



CLEAN ENERGY RESOURCE TEAMS

Highlighting The Past, Energizing The Future

How can some of the \$13 billion Minnesotans annually spend on energy be kept in our local communities? By creating new economic opportunity. Citizens from around the state have developed a bold vision for Minnesota's energy future, through greater energy efficiency and production from clean 21st Century technologies including biofuels, wind, biomass, and solar.

Their vision is becoming a reality, one project at a time. The Clean Energy Resource Teams (CERTs) project, launched in 2003, is connecting citizens with the technical resources they need to identify and implement community-scale energy efficiency and clean energy projects.

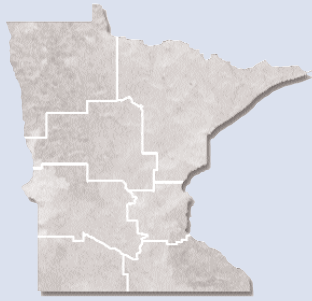
The Clean Energy Resource Teams are very diverse — individuals as well as small business owners, farmers, members of environmental groups, local utility representatives, local, state and federal government staff and elected leaders, academics — but they share common goals and values. They want strong communities, local jobs, and secure, clean, reliable energy.

Each team has done a careful assessment of the energy and human resources in the region and developed a Regional Strategic Clean Energy

Plan and is implementing their project priorities. The Metropolitan Counties Energy Task Force directed its attention toward energy efficiency in buildings and spent its time on recommissioning projects to learn more about opportunities to reduce energy consumption.

THE PURPOSE OF CERTS IS TO ENGAGE CITIZENS IN ENERGY PLANNING.

Connecting people with similar interests has already made new clean energy projects possible. Academics found meaningful projects for students and ways to pilot inventions. Local utilities found creative allies for efficiency and new renewable projects. Schools and local governments found ways to cut energy costs and educate communities. Farmers and area businesses made connections that will help them



CERTS PROJECT OUTCOMES

- Convene Clean Energy Resource Teams in each of seven Minnesota regions with a range of stakeholders
- Perform Regional Resource Inventories to examine current energy usage and renewable energy resources in the region
- Develop Regional Strategic Energy Plans that highlight each region's top energy priorities
- Implement Select Projects including both conservation/energy efficiency projects and renewable energy projects



solve waste problems and become energy producers.

IT STARTS WITH EFFICIENCY

CERTs in the Northeast, West Central, Central, Metro, and Southwest will focus on technologies and practices for greater energy efficiency in schools and local government buildings. These cost-cutting innovations will impact the whole community. Connecting efficient energy use with curriculum in schools will prepare the next generation of innovators and consumers.

Southeast and Northeast CERTs are giving presentations to several civic organizations, and the other regions are engaging citizens with tours and workshops. Community wide programs, like a successful CERT small business lighting program in Winona, will increase productivity for area businesses.

New buildings can be energy smart, and members of the Central CERT are working with builders in the region to use the best designs and materials. A building boom is in full swing there, and energy efficient technologies put into place now will make a difference for years to come.

The Northwest region is hit hard by high winter fuel costs and the volatility in natural gas. They are focusing on

geothermal heating systems, which cuts energy use by 2/3. Area utilities want to participate, and the CERT is developing a fuel cost calculator and connecting utilities to developers, heating contractors and remodelers.

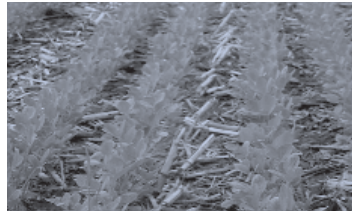
BIOFUELS FOR CLEAN AIR

Increasing local use of biodiesel and ethanol makes sense across the state. A survey and simple follow-up with county engineers resulted in doubling biodiesel use in 15 Southwest counties through identified opportunities. The Southeast CERT will use that model, and hopes friendly competition will increase use further. The Northeast CERT team is working to increase biodiesel use in school buses, reducing pollution for both children and communities.

The Central Minnesota Ethanol Co-op in Little Falls will soon be powered completely with waste wood and biomass — making a renewable fuel from a renewable fuel. The Central CERT team is highlighting the ethanol plant's pioneering work, and hopes to spread the model around the state.

BIOMASS IS CUTTING EDGE TECHNOLOGY

Minnesota has ample biomass resources, waste wood, crop residues, and dedicated energy crops, but large-scale projects have been difficult



to make work financially. Northwest CERT is breaking new ground by helping a University of North Dakota research lab pilot an onsite biomass gasifier. This small power plant on a flatbed truck could help area wood products businesses mitigate waste problems and power their operations at the same time.

Central and West Central CERTs also hope to support local biomass initiatives. To that end, CERTs is partnering with the Agricultural Utilization Research Institute and the Minnesota Department of Commerce to establish a biomass exchange website.

BIOGAS CAN BE EXPANDED
 Demonstration projects prove that manure can be turned into gas that

can replace natural gas or generate electricity. The Northwest CERT is learning about the potential for turning food processing waste into fuel for factories. The West Central team is working with others across the region to explore community digesters. They are working closely with a community energy project in Morris that includes a large area dairy, and cosponsored a biomass conference with the Kandiyohi County Ag Committee, also exploring pairing community food wastes with manure from expanding dairies.

SOLAR MAKES SENSE IN MINNESOTA

Solar power is still expensive, but technological advances are bringing

CERTs Member Snapshot:

- Business Representatives
- City and County Staff
- Economic Developers
- Educators and Researchers
- Farmers
- Foundation Representatives
- Entrepreneurs
- Individuals Interested in Energy Issues
- Legislators and Legislative Staff
- Media Professionals
- Municipal, Cooperative and Investor-Owned Utility Representatives
- Nonprofits
- Resource Conservation and Development Council Representatives
- State and Federal Agency Employees
- Tribal Representatives

REGIONAL CERT PROJECT PRIORITIES

Northwest: Mobile biogasifier to generate electricity from waste wood, create geothermal heating fuel comparison calculator and promote geothermal to cut home heating costs, biogas at food processing plants.

Northeast: Energy efficiency, conservation and renewable energy in schools and communities in each county.

Central: Energy smart buildings, solar, local biomass.

West Central: Community energy projects incorporating energy efficiency, biomass, biogas, and wind.

Southwest: Local ownership of renewable energy (current emphasis on wind), increased use of biofuels, energy efficiency

Southeast: Wind development – opportunities w/in transmission system (large & small), energy efficiency, outreach & education, convert existing facilities to biomass

Metro: Cutting energy use in county buildings



For More Information:

Lola Schoenrich
The Minnesota Project
651.645.6159 ext.4
lschoenrich@mnproject.org

Melissa S.B. Pawlisch
University of Minnesota
Regional Sustainable
Development Partnerships
612.624.2293
pawl0048@umn.edu

CERTs Partners:

Minnesota Department of
Commerce, The Minnesota
Project, University of
Minnesota Regional
Sustainable Development
Partnerships, Rural Minnesota
Energy Board, Metropolitan
Counties Energy Task Force,
Resource Conservation and
Development Councils

Funded by:

The Legislative Commission on
Minnesota Resources from the
U.S. Department of Energy Oil
Overcharge Money, The Carolyn
Foundation, The Blandin
Foundation, Minnesota
Department of Commerce, U.S.
Department of Energy, University
of Minnesota Initiative for
Renewable Energy and the
Environment, University of
Minnesota Regional Sustainable
Development Partnerships,
University of Minnesota, Morris
Center for Small Towns

costs down and Minnesota is as sunny as Florida. Several teams are making connections and highlighting demonstrations to accelerate solar adoption. Central CERT is partnering with an area nonprofit, which is installing solar hot water heaters for low-income consumers. The Northeast CERT is partnering on Minnesota Power's solar installer trainings and demonstration projects by the City of Duluth.

LOCAL OWNERSHIP OF WINDPOWER CREATES ECONOMIC OPPORTUNITY

CERTs members all over the state share the goal of creating opportunities for local ownership and energy independence. Farmer-owned biofuels cooperatives and locally-owned wind developments return more to the local economy and create opportunities for community participation in decision-making.

Southwest CERT is pioneering financial, legal, policy, and regulatory models for locally-owned wind. Their successes are fueling interest by farmers and businesses all over Minnesota and nationally. The Metropolitan Counties Energy Task Force passed a resolution in support of wind development work by the Rural Minnesota Energy Board. A study of the transmission system is

helping the Southeast CERT identify places in their region where small wind systems can interconnect. CERTs across the state will be building on the work of both of these regions.

COMMUNITY ENERGY SYSTEMS POWER CIVIC ENGAGEMENT

Everyone in a community has energy needs, and many businesses have waste products that could be used for power. Morris and the West Central CERT are trying something new. What if leaders came together to pair needs with opportunities through careful study and dialogue? How much of the community power needs could be met with local resources? The community, along with the West Central Research and Outreach Station, and the University of Minnesota-Morris is finding out. They are pairing wind and hydrogen production with biomass district heating, and perhaps a community biogas digester.

CERTs has pulled together hundreds of local people in person and hundreds more electronically for initial planning and implementation. The next phase is putting significant clean local power and energy efficiency to work, for the benefit of Minnesota and local communities.