THE WINDUSTRY™ NEWSLETTER

Spring 2003

Reading, Writing, Wind Energy & Arithmetic

Case Study: Eldora, Iowa

FROM HIS OFFICE IN the small central Iowa town of Eldora, Eldora-New Providence Community School District Superintendent Bill Grove can see the money his district is saving in energy costs every day by tracking the performance of the wind turbine standing on the grounds of the high school.

The 750 kW NEG Micon turbine was installed last fall after years of negotiations, setbacks and planning with the school board and the local utility. The idea of the Eldora-New Providence school district producing its own electricity from wind power was conceived in the mid-1990s when school officials were brainstorming ways to save money. The first step was a meeting with the local utility, IES Utilities, Inc. (now part of Alliant Energy), that turned out to be crucial to the ultimate success of the project. "The utility vice president's jaw hit the floor when he realized that we weren't making any demands, just asking if we could all work together. They're not used to being approached like that and it really set a positive tone that served us all well in the end," said Grove.

The original plan for the project called for installing a 250 kW turbine at the high school, which would have closely matched the electricity needs of that building, the district's largest electricity user. However, the first interconnection agreement offered by Alliant would not have produced a positive revenue stream for the school district, creating the first of many hurdles for the project. Eventually, by going through the Iowa Utilities Board, the district secured an arrangement where the wind turbine's electricity would offset the high school's electricity use, extra energy would be sold to Alliant at the avoided cost rate, and any additional energy needed by the high school would be purchased from the utility at retail rate.

With the legal issues settled, Grove and the school board hoped to move forward quickly. They hired wind energy consultant Tom Wind to do a feasibility study and recommend the best site for the turbine. However, the project's second major obstacle appeared when the district did not receive a single bid for installing a 250 kW machine. They discovered that most wind turbine manufacturers were moving toward larger, more profitable machines and were phasing out the 250 kW turbines.

With all the plans revolving around buying a 250 kW turbine, the project easily could have fallen apart with this setback. However, the spirit of cooperation established in that very first meeting with the utility reemerged to save the project. Alliant offered to allow the Eldora-New Providence schools to use the electricity generated by a larger turbine to offset all of the district's electricity use, rather than just the high school's consumption. Grove was careful to point out that the utility might not offer this particular arrangement to everyone, but that the benefits of working cooperatively with the utility for this project could be a lesson for other schools.

With this new agreement, Tom Wind performed a new feasibility study for a 750 kW wind turbine. The numbers still looked favorable for the revised plan, thus in late 2001, the school district tried again to request bids, this time for the larger turbine. The second try proved more fruitful than the first and by March 2002 the district contracted with NEG Micon and had a turbine installed on October 21, 2002.

Grove expects the new turbine to generate enough electricity to offset the entire school district's electricity bill and sell some power back to the utility. The energy savings and the extra revenue from selling electricity should be more than enough to cover the $97,729 annual loan payment. When the loan is paid off in ten years, all the savings and revenue will simply be extra money for the Eldora-New Providence schools. So far, the turbine is meeting and even exceeding these expectations.

The school district borrowed a total of $800,000 to finance the project – including the cost of the turbine, consultant and attorney fees, interconnection fees, and an extended 5-year warranty – and expects to pay off the loans in ten years. Part of the financing came through a $250,000 no interest loan from the Iowa Energy Bank, an energy management program run by the Iowa Department of Natural Resources Energy Bureau. The remaining $550,000 was borrowed from the local Hardin County Savings Bank of Eldora at 5.5 percent interest. Combined with the no interest loan, the average annual interest is only 2.1 percent. For the first 5 years, the district will also pay $8,000 for a maintenance contract with NEG Micon, but Grove hopes the district will have its own maintenance crew trained by the end of that time. This low-interest financing package and the interconnection agreement combined with the area's decent, but not outstanding wind resource to make this project

continued on reverse

Source: Eldora-New Providence School District

Revenue and Production Projections:
Eldora-New Providence School District wind turbine

Projected energy savings per year	*$90,000*
Annual loan payments for turbine (first 10 years)	*$97,729*
Projected annual production from 750 kW NEG Micon turbine	*1.5 million kWh*
Projected annual revenue from excess energy production (sold at 3.8¢/kWh)	*$19,000*
Projected annual profit during first ten years of operation	*$12,000*
Projected annual profit and savings after the first ten years	*$109,000*

Statistics from January-March 2003

Energy generated	*406,440 kWh*
Energy used	*335,433 kWh*
Energy savings	*$25,170*
Excess energy generated	*71,007 kWh*
Extra income generated	*$2,698*

Source: Eldora-New Providence School District

SCHOOL WIND TURBINE *continued*

economically viable.

Today, the 160 foot tall turbine stands in a field just behind the high school where physics students can track the electricity production along with the superintendent. "We've gotten just what we wanted," said Grove, citing the school's new role as an innovator in both education and environmental protection. And perhaps even more importantly, he said, "We have an inflation-proof investment for the next 25 years."

Eldora-New Providence School District is the latest of half a dozen school districts in Iowa to invest in wind energy. Many more schools in Iowa, Minnesota and around the Midwest are exploring using wind power to reduce their energy costs. Grove alone has received more than a dozen inquiries from other school districts. The Spirit Lake School District in northern Iowa was the pioneer for this kind of project, installing the first of its two wind turbines in 1992. For more information about wind energy and schools or other community-based wind projects, visit *www.windustry.org/community*.

WORKSHOPS/EVENTS

May 18-21, 2003, Austin, Texas: WINDPOWER. *The American Wind Energy Association's annual conference. Visit www.awea.org or call 202.383.2500.*

June 19, 2003, Norman, Oklahoma: Oklahoma Wind Power and Bioenergy Conference*. For more information, contact Kylah Kissinger at 405.447.8412 or windgirl@ou.edu, or visit www.seic.okstate.edu/owpi.*

June 20-22, 2003, Custer, Wisconsin: Renewable Energy and Sustainable Living Fair. *For more information, visit www.the-mrea.org or contact the Midwest Renewable Energy Association at 715.592.6595 or info@the-mrea.org.*

WIND ENERGY NEWS

$23 million available for renewable energy and energy efficiency

THE UNITED STATES Department of Agriculture (USDA) issued a Notice of Funds Availability (NOFA) in April inviting applications for the Renewable Energy Systems and Energy Efficiency Improvements Grant Program, created in the 2002 farm bill. The program offers grants for renewable energy systems (including wind turbines) to agricultural producers and rural small businesses. The grants can be used to pay up to 25 percent of the cost of an eligible project. Next year the program will be expanded to include loans and loan guarantees if it does not fall victim to budget cuts. More information is available at *www.windustry.org/resources/farmbill.htm* or by calling your state's USDA Rural Development Office. The deadline for applications is June 6, 2003.

Minnesota PUC approves Buffalo Ridge power line

THE MINNESOTA Public Utilities Commission significantly advanced wind power in Minnesota by ordering Xcel Energy to proceed with building a new set of power lines and power line upgrades designed to bring wind power from southwestern Minnesota to the Twin Cities. In the March 11th Order, the PUC requires that the timeline for building the power lines match Xcel's timeline for building wind turbines in the area, ensuring that the power line will be used to carry wind-generated electricity. Another condition requires Xcel to purchase up to 60 MW of wind owned by local farmers, communities and small businesses.

November Conference Proceedings Now Available

AUDIO RECORDINGS, presentation visuals and links to additional information are available for nearly all of the 90 presentations made at ***Wind Energy: New Economic Opportunities*** conference in November: *www.windustry.org/conference/proceedings*.

ABOUT WINDUSTRY

Windustry *builds collaborations and provides technical support to create an understanding of wind energy opportunities for economic development. Windustry recently incorporated as its own 501(c)(3) non-profit organization, but remains partnered with the* ***Institute for Agriculture and Trade Policy,*** *another non-profit that promotes resilient family farms, rural communities and ecosystems around the world through research and education, science and technology, and advocacy.*

The Wind Farmers Network *now has financial support for development in Minnesota, North Dakota, and South Dakota. Watch www.windustry.org for more information in the coming months. The purpose of this initiative is to bring together a broad range of landowners, farmers and ranchers to exchange their experiences in wind development and educate others who would like to begin farming the wind. If you would like to join the network, please send your contact information and a brief sentence describing your wind energy interests to Windustry or join online at www.windustry.org/about/join.htm. Your information only may be shared within the network.*

WINDUSTRY™

Windustry
2105 First Avenue South
Minneapolis, MN 55404
800.946.3640
info@windustry.org
www.windustry.org

Lisa Daniels, *Editor, 612.870.3462*
Sarah Johnson, *Assoc. Editor, 612.870.3461*

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WINDUSTRY™
2105 First Avenue South
Minneapolis, MN 55404

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