.

"We fully expect to modify our plan if there is new generation proposed or load growth in areas that were not forecasted in the past," said Teresa Mogensen, director of transmission planning and customer service for ATC.

ATC already has plans to beef up high-voltage transmission connections from Wisconsin to Illinois and Minnesota that

may be suitable for handling additional wind power, such as what would be generated by a Darlington wind farm.

The Darlington project is one of 16 wind farms identified in a report from the American Wind Energy Association. The association is raising awareness of wind power and calling on transmission planners to include wind in their strategic assessments.

RAISING AWARENESS

"Raising awareness is a great first step," said Mogensen. "But it takes time for us to determine how facilities impact the system when they are interconnected."

New wind power from developments in South Dakota, Iowa and Wisconsin would be earmarked for sale to utilities in the Milwaukee-Chicago markets. Wind power companies have three projects in Iowa, two in South Dakota and one in Wisconsin under development.

Before the estimated 1,700 megawatts of new wind power from the three states can be transported into Milwaukee or Chicago, seven transmission line upgrades, including three in Wisconsin, would have to be undertaken.

In Wisconsin, the American Wind Energy Association claims there would have to be expansions to two existing 345-kilovolt lines that connect the state to Illinois and Minnesota.

We Energies, the public utility subsidiary of Wisconsin Energy Corp., has committed to purchase 5 percent of the electricity it supplies to customers from renewable energy sources by 2011.

Wind power facilities can be constructed two to three times faster than natural-gas and coal plants, putting even more pressure on transmission planners to build or upgrade transmission lines.

A project-by-project approach to transmission expansion planning may need to

be changed, because it fails to accommodate wind projects that are developed in smaller increments, said Beth Soholt, executive director of Wind on the Wires, St. Paul, Minn.

WIND OUTPUT TO DOUBLE

Wind energy is the fastest-growing power technology in the world, said John Dunlop, regional director of the American Wind Energy Association in St. Paul, Minn.

The wind energy market throughout the world is projected to reach 60,000 megawatts over the next five years, more than doubling its present output, said Dunlop.

The United States installed 1,695 of megawatts of new wind power in 16 states in 2001. Texas installed 915 megawatts of wind power alone. In the Midwest, more than 800 megawatts of wind power are currently operational, with another 1,000 megawatts in near-term development.

Wisconsin Energy owns a 1.3-megawatt wind farm in Fond du Lac County.

"The economics of wind power have improved dramatically in the past 20 years and will continue to improve as the industry matures," said Dunlop.

Since 1982, new wind turbines have increased from less than 50 kilowatts in output capacity to more than 1,500 kilowatts or 1.5 megawatts. Turbine rotors have mushroomed in size from less than 20 meters in diameter to between 70 and 100 meters in diameter.

Prices for wind-generated electricity have also dropped more than 90 percent since the early 1980s, said Dunlop. Wind-powered electricity is now more practical for power companies to pursue. In most areas of the Midwest, wind power can be produced for about 4 cents per kilowatt hour.

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Mogensen