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INSTITUTION

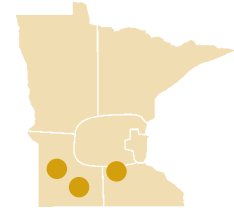
PROJECT/REQUEST

LOCATION

Minnesota West Community & Technical College and Minnesota State University, Mankato

Minnesota Center for
Renewable Energy

\$2,000,000



Granite Falls, Jackson,
Mankato

Project at a Glance

- Work with regional, state and national business and industry on applied research projects related to extracting energy from biomass resources and wastes, solar and wind energy
- Develop new levels of energy efficiencies, sustainability and conservation
- Move Minnesota toward sustainable energy independence and contribute to national sustainable energy efforts

Project Description

The Minnesota Center for Renewable Energy is a new initiative of Minnesota State University, Mankato, and Minnesota West Community and Technical College. The center will operate as an applied research consortium of faculty, business and industry partners, and entrepreneurial leaders.

The center's purpose is to move the Midwest toward greater environmentally friendly, sustainable energy use and energy independence and to contribute to a system of such energy resources nationwide. The center is designed to use a virtual relationship with its partners, focusing on promoting

conservation and energy efficiency through applications of technologies including wind energy, ethanol, biodiesel, biowastes, fuel cells, hydrogen and biorefinery applications.

The center also will serve as a learning laboratory for undergraduate and graduate students, supporting technician training, applied research and technology transfer.

Predictions that world oil production will peak in 10 to 15 years heighten the need for national programs to increase sustainable energy resources that will reduce dependence on foreign oil.

The Upper Midwest is a leader in advancing the use of alternative fuels and providing the necessary workforce training to support this emerging industry. Southern Minnesota is rich agriculturally and has excellent wind generation potential.

This center will work toward expanded renewable energy deployment opportunities in wind, ethanol, biofuels, fuel cell technology, conservation and energy efficiency through applied research. The center also will provide technical



Southern Minnesota ranks high as a production zone for wind energy and ethanol production.

training for a workforce to work in the renewable and wind energy industries.

The initiative will develop the technical staff, as well as the

applied research and development capacity to fully tap southern Minnesota's rich agricultural resources for biofuels production. The project

also takes advantage of the region's favorable Zone 3 and Zone 4 ranking for wind.

Minnesota Center for Renewable Energy

Minnesota State University, Mankato is developing a national reputation for its research with manufacturing companies, processes and practices for the use of renewable and recyclable resources. The university is the lead institution of the new Center for Manufacturing and Engineering Excellence, one of four Centers of Excellence designated by the Board of Trustees of Minnesota State Colleges and Universities.

The Minnesota Center for Renewable Energy will pursue renewable and wind research activities to contribute to the nation's energy independence through development and use of renewable fuels. In addition, the center will alleviate shortages of qualified personnel to work in ethanol production and wind energy. These shortages have limited the expansion and application of these industries as a national resource.

Specific goals will include:

Biomass Applied Research

- Optimization of anaerobic digesters for plant biomass
- Fischer-Tropsch method to convert biofuels to more easily marketed liquid forms

- Renewable carbon optimization research
 - Alternative fuels research from multiple forms of biomass
 - Renewable carbon for industrial uses
 - Development of biomass crops

Non-biomass applied research

- Wind energy
- Photovoltaic energy

Workforce education and training

- Entry- and advanced-level technician training for energy production industries
- Training delivered via alternative methodologies including onsite, online, CD-based, instructor-led and blended training
- Industry involvement in curriculum development including incorporation of evolving technologies

These projects will represent the future of sustainable energy and will allow the Minnesota Center for Renewable Energy to demonstrate strong leadership in the field. The center will provide important applied research initiatives and opportunities, offer a basis for public-private partnerships with regional industries, enrich student education and provide economic benefits to renewable energy operations and Midwest communities.

Participating Institutions:

Minnesota West Community & Technical College
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Minnesota State University, Mankato
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President Richard Davenport
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Industry collaborators:

- Minnesota Soybean Association
- Minnesota Corn Growers Association
- John Deere
- Case-IH
- KatoLight
- Cummings Engines
- Minnesota Hog Producers Association
- Sebestra Blomberg and Associates
- Induction Research
- Davisco Company



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