

Winds of Change

*Wind turbine at West Central Research and Outreach Center:
a national model for renewable energy*

WCROC | University of Minnesota
West Central Research and
Outreach Center • Morris

UNIVERSITY OF MINNESOTA



On March 7, 2005, the first large-scale wind research turbine at a U.S. public university began generating power. Located at the University of Minnesota's West Central Research and Outreach Center, near the University's Morris campus, the tower is an important step in integrating renewable energy into Minnesota's rural economies as well as developing Minnesota's research and education strength around renewable energy.

A rural model for the nation...

Planned research and demonstration projects will focus on wind storage and on-demand renewable energy systems such as biodiesel generation, biomass and hydrogen fuel cells.

Facts and figures...

In addition to research, the wind turbine is expected to produce 5.6 million kilowatt hours of power each year for use at the University of Minnesota, Morris (UMM). That amount of energy is more than half of UMM's annual electricity use.

- **Groundbreaking** for turbine construction was held November 10, 2004.
- **Turbine dedication** ceremonies were held on Earth Day, April 22, 2005.
 - **The wind turbine** is a 1.65 megawatt Vestas NM 82.
 - **It sits on a** 230-foot high tower. Each blade is 135 feet in length.
- **The turbine will begin producing electricity** when the wind speed reaches 7.8 miles per hour at 230-feet and will reach its maximum production of 1.65 megawatts of electricity at wind speeds of 29 miles per hour.
- **According to wind data collected at the WCROC**, the turbine location above the Pomme de Terre River has an average annual wind speed of more than 16 miles per hour at 230 feet.

WCROC: A tradition of pioneering research

The West Central Research and Outreach Center has a tradition as an early pioneer in ethanol research. In the early 1980s the WCROC built the first ethanol research facility in the state. Minnesota's ethanol industry has now grown to be a national leader with 14 plants producing 300 million gallons of ethanol and annual sales of \$380 million.

"Our belief is that the renewable energy research and education we are doing now will deliver a great benefit to Minnesota. Renewable energy is poised to become an important part of our state and nation's energy future, and Minnesota will be a leader in this work."

-- Greg Cuomo, head of the WCROC in Morris

The West Central Research and Outreach Center

The University of Minnesota's West Central Research and Outreach Center (WCROC) is located in Morris, Minnesota. The WCROC, part of the U of M College of Agricultural, Food and Environmental Sciences, celebrated its 90-year anniversary in 2004 -- providing a tradition of excellence in applied agricultural research and education for farmers and rural communities in crop production, animal sciences, horticulture, water quality, economics, rural sociology, and forage management. Read more at <http://wcroc.coafes.umn.edu/>.

The University of Minnesota, Morris

The University of Minnesota, Morris is an academically rigorous, public undergraduate liberal arts college. UMM is the only college in the Midwest to be named one of the top three public liberal arts colleges in the nation by U.S. News & World Report in its 2005 rankings of America's Best Colleges. Declared "a model liberal arts college" by the North Central Association of Colleges and Schools in its recent re-accreditation report, UMM's goal is to be the best public liberal arts college in America. Read more at <http://www.morris.umn.edu/>.

University of Minnesota

The University of Minnesota Initiative for Renewable Energy and the Environment (IREE) has provided leadership and funding to stimulate development of this research and demonstration system. IREE is a key part of University of Minnesota President Robert Bruininks' Initiative on Renewable Energy and the Environment.

President's Interdisciplinary Initiatives

The University of Minnesota Renewable Energy Center at Morris is led by the University of Minnesota in partnership with these key stakeholders in rural west central Minnesota:

University and Research Organizations

West Central Research and Outreach Center
University of Minnesota, Morris
Initiative for Renewable Energy and the Environment
West Central Regional Sustainable Development Partnerships
Agriculture Utilization Research Institute (AURI)
South Dakota State University
University of North Dakota Energy and Environmental Research Center (EERC)
USDA / ARS North Central Soils Lab

Non Government Organizations

Clean Energy Resource Teams (CERTS)
MN Soybean Growers
MN Soybean Research and Promotion Council
MN Corn Growers
MN Corn Research and Promotion Council
Southwest Foundation
Upper Midwest Hydrogen Initiative

Government Agencies and Programs

State and Federal Legislators
City of Morris
MN Department of Commerce Energy Office
Legislative Commission on Minnesota Resources
MN Office of Environmental Assistance
Stevens County Economic Improvement Commission

Companies

Otter Tail Power Company
Great River Energy
Xcel Energy
Diversified Energy LLC
Chippewa Valley Ethanol Company
Runestone Electric Association

A large number of agriculture producers, citizens, and University of Minnesota faculty are also key partners in the Renewable Energy Research and Demonstration Center at Morris.

For more information contact:

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