2005 Project Abstract
For the Period Ending June 30, 2007

TITLE: Clean Energy Resource Teams and Financial Assistance Programs
PROJECT MANAGER: Stacy Miller
ORGANIZATION: Minnesota Department of Commerce
ADDRESS: 85 7th Place East, Suite 500 Saint Paul, MN 55101
WEB SITE ADDRESS: www.commerce.state.mn.us
FUND: Environment and Natural Resources Trust Fund
LEGAL CITATION: ML 2005, First Special Session, Chapter 1, Article 2, Section, 11, Subd. 10 (a), as amended by ML 2006, Chapter 243, Section 15, subdivision 10 (a).

APPROPRIATION AMOUNT: $300,000.00

Overall Project Outcome and Results

The Clean Energy Resource Teams (CERTs) provide technical assistance to implement cost-effective conservation, energy efficiency, and renewable energy projects throughout Minnesota. This is accomplished through a network of six regional teams working with the statewide CERTs coordinators to implement community-based energy projects that addressed their respective regional priorities.

CERTs awarded grants for technical assistance for at least two projects in each region, funding fifteen in all. An estimated thirty energy efficiency and renewable energy projects received assistance from CERTs while countless individuals consulted with CERTs coordinators for project advice.

The CERTs model has proven to be an effective way for citizens to participate in energy efficiency and renewable energy development. In 2006, the Minnesota Environmental Initiative recognized the Clean Energy Resource Teams with the *Partnership of the Year* award. As further affirmation of the CERTs model, both the governor and the legislature budgeted for a second phase of CERTs through fiscal year 2009. (Minnesota State Laws 2007, 216C.385.) This legislation also appropriated funds to create a seventh CERT to serve the Twin Cities area. A survey titled, *Report on the Clean Energy Resource Teams (CERTs) Project* is part of the final report and measures volunteer satisfaction with the CERTs program statewide at 95%. (See *Attachment D*.)

Project Results Use and Dissemination

Each CERT hosts a quarterly meeting that draws between 20 and 100 people. Additionally, there are frequent workshops and trainings. This year, the CERTs statewide conference drew 400 people from the public, private, and not-for-profit sectors.

Designing a Clean Energy Future: A Resource Manual was published in 2003 to highlight opportunities for communities to work together on energy issues. It offers basic information on energy efficiency, biofuels, solar, and wind as well as other renewable technologies with tips on how to implement projects. The manual is available in hard copy and at www.cleanenergyresourceteams.org.

The CERTs website had nearly 16,000 new visitors this year. Additionally, there are 1,100 e-mail subscribers to CERTs monthly updates which cover upcoming events, funding opportunities and regional project highlights.

The CERT model is receiving recognition nationwide. This fall, CERTs is presenting to the Will Steger Foundation Summer Institute, the Rural Youth Summit in Ames, Iowa and the Western Mountains Alliance in Maine. The presentations will focus on how partnerships between land grant universities, not-for-profit organizations, and state energy offices can be an effective way for citizens to get involved in implementing successful community-based energy projects.

October 1, 2007
LCMR Final Work Program Report-- Clean Energy Resource Teams

2005 LCMR Work Program A

Date of Report: ~~June 29, 2007~~ October 1, 2007
Date of Next Status Report: ~~July 15, 2007~~
Date of Work Program Approval:
Project Completion Dates: Clean Energy Resource Teams: June 30, 2007 / Community Wind Energy Rebate and Financial Assistance Programs: June 30, 2009

I. PROJECT TITLE: A. Clean Energy Resource Teams and B. Community Wind Energy Rebate and Financial Assistance Programs

Project Manager: Stacy Miller
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Location:

1. CERTs

Central Region: Counties of Becker, Benton, Cass, Crow Wing, Hubbard, Mille Lacs, Morrison, Ottertail, Todd, Wadena, and Wilkin; Staples
Northeast Region: Counties of Aitkin, Carlton, Cook, Itasca, Kanabec, Koochiching, Lake, Pine, and St. Louis
Northwest Region: Counties of Beltrami, Clay, Kittson, Lake of the Woods, Marshall, Mahnomen, Norman, Pennington, Polk, Red Lake, Roseau, and Wilkin
Southeast Region: Counties of Blue Earth, Dodge, Faribault, Fillmore, Freeborn, Goodhue, Houston, Le Sueur, Mower, Olmsted, Rice, Steele, Wabasha, Waseca, and Winona
Southwest Region: Counties of Brown, Cottonwood, Jackson, Lincoln, Lyon, Martin, Mower, Murray, Nobles, Pipestone, Redwood, Renville, Rock, Watonwan
West Central Region: Counties of Big Stone, Chippewa, Douglas, Grant, Kandiyohi, Lac Qui Parle, McLeod, Meeker, Nicollet, Pope, Renville, Sibley, Stevens, Swift, Traverse, and Yellow Medicine

2. Community Wind Rebate and Financial Assistance

To be determined

Appendix 1 Map 1: Clean Energy Resource Team Regions
Attachment A Budget
Attachment B Clean Energy Resource Team Mini-Grant Summary Information
Attachment C Request for Proposal: Energy Efficiency and Renewable Energy
Attachment D *Clean Energy Resource Teams (CERTs) Project, Phase One: Analysis of Online Survey of CERTs Participants*
Attachment E CERTs State Conference Agenda (available in hard copy only)

Projects

Total Biennial LCMR Project Budget:

LCMR CERTs Appropriation:	$300,000.00
Minus Amount Spent:	($299,993.00)
Equal Balance:	$7.00

Legal Citation: ML 2005, First Special Session, Chapter 1, Article 2, Section, 11, Subd. 10 (a), as amended by ML 2006, Chapter 243, Section 15, subdivision 10 (a).

Appropriation Language:
Clean Energy Resource Teams and **Community Wind Energy Rebate and Financial Assistance Programs**
10 (a) $350,000 the first year and $350,000 the second year are from the trust fund to the commissioner of commerce. $300,000 of this appropriation is to provide technical assistance to implement cost-effective conservation, energy efficiency, and renewable energy projects. $400,000 of this appropriation is to assist Minnesota communities in developing locally owned wind energy projects by offering financial assistance rebates. This appropriation is available until June 30, 2009, at which time the project must be completed and final products delivered, unless an earlier date is specified in the work program.

The above has been divided into two separate work programs, **Work Program A** for **Clean Energy Resource Teams** (CERTs) and **Work Program B** for **Community Wind Energy Rebate and Financial Assistance Programs**. This document, Work Program A, serves as the final report for the CERTs project. Work Program B will continue to be updated until project completion in June 2009.

II. and III. FINAL PROJECT SUMMARY: CERTs

Overall Project Outcome and Results

The Clean Energy Resource Teams (CERTs) provide technical assistance to implement cost-effective conservation, energy efficiency, and renewable energy projects throughout Minnesota. This is accomplished through a network of six regional teams working with the statewide CERTs coordinators to implement community-based energy projects that addressed their respective regional priorities.

CERTs awarded grants for technical assistance for at least two projects in each region, funding fifteen in all. An estimated thirty energy efficiency and renewable energy projects received assistance from CERTs while countless individuals consulted with CERTs coordinators for project advice.

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Project is part of the final report and measures volunteer satisfaction with the CERTs program statewide at 95%. (See *Attachment D.*)

Project Results Use and Dissemination

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IV. OUTLINE OF PROJECT RESULTS:

Clean Energy Resource Teams

Result 1: Energy Conservation Project Implementation

Description:

1. Outreach to and inclusion of utilities mandated to implement energy conservation improvement programs and others to plan time tested energy conservation projects within the regions.
2. Identify and disseminate existing energy conservation materials developed by the State Energy Office Energy and utilities and others to all regions of the state.
3. Work with utilities, Dept of Commerce and regional teams to identify resources and to implement conservation projects statewide.
4. Added to reflect budget breakdown in Attachment A: Implement energy efficiency component of regional clean energy action plans developed in year one and two; identify one or more demonstration projects in each region to receive focused technical assistance/services and bring focused technical assistance/services to that community and those projects.

For the purposes of this work plan, we define technical assistance/services as connecting project participants with the necessary technical expertise and skills (e.g., engineering, educational, financing) to implement local efficiency projects and achieve desired project outcomes. Projects can range from curriculum and outreach program development to engineering/design work and onsite installation assistance for building upgrades and modifications.

CERTs chose to deliver this technical assistance/services through regional competitive grant programs to encourage regional project development, ensure local commitment to project implementation, and develop regional networks, expertise, and infrastructure to implement not only these individual projects, but future regional projects as well.

The act of writing a proposal can be a valuable tool in helping a community develop their project ideas and small amounts of funding can often leverage additional project funds.

The process to issue these competitive grants consisted of the following:

- A standard RFP was developed by CERT coordinators and edited and modified by regional steering committees (see final version attached). This included the criteria by which each project would be evaluated.
- This RFP was then issued via regional CERT list serves, local press releases, and other regional and statewide list serves
- All regional project proposals were then reviewed in detail by their respective CERT Steering Committee based on the outlined criteria. Once projects were scored, Steering Committees worked to assess how to best allocate their limited dollars.
- Each CERT was invited to vote on dollars to award to projects based on recommendations from its Steering Committee.

Once teams selected projects for technical assistance, recipients were contacted by CERT Staff and asked to submit letters of intent with a specific timeline and project cost breakdown to the Minnesota Project. Minnesota Project then handled all of the necessary technical assistance/services contracting.

Summary Budget Information for Result 1	LCMR Budget	$98,530.00
	Revised Budget (8/1/06)	$76,830.85
	Revised Budget (7/3/07)	$97,701.16
	Balance	**($**90.80)

CERTs have become a recognized resource for technical assistance to individuals and communities needing information about energy efficiency and conservation projects. Among the parties that have benefited from this service are homeowners, schools, community centers, low income households, utilities, and local governments. Some of these entities received mini-grants of between $1,000 and $4,200 from CERTs for technical assistance to implement energy efficiency projects. These have been described and highlighted in case studies and are posted on the CERTs website, http://www.cleanenergyresourceteams.org/. (See *Attachment B* for details of the projects funded.)

Outreach in Energy Efficiency

Quarterly meetings held in each region often include presentations on energy efficiency topics such as sustainable design in architecture, Minnesota's Conservation Improvement Program, and energy efficiency incentives available to Minnesotans through government agencies and utilities.

CERTs successfully secured a Rebuild America grant from the Department of Energy to partner with the Minnesota Department of Commerce in hosting workshops focusing on recommissioning schools. The effort was well received by both school and local government building operators. Gene Scales, an engineer with over 30 years experience in the field of energy efficiency, led each workshop which also included short presentations from local utility representatives and local success stories. Turnout and participation were successful at all four workshops on October 3rd, 4th, 10th and 11th, 2006 in four of the six CERTs regions. More than one hundred people attended the workshops, including Buildings and Grounds Directors, a District Conservationist, Courthouse Building Operators, School Business Managers, CERTs team members, local utility representatives, private energy consultants, Maintenance Heads, School Electricians and Superintendents. In additional to professional expertise, these workshops provided a comfortable forum for participants to share useful energy-saving techniques and exchange ideas and concerns about energy and operational issues. Networking and conversation extended well past the end-time of the workshops. Participants received a binder with a packet of the presentation slides and were offered other handouts from Rebuild America, Energy Star, the State Energy Office and CERTs.

CERTs and the Minnesota Department of Commerce co-hosted three more in May 2007 targeting recommissioning of schools and other public facilities. Ninety-six building operators, school officials, building managers and others turned out in Staples, Willmar, and Mankato to hear about Elk River Schools' energy efficiency efforts. Ron Brattlie presented on the hundreds of thousands of dollars of savings the Elk River School District achieved through energy improvements. The workshops were sponsored by utility companies including Great River Energy, Minnesota Power, Otter Tail Power Co., Xcel Energy and BENCO Electric.

In addition to workshops, conferences, and special projects CERTs generally promotes energy efficiency resources including the *Home Energy Saver* on-line tool that models the most effective energy efficiency measures based on geographic location (http://hes.lbl.gov/), "*Change a Light, Change the World*", the Center for Energy and the Environment's *Minnesota Energy Challenge*, and *Monthly Home Smart* energy tips among its participants.

Collaboration

Connecting people with resources in the state such as the State Energy Information Office, Community Action Agency personnel, and B3 Benchmarking tools are some examples of how CERTs strengthens and encourages community efforts in accomplishing energy efficiency projects. Collaboration among team members interested in pursuing information on ground source heat pumps, connecting entities with utilities on energy efficiency incentives, and helping schools find the resources to accomplish energy savings goals are all part of CERTs' undertaking. More than ten guided tours of energy efficient building designs gave participants the chance to see energy efficiency projects close up.

CERTs met with various parties to discuss opportunities to partner around energy efficiency lighting programs. The White Earth Land Recovery Project in the Northwest region was one

of the recipients of a CERTs mini-grant to implement energy efficiency lighting and education on a reservation. The project focused on the homes of Elders in the White Earth Reservation and replaced 200 light bulbs and offered energy efficiency education to these households. Beyond this effort John Shimek, who carried out this endeavor, approached the utilities serving the reservation and worked with four of them to send out information on energy efficiency incentives to all consumers. This resulted in approximately 80 installed weatherization kits according to just one of the four utilities that participated.

In response to media coverage highlighting the difficulty senior centers face in covering energy costs, the Southwest Team collaborated with the Retired Engineers Technical Assistance Program (RETAP) to perform energy audits at three senior centers. The project was initiated with the assistance of the Minnesota River Area Agency on Aging (MNRAAA) to identify interested senior centers, and Southwest CERTs received 10 responses indicating interest.

RETAP followed up with the centers, and found that while their service was desired, there was a need to spend some time establishing trust with the decision makers in order to gain their confidence. Also, in some cases there was some concern about what implications the audits would bring in terms of financial or legal responsibility.

In the end, RETAP successfully completed energy audits at two of the centers. Based on the information provided by the RETAP audits, CERTs will assist these centers with finding resources to implement recommended energy improvements which will focus on correcting drafty windows, high electric bills, inefficient control of electric baseboard heat and inefficient lighting for one center. The second center received recommendations for improved controls for baseboard heating, changing out lighting, adding insulation to the attic, and seeking a utility credit on their central cooling system. The goal is that these two participants will have a positive experience that can be translated to additional energy audits and energy savings at other senior centers.

Lessons Learned

In thinking about some of the lessons learned in this phase of CERTs, it seems clear that there are a couple of challenges that may be universal under any plan to promote widespread implementation of energy efficiency technologies:

- *Connecting to the right resources for technical and financial assistance.* Sometimes it can be difficult to identify with whom to speak regarding interest in implementing energy improvements in both the private and public sectors. For instance, reaching the right utility contact can be hard, especially in larger companies where duties overlap or there is a lack of knowledge about who handles what. The same can be said of some state agencies and county governments where corresponding duties may not yet be defined. CERTs has helped people navigate these systems, but it is a real cost in terms of volunteer and staff time.
- *Trust is important in working on energy related projects.* People generally recognize that energy efficiency provides a real societal benefit, but they need a sense of trust in their contractors and energy auditors prior to taking action. In many cases, local connections are highly valued and foster trust more readily than outside expertise. CERTs volunteers work to build bridges that foster trust.

The above are examples of some of the challenges CERTs observed in the course of carrying out its mission and are shared here so that they may be helpful to others in structuring community-based energy strategies. These hurdles are not insurmountable but require time and diligence.

Clean Energy Resource Teams

Result 2: Renewable Energy Project Implementation

Description: Work Program Amended 12/31/2006

1. Implement renewable energy component of regional clean energy action plans developed in year one and two; identify one or more projects in each region to receive focused technical assistance/services, and bring focused technical assistance/services to that community and those projects.

   For the purposes of this workplan, we define technical assistance/services as connecting project participants with the necessary technical expertise and skills (e.g., engineering, educational, financing) to implement local renewable energy projects and achieve desired project outcomes. Projects can range from siting and design evaluation to cost-benefit/feasibility study project analysis.

   CERTs chose to deliver this technical assistance/services through regional competitive grant programs to encourage regional project development, ensure local commitment to project implementation, and develop regional networks, expertise, and infrastructure to implement not only these individual projects, but future regional projects as well.

   The act of writing a proposal can be a valuable tool in helping a community develop their project ideas and small amounts of funding can often leverage additional project funds.

   The process to issue these competitive grants consisted of the following:
   - A standard RFP was developed by CERT coordinators and edited and modified by regional steering committees (Attachment C). This included the criteria by which each project would be evaluated.
   - This RFP was then issued via regional CERT list serves, local press releases, and other regional and statewide list serves
   - All regional project proposals were then reviewed in detail by their respective CERT Steering Committee based on the outlined criteria. Once projects were scored, Steering Committees worked to assess how to best allocate their limited dollars.
   - Each CERT was invited to vote on dollars to award to projects based on recommendations from its Steering Committee.
   - Once teams selected projects for technical assistance/services, recipients were contacted by CERT Staff and asked to submit letters of intent with a specific timeline and project cost breakdown to the Minnesota Project. Minnesota Project then handled all of the necessary technical assistance/services contracting.

2. Match community projects with state incentive and financing programs as well as local sources of equity capital and local lenders. (See list of Projects in *Attachment B.*)

3. Document and disseminate approaches and models

Summary Budget Information for Result 2:	LCMR Budget	$110,898.00
	Revised Budget (8/1/06)	$79,192.24
	Revised Budget (7/3/07)	$110,407.43
	Balance	$1,000.00

Completion Date: June 30, 2007

Each CERT funded regional renewable energy technical assistance projects to further on-the-ground project development in amounts of between $1,000 and $4,200. (See *Attachment B*.) The projects that CERTs funded are completed and case studies have been developed and posted on the CERTs website. One of these renewable energy projects was the Rural Renewable Energy Alliance (RREAL) study of the energy savings potential of solar thermal in low-income homes. This effort resulted in new legislation during the 2007 regular session aimed at increasing renewable energy in low income housing.

Collaboration
Statewide, CERTs directed team members to technical resources and contractors for wind and solar systems, distributed up-to-date information about potential funding resources for renewable energy projects and supported in part the Agricultural Utilization Research Institute's (AURI) development of a community wind guide to provide technical assistance aimed at locally-owned utility-scale wind projects. It is available on the Windustry website as of June 2007. CERTs hosted conferences, presented at public and private forums, served on planning committees, and promoted relationships between the renewable energy industry and the Department of Employment and Economic Development and the Department of Commerce.

In the area of renewable fuels, CERTs hosted a cellulosic ethanol and butanol forum with over 40 attendees, toured the Minnesota Center for Automotive Research at Minnesota State University-Mankato and discussed their research on plug-in hybrid technology and the use of ethanol in hybrids, and participated in surveys of county governments to track higher blend biodiesel usage. (The Southwest CERT has been conducting this survey annually since before the 2% biodiesel fuel mandate.) Past surveys helped address questions on biodiesel's effect on warranties. The most recent survey answered concerns regarding microbial growth in biodiesel and preventative measures.

An upcoming project that CERTs is supporting is the Community-Based Energy Development (C-BED) analysis that will look at opportunities for broad dispersed wind and other renewable energy development across the state. C-BED renewable energy projects are well aligned to the CERTs mission as they are accomplished through community collaboration and offer strong economic and other local benefits that serve the area in which they are developed. Public presentations and comments are being taken in each of the CERTs regions in September 2007. Ninety people attended the first public hearing in Morris.

One CERTs highlight was the favorable response to the first ever Eco Experience Biofuels Exhibit at the 2006 Minnesota State Fair. This effort allowed CERTs to engage a wide and diverse audience that few other venues could match with tens of thousands of people

experiencing the exhibit which educated people about the value of biodiesel and E85. CERT staff will volunteer time at the new biofuels State Fair exhibit in 2007 as well.

Meetings and Tours

Approximately 50 quarterly team meetings were held that regularly focused on renewable energy technologies such as solar photovoltaics, small wind, solar thermal, bioenergy, cellulosic ethanol, and waste to energy. In addition to regular meetings, workshops were held on wind energy development in at least four of the CERTs regions and tours of a dozen or more residences and buildings that utilize solar and wind power technologies took place. A model wind ordinance and companion guide was completed to assist local policymakers and small wind advocates in designing policies for their jurisdictions. After the history making 2007 legislative session that changed energy policy in Minnesota, this guide was reviewed by CERTs to ensure it remains both accurate and current.

Team Efforts

The Central Team was quite active in the area of renewable energy receiving several proposals for renewable energy projects including solar thermal, solar electric, wind, biodiesel, and geothermal systems. In all, four CERTs mini-grants were issued to projects in this region including the RREAL solar thermal study mentioned above and Azariah Acres Farm's geothermal assessment which lead to a geothermal system installation in spring 2007 used to heat drinking water for livestock.

The West Central Team regularly draws over a hundred people to its meetings with focus topics such as wind project development, cellulosic ethanol and renewable energy incentives/funding programs. This active Team also facilitated tours that highlighted geothermal energy, energy efficiency, and community wind production.

The Northwest Team worked closely with two University resources in their region. The team collaborated with the University of Minnesota Crookston campus on wind and biomass projects by providing technical assistance for a biomass fuel-shed analysis of Crookston. The project has outside funding and CERTs continues to offer technical assistance. The Team is also working with the campus on a wind resource assessment to be used to evaluate the feasibility of a UMC wind project. A meeting on the Crookston campus that centered on wind project development drew 50 attendees. Bemidji State University was a recipient of a CERT mini-grant that supported a professor/student team's effort to evaluate the HVAC system in Sattgast Hall. Their work resulted in a report of potential energy savings delivered to the administration and a plan to upgrade the system in Fall 2008. Additionally, mobile gasification testing for ten different agricultural and forestry biomass fuels is moving forward in the Northwest region.

The Southwest Team has worked with Home Farms, Inc. who announced a Redwood Falls Municipal solid waste gasification project. Southwest CERT continues to serve as a connector for this project and facilitated broader networking as well. In another renewable energy effort, the Southwest CERT coordinator used a MnDOT planning grant awarded to the Southwest Regional Development Coalition for transportation planning and has promoted a freight study with a focus on renewable energy in District 7. The freight study is nearing completion and can be found at http://www.dot.state.mn.us/planning/d7/resources.html. The AURI partnership was formed in the Southwest region as well.

The Northeast Team had a special focus on renewable energy in schools. The team hosted two meetings at Harbor City International School to provide focused technical assistance on potential renewable energy projects and to discuss small wind energy technologies. One meeting centered on how to move small wind projects forward, and a visit to Proctor Public School's new 20 kW wind turbine--a project that was implemented with assistance from the Northeast CERT. The team also engaged several new schools in analyzing the possibility for integrating various types of renewable energy systems. The Team also assisted North Shore Community School with securing funding for a 2.67 kW new solar electric system—one of only five installed in schools statewide.

Lessons Learned

When considering lessons learned in the first phase of CERTs, it seems clear that there are a few persistent challenges that may be universal to implementing renewable energy technologies:

- *Availability of funds*. This is an issue for both the private and public sectors. While there is more attention and money being targeted at energy improvements for environmental benefits and as a way of controlling energy costs, there is always a demand for more. CERTs stretch financial resources by showing teams where to seek available funding and by engaging in and encouraging successful partnerships with others.
- *Layers of decision making.* Once a decision has been made to do a community-based energy project there is a need to convince a host of others that the project should be done. Management, boards of directors, utilities, legal consultants, business partners, banks, and all levels of government are all examples of entities that may need to approve the project in order to move forward. If a leader does not emerge who is committed to identifying and working with the appropriate decision makers, the project is at risk of stalling.
- *Inexperience of community partners when compared to traditional developers.* The typical community leader who takes on the responsibility of a project is often inexperienced and has limited personal resources to devote to the project's development. This leader must identify resources often with little or no money to spend for consulting with a professional. CERTs is a resource for these community leaders often providing the technical assistance needed to move a project forward.

Having a willing leader step forward and persistently address these issues appears to be a key requirement for getting renewable projects done on a community level. Often people are surprised and discouraged by the amount of effort and the timeline to see a renewable energy project to completion. CERTs helps work through the barriers by connecting people to the right resources and facilitating dialogue.

Clean Energy Resource Teams

Result 3: Education, Dissemination, & Replication Models

Description:

1. Develop education materials such as case studies, fact sheets, and newsletters

2. Disseminate education materials developed by CERTS regional teams to communities around the state via web presence, listserves, and State Energy Office, building knowledge across regions, statewide, and beyond the CERTs participants.

3. Disseminate information, project successes and models developed across regions and institutions via at least one workshop in each region and one statewide workshop.

4. Make recommendations for improvements and determine future directions of program. Develop continuation and expansion plan for CERTs as a self-sustaining citizen-based planning and implementation toolbox.

Summary Budget Information for Result 3:		
	LCMR Budget	$90,572.00
	Revised Budget (8/1/06)	$49,861.36
	Revised Budget (7/3/07)	$91,891.41
	Balance	**($**902.00)

Reaching Out

After three and half years, new stakeholders continue to join Clean Energy Resources Teams and become engaged in energy activities on a regional scale. Frequent workshops and quarterly team meetings foster networking, information sharing, and education. The monthly newsletter is distributed to over 1,100 stakeholders across the state. This update communicates energy related news, directs subscribers to relevant resources, identifies financial opportunities in clean energy technologies, and illustrates potential replication models.

Dozens of tours, 20 or more forums, numerous workshops, and at least 30 presentations to outside groups helped to carry the CERTs message. Additionally, events such as FarmFest, Windy River Energy Fair, The Youth Energy Summit, the Energy Design Conference, and the Lake Superior Renewable Energy Fair are some of the events that CERTs assisted or co-hosted in the two years covering the LCMR grant period.

CERTs efforts have intersected with 20+ utilities, 10 or more colleges, numerous K-12 schools, the state's six environmental learning centers, and nearly all of the state's 87 counties. CERTs has close ties with many non-profit organizations as well such as the Center for Energy and Environment. Additionally, CERTs has worked closely with the State Energy Office and other state agencies such as the Minnesota Department of Transportation, Pollution Control Agency, and the Department of Natural Resources to strengthen and collaborate on clean energy efforts.

Projects

The teams all identified and worked toward their energy priorities. The resulting CERTs regional energy plans from the first funding cycle were distributed on CD-rom, through libraries, economic development, local government, website, e-mail, meetings, events, mail to members, and newsletter. In 2006, an RFP was issued for mini-grants for technical assistance to a limited number of projects in each region. (See *Attachment C*.) CERTs received 20 quality proposals in response. Of those, CERTs were able to partially fund 17 as described in *Attachment B.* These grants supported model community-based projects that can be replicated throughout Minnesota.

Statewide Conference

The Clean Energy Resource Teams statewide conference, Local Energy / Local Opportunities, was held January 16-17, 2007 and brought over 400 people together in Saint Cloud. (See conference agenda, *Attachment E*.) Twenty CERT representatives served on the planning committee. Participants represented people from a variety of backgrounds – local governments, schools, universities, business people, farmers, members of environmental groups, retirees, and more. Highlights of the conference included keynote speakers Alexis Karolides from Rocky Mountain Institute and local TV anchor, WCCO's Don Shelby. Fifteen different breakout sessions on a wide variety of energy topics were followed by a legislative forum hosted by Minnesota Public Radio's Kerri Miller. Participants gave high marks to the conference overall and to each of the speakers and breakout sessions. The event was widely reported in Minnesota newspapers, radio, and even showed up on several Internet blogs.

The first day of the conference featured "In-Depth Energy Workshops" with 150 people attending each one of four workshops on topics such as *Community-Based Energy Development, Communicating Effectively about our Energy Problems, Community Energy Efficiency--Meeting the Challenge,* and *Harnessing the Power of Higher Education to Support Energy Projects*. Participants were surveyed and responded positively about the workshops in general and indicated a high level of satisfaction with the knowledge of the presenters and the usefulness of the information.

The second day of the conference began with keynote speakers in the morning and fifteen break-out sessions throughout the day with themes such as *Clean Energy Community-wide, Community Institutions, Do it Yourself at Home and on the Farm, Biofuels and Biomass,* and *Business and Financing*. Fifty speakers, three to four per workshop, spoke from personal experience on topics from *Biomass Heating Alternatives* to *How to Start a CERT in your Community* to *Commercializing New Technology* and more.

The conference provided Minnesotans with information on how to get renewable energy and energy efficiency projects up and running in their communities by connecting participants with technical assistance providers and others involved in the development of successful, replicable projects. The focus was on specific strategies for community institutions, including schools, businesses, and local governments to control energy costs and address pollution concerns with energy efficiency technologies and renewable energy projects such as wind, solar and biomass.

An exhibit hall, featuring 34 exhibits from utility companies, renewable energy groups, and government agencies among others provided an arena for attendees to connect on projects and issues of importance to them.

Media

With 15,681 unique visitors in the last 6 months of the grant, the CERTs website (http://www.cleanenergyresourceteams.org/) has become a resource for not only active CERT participants, but also for Minnesotans interested in taking action or learning more about energy. Currently there are 72 case studies posted on the CERTs website and 54 presentations from CERTs energy workshops and forums. Energy efficiency topics covered on the website include financing, schools, transportation, co-generation, and transmission. Renewable technologies such as biogas digesters, biomass energy, hydroelectricity, hydrogen fuel cells, solar, and wind are addressed on the website as well. Another popular resource on

the website is the Frequently Asked Questions section that covers biofuels, biogas, biomass, efficiency and conservation, geothermal, solar and wind. Additionally, the Southeast Team developed their own CERT website at http://www.certs-se.org/. This site outlines 23 clean energy projects in the southeast region, financial resources, and area events.

The documentary "New Energy: A Fresh Look at How the Midwest is Creating a Green Energy Economy" debuted January 7, 2007 on PBS. CERTs spawned the concept behind this production by funding its precursor showcasing some energy efficiency and renewable energy projects in the Central Region. The precursor aired on public television several times during April 2006. People interested in seeing the two-part CERT film can do so by contacting Joel Haskard of CERTs at haska004@umn.edu or (612)625-8759.

In a fun and creative undertaking, CERTs partnered with a College of Design class at the University of Minnesota to create 1,400 silk-screen posters for dissemination statewide. These works of art promote various messages related to clean energy like wind, solar, and efficiency.

Measuring Effectiveness

CERTs worked closely with University of St. Thomas Political Science professors, Steve Hoffman and Angela High-Pippert, to conduct a comprehensive CERT Evaluation. The first part of the evaluation consisted of an on-line survey open to all team members. The second part of the evaluation targeted focus groups with core team members (generally 6-10) in each region. Evaluation results are available as *Attachment D* and may provide useful information to others interested in replicating the CERTs model. Overall 95% of the respondents were satisfied with the program with one volunteer stating, "CERTs is a great example of what can happen when the 'grass roots' take action. The direction is good, the goals are admirable…" This is a common sentiment among CERTs participants and the core of what the CERTs mission is all about.

V. Total LCMR Project Budget: CERTs

All Results: Personnel:	$236,586
All Results: Equipment:	$
All Results: Development:	$
All Results: Acquisition:	$
All Results: Other: (professional/technical/demonstration projects and mini-grants)	$25,120
All Results: Other (website):	$9,455
All Results: Other (travel):	$5,368
All Results: Other (conference):	$5,244
All Results: Other (printing):	$3,227
All Results: Other (grants):	$15,000
TOTAL LCMR PROJECT BUDGET:	**$300,000**

VI. OTHER FUNDS & PARTNERS:

A. Project Partners:

1. CERTs
   a) Minnesota Project: Lola Schoenrich, Kris Weber, & Intern ($123,819)

b) University of Minnesota Regional Sustainable Development Partnerships: Melissa Pawlisch & Joel Haskard ($176,181)

2. Community Wind Rebates and Financial Assistance—See Work Program B
   a) Community Project A ($200,000)
   b) Community Project B ($200,000)

B. Other Funds being Spent during the Project Period:

1. CERTs
   a) Minnesota Project
      - Blandin Foundation (~$12,000)
      - Minnesota Department of Commerce (US DOE Rebuild America) – ($24,000)
   b) University of Minnesota Regional Sustainable Development Partnerships
      - Blandin Foundation (~$12,000)
      - Minnesota Department of Commerce (USDOE) (~$15,000)
      - University of Minnesota Initiative for Renewable Energy and the Environment (~$20,000)

C. Required Match (if applicable):

D. Past Spending:

CERTs:

a) MN Project
   - Legislative Commission on Minnesota Resources ($64,000)
   - Blandin Foundation (~$12,000)
   - Carolyn Foundation ($45,000)
   - Minnesota Department of Commerce (USDOE) ($33,400)
   - Conference Sponsors ($7,900)

b) UMN
   - Legislative Commission on Minnesota Resources ($155,000)
   - Blandin Foundation (~$25,000)
   - Minnesota Department of Commerce (USDOE) (~$15,000)
   - Blandin Foundation (~$12,000)
   - University of Minnesota Initiative for Renewable Energy and the Environment (~$5,000)

c) Others
   - Minnesota Department of Commerce (USDOE) ($89,000)
   - Blandin Foundation ($19,047)

E. Time:

VII. DISSEMINATION:

1. CERTs:
   Stakeholder meetings, conference, website (www.cleanenergyresourceteams.org), listserv, newsletters

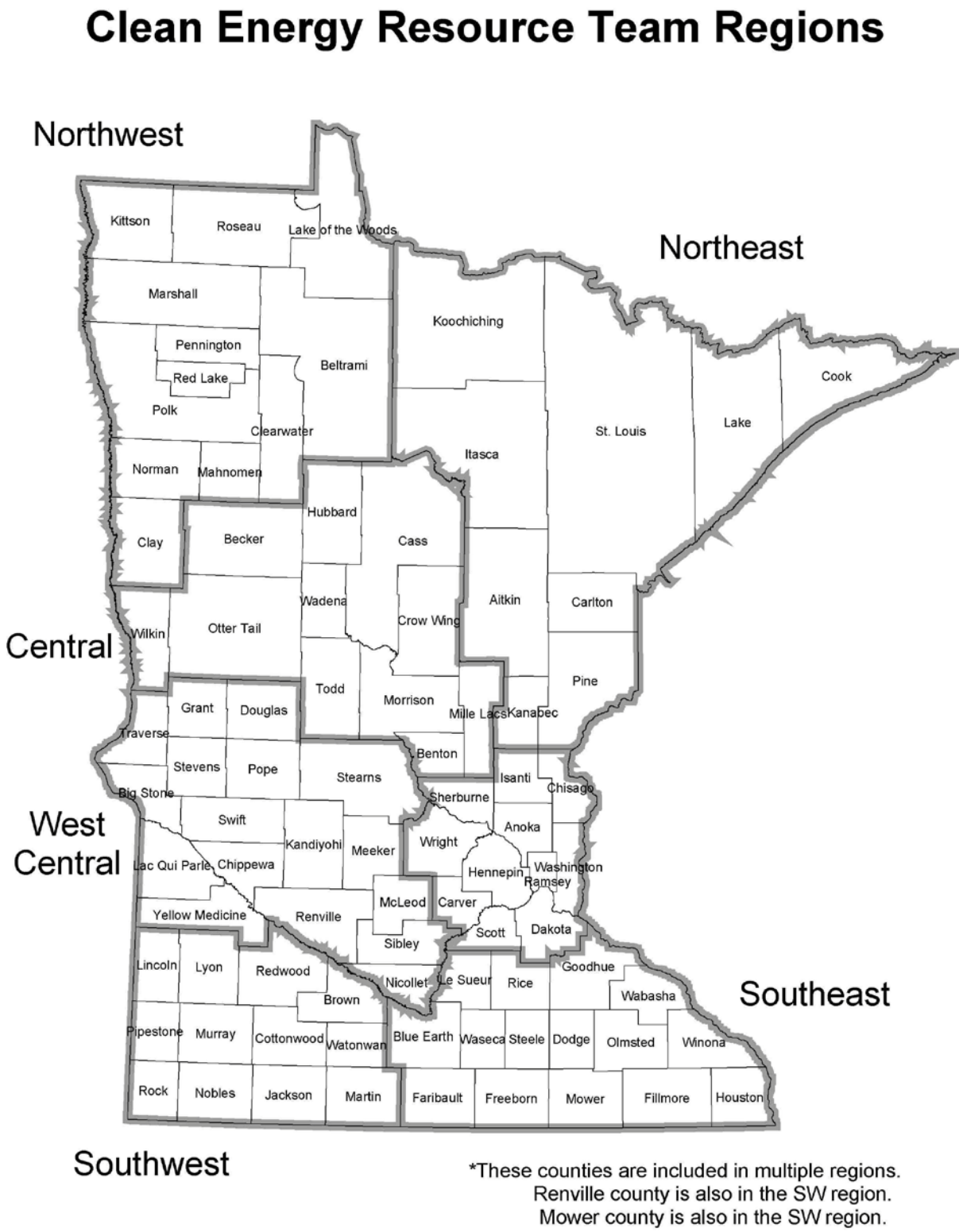
VIII. REPORTING REQUIREMENTS:

Work program progress reports will be submitted no later than January 15 & July 15, 2006 and January 15 & August 1, 2007 for the Clean Energy Resource Teams (Parts I, II, & III).

IX. RESEARCH PROJECTS: n/a

Appendix A

Map 1: Clean Energy Resource Team Regions



Attachment B

Clean Energy Resource Team Mini-Grant Summary Information

Name, Short Description, Dollar Amount, Anticipated Completion Date

November 14, 2006

Updated February 4, 2007

and July 11, 2007

Central Region

Region Priority: Encouraging building and community energy efficiency, supporting solar thermal heating in low-income housing and researching and implementing biomass applications.

- The Rural Renewable Energy Alliance (RREAL): Project to conduct a cost/benefit analysis of using solar heating systems as a more efficient heating system (including their efficiency kit) and as an alternative energy resource in low-income households. Using life cycle cost analysis, which includes capital, maintenance, operating, social, replacement and salvage costs, the costs and benefits of the two approaches, will be compared. Results will provide technical assistance to both the RREAL project as it will inform their program development and to others considering adding solar heating systems.

  Outcome:

  The Cost Benefit Analysis was produced successfully for RREAL's solar air heat collectors and their use in LIHEAP (Low Income Home Energy Assistance Program) homes. They first determined the amount of heat generated by the system per month and what the heat needs and their costs are for a LIHEAP-eligible family in Minnesota. Using this information, they employed Full Cost Accounting to compare the cost savings of Solar Air Heat over the four most commonly used heat fuel types in Minnesota: natural gas, fuel oil, LPG, and resistance electricity. Using this information they determined that Solar Air Heat systems will pay for themselves with fuel savings in 13 to 29 years, depending on the fuel type displaced. When comparing these savings to other home investments for fuel cost savings, it was determined that Solar Assistance would be an excellent investment of LIHEAP dollars. This information will inform the future work of RREAL and provide technical assistance to other groups around the state interested in solar thermal.

  ⇒ $1,500 LCMR

  ⇒ Project completed March 27, 2007

- Park Rapids School District #309,Wind Energy and Community Education: Project to conduct an integrated wind study and develop a plan to install a turbine at K-8 Century School. Teachers across the district will be able to incorporate wind energy into their science curriculum and school projects.

  Outcome:

  The team has raised half of the necessary money to install a 20 kW turbine by Jacobs. The educational opportunity of the system is seen as being as valuable as the electricity it offsets.

The most difficult challenge for the project has been securing funds. The district has no money to put toward the project so the $65,000 must be raised separately. Thus far, the effort relies on grants and local businesses to raise money. Others interested in duplicating this effort should work closely with a group familiar with renewable energy financing and fund raising like the Center for Sustainable Community Development, whom we are working with. Local residents have enthusiasm and interest to contribute, but not always the know-how so professional guidance is helpful.

Equipment malfunctions caused a loss of six weeks worth of data. Obtaining data more frequently would prevent setbacks like this and identify when there is a malfunction.

As of June 2007, the school was conducting a competitive bid process for the installation. The goal is to have the system completed by winter 2007.

⇒ $1,000 LCMR and Blandin Foundation
⇒ Study completed June 2007

- Winkelman's Environmentally Responsible Construction: Project to install used fryer oil infrastructure for use as biofuels in diesel vehicles and generators.

  Outcome:

  This project allowed for the establishment of infrastructure to offer consumers in Central Minnesota an alternative to diesel fuel. Used Fryer Oil (UFO) can be used as a diesel substitute for vehicles. The result is lower emissions of sulfur dioxide and particulate matter, lower fuel cost, and lower net carbon emissions. UFO is for use in a converted vehicle and includes an auxiliary tank and filtering system that is installed in a diesel vehicle. The converted vehicle relies on fuel from the standard tank to start and to operate until the auxiliary tank reaches temperature sufficient to liquefy the UFO.

  ⇒ $1,000 LCMR/Blandin Foundation
  ⇒ Project completed June 2007

- Azariah Acres Farm: Project to determine the feasibility of using geothermal systems to heat drinking water for livestock and to then, if feasible, install a system. This project will provide technical assistance to the overall CERT project because the final product will include the cost benefit analysis, a written methodology and a case study of the final project that other farmers can use to evaluate similar installations.

  Outcome:

  A direct heat exchange piping was determined to be the best choice. Sue chose PEX tubing because it is the most durable and can withstand being below and above ground in sub-zero temperatures. There was a back-order and the tubing did not arrive in time to be installed in the fall, and was instead installed in spring of 2007. A 75 gallon covered insulated stock tank with a 1'x 2' opening for the animals was used. The piping was run underground just north of the livestock barn to the heat exchange piping buried 8' below the surface of the ground.

  This project will be a technical assistance resource to other farmers in the region and state. Next steps include preparing a permanent laminated sign to post near the geothermal system and gathering data over the next winter on air and

water temperatures to determine the overall efficiency of the system. This data will be presented as a 4H project at the Morrison County Fair. A field day in the fall will educate people on the geothermal system's success.

If her project works, she sees it as an opportunity for others who raise livestock to free up a good amount of capital. In the end, the total project cost was $1,500 on the project (not including her labor), $500 of which came from CERTs.

⇒ $500 LCMR

⇒ Project completed June 30, 2007

Northeast

Region Priority: Installing and promoting energy efficiency, solar and wind projects in communities and at K-12 schools.

- University of Minnesota, Duluth: Project to provide technical assistance to up to 5 community and school partners in conducting economic feasibility analyses of their individual wind resource. The project consists of three primary activities, which will be undertaken mainly by the U of MN Duluth's Center for Sustainable Community Development (CSCD). The first two, wind monitoring and GIS mapping, will be funded by the MN DNR. The third, economic feasibility analysis for each community partner, is the portion that will be covered with CERTs funding.

  Outcome:

  The University of Minnesota Duluth provided technical assistance to seven communities interested in wind development by assisting with wind monitoring. To monitor the wind, eight anemometers with data loggers attached were mounted at sites along Minnesota's North Shore: CSCD installed at Enger Tower, Clover Valley Fire Tower, Finland Fire Tower, the Hovland Fire Tower, and Two Harbors; Duane Ege installed at Lutsen Mountain and Grand Marais; and the Grand Portage Reservation installed at Grand Portage.

  Data loggers were read several times in the last few months so that maps and feasibility analyses could be produced. This has so far been possible at Finland, Lutsen, and Grand Portage, where two months of initial data has been modeled. With additional data collection, more detailed reports can be produced for each site, which can then be used to determine the best sites for turbine installation. The project will continue beyond the end of the LCMR funding.

  ⇒ $2000 total: $1000 LCMR, $1000 Blandin Foundation

  ⇒ Project completed May 1, 2007

- North Shore Community School: Project for technical assistance from the Hartley Nature Center to NSCS for a student led energy audit of the school and development of a school energy improvement project including display materials and curriculum development to understand energy use and encourage no cost/low cost actions by students and staff (such as turning off lights, computers, and other equipment. Other schools have found that these measures can save as much as 10%.) Materials developed will be available to others through the CERT web page.

  Outcome:

This project provided technical assistance to the North Shore Community School and they, in turn, will provide assistance to other schools as they disseminate the results of the project. The energy education project had two main parts. The first part, called *Green Transportation & Solar Sprint. E*nergy expert Mark Horlocker, of Hartley Nature Center, assisted teachers and students with a solar model car project and learning about the motion of objects. For the science standards portion, Mark assisted with topics such as energy and natural systems, refinements to cars (velocity and acceleration), Newton's laws and mechanical advantage.

The second part of the project was an elective class where students performed a school energy audit. Students had access to energy audit materials in the school library which could be checked-out to use on their own homes as well as at the school.

The final student component was creating a display for the North Shore Community Center outlining the results of the energy education and the energy audit.

⇒ $1,760 total: $1,000 LCMR, $760 Blandin Foundation
⇒ Project completed June 22, 2007

Hartley Nature Center: Project for clean energy outreach initiatives.

Outcome:

This project created lesson plans for one core class and one enrichment class. There were also energy camps hosted during the summer of 2007 at the Center. *E*nergy expert Mark Horlocker, of Hartley Nature Center, assisted teachers and students with a solar model car project and learning about the motion of objects. For the science standards portion, Mark assisted with topics such as energy and natural systems, refinements to cars (velocity and acceleration), Newton's laws and mechanical advantage.

There were 330 participants who received energy programming in connection with UMD, Lake Superior College, Fon du Lac Community College.

We also collaborated with Wolf Ridge Environmental Learning Center to develop energy related web material

⇒ $1,440 LCMR, $10,000 Minnesota Power, $8,000 Weesner Foundation
⇒ Project completed June 22, 2007

Northwest

Region Priority: Energy efficiency and ground source heat pumps, value added agriculture, and community-owned wind.

- Bemidji State University: Project to evaluate the existing HVAC system @ Sattgast Hall and identify a cost effective, energy efficient alternative. The study is expected to lead to a suggested design offering energy savings of 60 – 80% for building ventilation, while enhancing the comfort and work performance of building occupants. The work will be done by a physics professor and at least 2 undergraduate students. The project will provide technical assistance to BSU and the final report and a case study will make the results available to others.

Outcome:

David and his students provided technical assistance to BSU with the study of HVAC options. They concluded that the advantages to making changes are numerous. An effective HVAC system would ventilate the rooms at level needed and many blowers could be turned off when there was no occupancy and at night or by auto-pilot blowers. Occupant comfort would be enhanced with optimal air exchange (smart controls), resulting in a reduction of sleep-inducing rushing sounds from vents. All in all, a significant fraction of the energy currently being used in Sattgast Hall could be saved.

Outcomes of the project include a database that was created with cost comparisons for use by a planner, a final report to CERTs and most importantly, a plan to be delivered to the administration for moving forward—to be used by architects and engineers. The building and remodeling is planned to begin in Fall 2008.

⇒ $2600 total: $1000 LCMR, $1600 Blandin Foundation

⇒ Project completed June 30, 2007

- University of Minnesota, Crookston: Members of the Center for Sustainable Development (CSD) seek to "Capture the Power" of the wind near Crookston, MN and hope to install a 1.2 MW wind turbine by 2008. The technical assistance necessary to evaluate the project will include wind resource assessment, analysis of site location, measuring campus, community and utility attitudes toward wind, and using that information to develop a draft business plan that will form the basis for an external funding campaign. Much of the work will be done by several professors on campus who will engage students through relevant classes. For example, surveys and business planning will be done by a business marketing class. In addition, The EERC (Brad Stevens) will assist with developing a wind profile model, while an electrical engineering student or external consulting firm will be identified to assist with adapting microcontroller technology currently used to log temperature data over IP to cell technology. Jennifer Waltz from Moorhead Public Service's "Capture the Wind" project will be consulted at various stages. The project will provide technical assistance to UMN Crookston and the final report and a case study will make the results available to others through the CERT web page.

  ⇒ $6400 total: $1000 LCMR, $1600 Blandin Foundation, $855 NW Partnership, $2945 IREE

  ⇒ This project was not completed and no LCMR funds were spent on this project.

- Three Rivers Resource Conservation: Project to assess community knowledge about ethanol and to increase awareness among at least 400 residents. The group co-hosted events to promote the use of ethanol in Region 9 and partnered with radio, auto dealers, colleges, counties, and agricultural groups (24 +)to promote biofuels in the area.

  Outcome:

  Three Rivers Resource Conservation and Development worked with local partners to host a biofuels educational event in Mankato, the *Ethanol and Biodiesel Expo: Takin' it to the Streets*. Over 300 people attended the event at

Snell Motors. Opportunities to tour an ethanol pant were available to participants and transportation was provided.

A survey was completed by participants that demonstrated that the event was effective in increasing attendees' knowledge of biofuels, flex fuel vehicles, and renewable fuels and that the biggest barrier to use of E85 is lack of Flex Fuel vehicles. This information can be used to increase market penetration of new vehicles by dealerships in the area. Other outreach efforts included fueling stations.

⇒ $1,200 Blandin Foundation
⇒ Project completed December 2006.

- White Earth Land Recovery Project: Project to replace light bulbs with energy efficient lighting in the homes of White Earth Elders who are part of the Mion-Miijim program of the White Earth Land Recovery Project (WELRP). This project was also to provide energy information to the elders and their families.
  Outcome:
  Two hundred CFL bulbs replaced 120 60-watt incandescent and 80 100-watt incandescent bulbs. As John Shimek, Energy Coordinator for WELRP, worked replacing the bulbs, he offered instruction about energy saving tips and money saving strategies related to energy efficiency.

  Mr. Shimek then approached the utilities serving the area and asked that Conservation Improvement Program funds be advertised to the residents of the White Earth Reservation. Itasca-Mantrap utilities offered Weatherization kits, Ottertail Power offered energy audits, Clearwater-Polk offered a $3 rebate for energy efficient lighting, and Wild Rice offered a $2 rebate per CFL. Letters from the utilities were sent to their customers and Itasca–Mantrap Power reported that approximately 80 weatherization kits were installed on homes including window kits, caulking, and pipe wrapping as a result.
  ⇒ $1,500 LCMR
  ⇒ Project completed June 2007

Southeast

Region Priority: Supporting energy efficiency, coordinating community outreach and education and spearheading distributed generation opportunities such as solar and wind.

- Dream Acres Farm: Project to design and install a solar power system to operate the first renewable energy/energy efficient certified kitchen in Minnesota. LCMR funds are being used for engineering and design assistance. The project will provide technical assistance to Dream Acres Farm and the final report and a case study will make the results available to others interested in similar installations.
  Outcome:
  This project provided technical assistance to Dream Acres Farm in their solar project and the project itself will be a resource to others interested in similar initiatives. Todd Juzwiak and Eva Barr achieved success by receiving approval

and certification through the Minnesota Department of Health and the Minnesota Department of Labor and Industry for their renewable energy/energy efficient commercial kitchen. The public, farm visitors, and CSA members are already aware of the project and its future benefits. The number will continue to grow as their farm activities continue to expand.

As they see it, the impacts of the kitchen will be threefold. 1) Economic: The kitchen will spark interest and the development of local goods with local production and local consumption resulting in a true local economy. 2) Environmental: Entirely renewable energy and energy efficiency systems. 3) Social: A community gathering point, open and accessible to all, to celebrate the merging of food, farm, and alternative technologies.

The kitchen will also serve an educational resource that will both teach visitors about renewable energy and energy efficiency in the kitchen and support the farm's many educational programs. These programs include their Annual Fall Open House, Flourish Summer Camp for youth, and Tillers International Workshops. Signage and tutorials will teach users about the various technologies and practices used in the kitchen.

⇒ $3000 total: $2000 Blandin, $1000 LCMR (for technical design assistance)

⇒ Project completed June 30, 2007

- Winona County Environmental Services: Project to develop a county-wide energy efficiency initiative. The initiative is still under development, but is likely to focus on reducing energy use in county owned buildings and facilities. The County Board is in the process of further defining the scope of work and anticipates hiring a consultant to assist with program development with the LCMR funds. The project will provide technical assistance to Winona County and a final case study will make the results available to other local governments interested in similar initiatives.

  Outcome:

  Sustain Winona was able to complete the student survey project without LCMR funds. Staff and a team of twenty students from Winona Senior High School successfully surveyed a cross-section of Winona residents on their energy consumption, transportation, and recycling practices and concerns. The survey results were quite positive: over half of those interviewed use compact fluorescent light bulbs in their homes, 86 percent recycle, and many people were concerned about transportation. Also, when asked if we should be investing in renewable energy, the answer was unanimously *yes.*

  Each community member interviewed received a free compact fluorescent light bulb. These bulbs were originally one of the main expenses for the project, but they were generously donated by Xcel Energy. Furthermore, the County of Winona provided consumables and supervisory staff for the project, also at no charge.

  Because of these donations, the Sustain Winona was able to take their project one step further by using the grant to hire a consultant to provide technical assistance to the group to identify target areas where Sustain Winona and the larger Winona community could best concentrate future efforts. The survey results and the summary will be especially valuable in helping the community institutions as they move toward a comprehensive county-wide sustainability initiative in the summer and fall of 2007.

⇒ $1000 LCMR
⇒ Project completed June 30, 2007

West Central

Region Priority: Supporting energy efficiency at homes and in community facilities. Researching community-scale anaerobic digesters and facilitating tours that highlight geothermal energy, energy efficiency, and community wind production.

- Kerkoven, Murdock and Sunburg School District: Project to investigate the possibility of improving energy efficiency and utilizing locally produced renewable energy at the Murdock Elementary School. A final case study will make the project results available to other schools interested in similar initiatives.

  Outcome:

  This project provided technical assistance to the Murdock and Sudberg school district to identify energy efficiency opportunities in the school buildings. With the funding, Stan Simon did an energy analysis for the Murdock school building, looking at ways to improve the building energy usage—through better insulation, better ventilation systems, and possibly a different kind of heating system (other than the existing steam boiler running fuel oil)

  At the end of his research, he presented a list of different options and an analysis of which are most economical for the school district. The heating and ventilation options were created to give the school a framework to think about their energy situation.

  ⇒ $3,800 total: $2,000 LCMR, $1,800 Blandin Foundation. In addition, Otter Tail Power Company has estimated a contribution of $3750 to go towards the study and design of energy saving / cost reducing improvements.
  ⇒ Project completed June 30, 2007

Southwest

- AURI: Joint project with the Southwest CERT that will be useful to develop a statewide wind development guide to assist people interested in developing locally-owned utility-scale wind projects.

  Outcome:

  The handbook identifies issues to consider and potential pitfalls to avoid in the development of community wind projects. The handbook will be a technical resource for community groups as they begin to plan community wind projects. Wind development guide was produced by Windustry, chosen after a request for proposal process. The work was guided by an advisory committee including members from AURI, Southwest Regional Development Commission, the Minnesota Project, and others.

  ⇒ $70,000 total: $2,500 LCMR, $40,000 Center for Producer Owned Energy at AURI, $10,000 Southwest Minnesota Foundation, $10,000 Minnesota Corn Growers, $5,000 Windustry, $2,500 Southwest Regional Development Commission.
  ⇒ Project completed June 30, 2007

Statewide

- Eagle Bluff Environmental Learning Center: CERTs is working with Eagle Bluff to provide technical assistance to the state's residential learning centers in energy efficiency and renewable energy. In this project period, energy audits were conducted at Eagle Bluff and the Audubon Environmental Learning Centers. The project developed a report that will provide staff at the Learning Center with information on how to choose the highest priority items for energy improvements as well as maintenance strategies that will save the center money over time. This will catalyze the development of an Eagle Bluff energy efficiency plan which will include both ongoing strategies for existing conditions as well as well as decision making for future purchases.

  Outcome:

  Affordable Energy Solutions was hired to conduct a one day on-site inspection to build the content for the report. The report was then produced from these findings. The report covers each building in the entire complex and prioritizes recommendations across the site. The report includes recommendations for lighting, boiler space heating systems, water heating systems, ventilation, utility billing, appliances, space cooling, and building shells.

  ⇒ $1,400 LCMR

  ⇒ Project completed June 30, 2007

- Audubon Environmental Learning Center: Project to develop a report that will provide staff at the Audubon Environmental Learning Center with information on how to choose the highest priority items for energy improvements as well as maintenance strategies that will save the center money over time in the facility's six buildings. This will help the Center to identify areas where they can make improvements, and which investments would bring the greatest results.

  Outcome:

  Affordable Energy Solutions was hired to conduct a one day on-site inspection to build the content for the report. The report was then produced from these findings. The report covers each building in the entire complex and prioritizes recommendations across the site. The report includes recommendations for lighting, boiler space heating systems, water heating systems, ventilation, utility billing, appliances, space cooling, and building shells. It was found that the older residential and Raptor Center buildings all could use extensive building shell improvements as well as rigorous inventory of electrical use. Recommendations were made both for saving electricity and propane, both areas where dramatic improvements can be made without prohibitive costs.

  ⇒ $1,100 LCMR

  ⇒ Project completed June 30, 2007

Attachment C

Clean Energy Resource Teams

Request for Proposal:
Energy Efficiency and Renewable Energy Projects

The Minnesota Clean Energy Resource Teams (CERTs), via the University of Minnesota Regional Sustainable Development Partnerships and Minnesota Project, seek to provide limited financial assistance for energy efficiency and/or renewable energy projects requiring technical assistance. Funding for these projects is provided through both: (1) the Minnesota Environment and Natural Resources Trust Fund (as recommended by the Legislative Commission on Minnesota Resources) and (2) the Blandin Foundation. Project funding will help support student and/or professional services for at least one project in each of Minnesota's five CERT regions: Central, Northeast, Northwest, Southeast and West Central, during 2006-2007. Projects approved for funding must be completed by June 30, 2007.

The primary objectives of this funding project are to:

- Encourage the implementation of at least one energy efficiency and/or renewable energy project in each CERT region
- Provide a forum for community education about energy efficiency and renewable energy technologies and their economic, ecological and community benefits.

Amount: **$5,200** in project funding will be provided to each CERT region (Central, Northeast, Northwest, Southeast and West Central). These dollars will be used to fund at least two projects as determined by each regional team, with no one project receiving more than $4,200. (Note: To fulfill the grant requirements, *at least* $1,000 must be spent on renewable energy and *at least* $1,000 must be spent on energy efficiency).

To be eligible for consideration for funding, each applicant must:

- Be located within one of the five CERT regions mentioned above; and
- Demonstrate the committed resources, funding and ability to complete the project by June 30, 2007 (second and third rounds of funding will be available in 2007 and 2008, respectively); and
- Demonstrate the ability and the commitment to serve as a community-wide educational resource for renewable energy and energy efficiency.

Project Funding Application

Project funding applications should include the following information:

- **Project and applicant's contact information**
  - Name
  - Organization, if any
  - Address
  - Phone
  - Fax
  - Email

Project Description

The Project Description should clearly set out the project's goals and parameters; maximum two pages. Below are suggested topics to cover in the proposal; some bullets may not be applicable to your project, or you may wish to add other information you find relevant. Please describe as best as possible:

Project details:

- Project Purpose: What is the project designed to achieve?
- Project Activities: What steps or actions do you plan to take to implement this project?
- Roles and responsibilities: Provide a list of all project team members, their specific roles in the project and their contact information;
- Timeline: Provide a schedule for project implementation;

Project results:

- Project outcomes: How will you judge your project's success?
- Project impacts: What are the project's anticipated economic, environmental, and social benefits?
- Educational Resource: How the project will be integrated into the local community as an ongoing public educational resource about energy efficiency and/or renewable energy technologies.

- **Project Funding**

  The project funding and cost section of the application should include:
  - Total project costs
  - Dollars requested
  - Matching dollars
  - In-kind contributions

Evaluation Process and Criteria
Proposals will be reviewed by each regional CERT Steering Committee. Once narrowed down to three proposals, each regional team will vote on award recipients.

All funding applications will be evaluated based on a 100-point scale according the following point allocation:

- Project Details – 35 points
  - Project Purpose – 10 points
  - Project Activities – 15 points
  - Roles and responsibilities – 5 points
  - Timeline – 5 points

- Project Results – 35 points total
  - Project outcomes – 10 points
  - Project impacts – 10 points
  - Educational Resource – 15 points

- Project Cost/Benefit – 30 points (financial returns and broader community benefits)

General Requirements:
Project applicants selected by regional Clean Energy Resource Teams must commit to providing a final project report and be willing to provide additional information for a project case study as requested.

Deadline
Proposals should be submitted to Lissa Pawlisch or Joel Haskard by 4:30 pm on June 1st, 2006. Questions about this Request for Proposal should be directed to Lissa Pawlisch or Joel Haskard, Clean Energy Resource Team Coordinators for the Regional Sustainable Development Partnerships. Selections will be made by August 1st.

U of MN Regional Sustainable Development Partnerships Clean Energy Resource Teams
Lissa Pawlisch and Joel Haskard, Coordinators
411 Borlaug Hall
1991 Upper Buford Circle
Saint Paul, MN 55108
(612) 624-2293 and (612) 625-8759
pawl0048@umn.edu and haska004@umn.edu

Attachment D

REPORT ON THE
CLEAN ENERGY RESOURCE TEAMS (CERTs)
PROJECT

PHASE ONE: ANALYSIS OF ONLINE SURVEY OF CERTs PARTICIPANTS

by

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University of St. Thomas
Department of Political Science
St. Paul, MN

and

Steven M. Hoffman, Ph.D.
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Department of Political Science
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for the

Minnesota Department of Commerce
The Minnesota Project
University of Minnesota Sustainable Development Partnerships
Rural Minnesota Energy Board
Metro County Energy Task Force
Resource Conservation and Development Councils

July 3, 2007

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I. Introduction

This document is the first phase of the 2007 project evaluation of the Clean Energy Resource Teams (CERTs). The report analyzes the results of an online survey of CERTs participants conducted in January 2007. The second phase of this report will be an analysis of focus group discussions with team members from each of six regions (Central, Northeast, Northwest, Southeast, Southwest, and West Central). The second phase will be completed by September 2007.

In May 2005, an initial evaluation of CERTs was completed which included surveys of CERTs participants who attended regional meetings. Where possible, this report will make comparisons between the survey results, although it should be noted that the populations surveyed differ in potentially significant ways as do the nature of the questions that were asked in this second round of evaluations. While the 2005 evaluation surveyed those in attendance at CERTs meetings (n = 59 respondents), the present survey was e-mailed to all those identified by CERTs staff as having a prior or on-going relationship with a CERTs team and whose contact information was maintained on an electronic distribution list (n = 117 respondents). Also, while the 2005 evaluation focused primarily on motivations for participation and knowledge of participants, the present survey asked additional questions concerning the current impact, perceived successes, and future direction of CERTs.

II. Demographic Characteristics

The age range of participants remains quite varied. In 2005, the youngest member surveyed was 30, while the oldest was 91 years of age. In this survey, the numbers are similar. While a few respondents are in their mid-20's and a few in their 70's, including one self-identified "geezer", most are in-between these extremes. The gender difference identified in 2005 (only nine women out of 59 respondents) is less pronounced in this survey, with 34 women (30 percent) and 81 men (70 percent). The focus groups exhibited a similar gender difference, with more men than women participating in those discussions.

Survey respondents were fairly evenly distributed across CERTs regions, with Southeast and West Central having the highest rates of participation (24 percent and 23 percent, respectively), followed by Central (21 percent), Southwest and Northeast (16 percent and 15 percent), and Northwest (9 percent).

III. Individual Participation and Knowledge

The CERTs project has developed a highly devoted cadre of participants. Most of the survey respondents have been involved in CERTs for three years (35 percent), followed by two years (28 percent), and then one year (18 percent); fewer than one in five have been involved for less than one year (19 percent).

When asked an open-ended question about why they have remained involved with CERTs, responses tended to fall in a few different, yet overlapping, categories. Many respondents report remaining involved in order to gain knowledge, noting that CERTs provides "good information that is not easily available," as well as "access to local solutions to global issues." Respondents also emphasized community-related factors, i.e., that they enjoy working with like-minded people, networking, making contacts, and creating friendships. These views are consistent with 2005 survey results showing that material benefits such as lower electricity prices or individual financial benefits were fairly negligible motivating factors. As one respondent wrote, "CERTs allows people to feel like they are not acting or working alone on issues, but are actually a part of a large, and more powerful, group of people." As demonstrated by the following comments, for many participants, CERTs is considered to be an organization that can "make a difference,"

> "CERTs supports the good intentions of the civic-minded."

> "I have grandchildren. I want them to have a world that they can live in without excessive global warming and the resultant wars over dwindling natural resources."

"The government hasn't done anything to fix the energy problems, so it's up to the people to try to find solutions."

"CERTs is a great example of what can happen when the 'grass roots' take action. The direction is good, the goals are admirable, and the program is relatively transparent."

An important question for CERTs is the manner in which people participate in the project. Table 1 compares 2005 survey responses to 2007 survey responses in terms of levels of participation among CERTs participants. Not surprisingly for an online survey, electronic participation accounts for the highest level of participation in 2007 (71 percent), followed by attendance at conferences (49 percent). Importantly, however, while the *number* of people attending quarterly meeting has remained stable between 2005 and 2007, the *percentage* of total participants who participate in face-to-face meetings fell across the two time periods. This theme will be analyzed further in the second phase of this evaluation, as some focus group participants discussed the leveling off of attendance at CERTs meetings and the need to attract more potential members to meetings.

Table 1: Levels of Participation Among CERTs Participants
(Question Asks: How do you participate in CERTs (mark all that apply))

	2007 *n = 117*	*2005* *n = 59*
Electronic participation	71 % (83)	58 % (34)
Attend conference	49 % (57)	N/A
Attend quarterly meetings	42 % (49)	83 % (49)
Attend small group meetings	35 % (41)	54 % (32)
Other participation	16 % (19)	17 % (10)

There are a few regional differences across levels of participation worth noting. Survey respondents in all six regions reported the highest rates for electronic participation. The second highest form of participation differed across regions. Attending a CERTs conference, as opposed to quarterly meetings, was the second most common way to participate in the Central, Northwest, Southwest, and West Central regions, while attendance at quarterly meetings (Northeast) and attendance at small group meetings (Southeast) came in second in other regions. Since quarterly meeting attendance is a topic addressed in the focus group discussions, Table 2 focuses on regional differences across that category of participation.

Table 2: Reported Quarterly Meeting Attendance Across CERTs Regions

Northeast	67 %	(12 out of 18 respondents)
West Central	63 %	(17 out of 27 respondents)
Northwest	46 %	(5 out of 11 respondents)
Central	32 %	(8 out of 25 respondents)
Southeast	21 %	(6 out of 28 respondents)
Southwest	11 %	(2 out of 19 respondents)

Beyond the length and nature of participation in CERTs, survey respondents were asked to assess their own levels of knowledge about various terms and issues central to energy policy. As seen in Table 3, most respondents self-identified as having "some" knowledge about every term, with the exceptions of "energy efficiency/conservation" and "environmental impacts of energy use"; in these cases most respondents reported having "a great deal" of knowledge. Thus, CERTs participants identified themselves as knowing a great deal about energy efficiency/conservation (49 percent), environmental impacts of energy use (49 percent), ethanol/biodiesel (29 percent), the current electrical system and wind technology (both at 27 percent), accessing technical resources for an energy efficiency/renewable energy project (24 percent), and electric transmissions and distribution (23 percent). It is interesting to note that although 24 percent reported knowing a great deal about how to access *technical resources* for an energy efficiency/renewable energy project, only 11 percent had a similar level of knowledge about accessing *funding sources* for such a project, and 33 percent identified as having very little knowledge concerning such funding sources. When it comes to other areas of very little knowledge among CERTs participants, hydrogen technology/fuel cells tops the list (42 percent), followed by biogas/anaerobic digesters (34 percent), the previously noted funding sources (33 percent), biomass for electricity/heat (28 percent), solar technologies (21 percent), and accessing technical resources for an energy efficiency/renewable energy project (21 percent). This last category of accessing technical resources for an energy efficiency/renewable energy project is noteworthy in its distribution across levels of knowledge among participants, with close to one-fourth of those surveyed reporting that they know a great deal about it, about half reporting that they have some knowledge, and almost one-fourth reporting that they have very little such knowledge.

Table 3: Self-identified Levels of Technical Knowledge
Among CERTs Participants
(Question Asks: How Much Do You Know About …)

	A great deal	Some	Very little
…energy efficiency/ conservation	49 % (57)	48 % (56)	3 % (3)
…environmental impacts of energy use	49 % (57)	49 % (57)	3 % (3)
…ethanol/biodiesel	29 % (34)	62 % (72)	9 % (10)
…the current electrical system	27 % (32)	57 % (67)	15 % (18)
…wind technology	27 % (32)	67 % (78)	6 % (7)
…accessing technical resources for an energy efficiency/ renewable energy project	24 % (28)	55 % (64)	21 % (24)
…electric transmission and distribution	23 % (27)	61 % (71)	16 % (19)
…biomass for electricity/heat	18 % (21)	53 % (62)	28 % (33)
…biogas/anaerobic digesters	17 % (19)	50 % (57)	34 % (39)
…solar technologies	16 % (18)	64 % (74)	21 % (24)
…accessing funding sources for an energy efficiency/ renewable energy project	11 % (13)	56 % (65)	33 % (38)
…hydrogen technology/ fuel cells	10 % (11)	48 % (56)	42 % (49)

These technical knowledge questions follow a similar approach to survey questions in the 2005 evaluation, although a few questions are worded somewhat differently and a few additional options have been included in 2007, making a direct comparison difficult. Table 4 shows the results of these technical knowledge

questions in 2005, where a few overall comparisons can be noted. A high percentage of CERTs participants reported a great deal or some level of knowledge about all of the technical issues asked about on the 2005 survey. On the other hand, respondents reported having very little knowledge about fuel cells, biogas and/or anaerobic digesters, and solar panels (41 percent, 31 percent, and 24 percent, respectively). These same categories were noted in the discussion of Table 3 above, as areas where respondents reported very little knowledge in 2007 as well (42 percent, 34 percent, and 21 percent, respectively).

Table 4: Self-identified Levels of Technical Knowledge Among CERTs Participants (2005)
(Question Asks: How Much Do You Know About …)

	A great deal / Some	Very little
…energy efficiency / conservation	89 % (52)	10 % (6)
…wind technology	88 % (52)	10 % (6)
…environmental impacts of energy use	88 % (52)	10 % (6)
…the current electrical system	80 % (47)	19 % (11)
…biomass for electricity / heat	78 % (46)	19 % (11)
…ethanol / biodiesel	78 % (46)	20 % (12)
…solar panels	74 % (44)	24 % (14)
…biogas / anaerobic digesters	68 % (40)	31 % (18)
…fuel cells	58 % (34)	41 % (24)

Related to the amount of technical knowledge is the type of information needed to effectively participate in CERTs. Table 5 shows the results of this line of inquiry, demonstrating the multiple types of information which CERTs participants regard as important for effective participation. "Somewhat important" is the most common refrain when asked about various types of knowledge needed to effectively participate in CERTs, with knowledge of communications and energy technologies/options ranked as very important (both 43 percent). Knowledge of community development (39 percent) and public relations (33 percent) were also considered very important. Legal and engineering knowledge were considered not important by 38 percent and 32 percent of respondents, although it should

be noted that most respondents identified such knowledge as somewhat important for effective participation in CERTs.

Table 5: Participants' Views of Types of Information Needed to Effectively Participate in CERTs

	Very Important	Somewhat Important	Least Important
Communications	43 % (50)	46 % (54)	11 % (13)
Energy Technologies/ Options	43 % (50)	49 % (57)	9 % (10)
Community Development	39 % (46)	48 % (56)	13 % (15)
Public Relations	33 % (38)	53 % (62)	15 % (17)
Economic	26 % (30)	58 % (67)	16 % (19)
Engineering	20 % (23)	49 % (57)	32 % (37)
Legal	7 % (8)	56 % (65)	38 % (44)

Knowledge of communications is ranked as very important (43 percent), so it is surprising that in another survey question, 19 percent of respondents reported that they do not share CERTs-related information with members of their local community. While 81 percent of respondents do share such information, considering the educative role of CERTs as well as the importance that CERTs participants attach to serving their community, it seems particularly important to determine why nearly one-fifth of CERTs participants do not engage in such communication. Again, regional differences are worth noting, as participants in some regions are more likely to be sharing CERTs-related information with members of their local community than participants in other regions (see Table 6).

Table 6: Reported Sharing of CERTs Information Across CERTs Regions
(Question Asks: Do You Currently Share CERTs-related Information With Members of Your Local Community?)

	Yes	No
Northeast	89 % (16)	11 % (2)
Southeast	89 % (24)	11 % (3)
West Central	78 % (21)	22 % (6)
Central	76 % (19)	24 % (6)
Northwest	73 % (8)	27 % (3)
Southwest	69 % (13)	32 % (6)

IV. CERTs' Role

While the first part of the survey focused more on the individual participants within CERTs, the remaining sections focused more on the organization itself – its effectiveness in communicating with members, its potential role in project development, perceived successes in the region and state, and ideas concerning the future direction of CERTs.

CERTs received very positive ratings when it came to communication with members, with "very effective" as the most common response in almost every category of communication. The sole exception was the webpage, which was considered "somewhat effective" by the highest percentage of respondents. This is consistent with a few of the focus group discussions, in which general thoughts about improving the website were mentioned.

The real story of Table 7, however, is the high percentage of "don't know" responses to the effectiveness of team meetings (25 percent), webpage (21 percent), and case studies (18 percent). Fact sheets (14 percent), workshops (14 percent), tours (13 percent), and conferences (11 percent) also garner rather high percentages of "don't know" responses. These results indicate that while CERTs members who receive and employ such methods of communication are impressed with what CERTs provides, there are also a fairly large number of participants who are not familiar with the various communication channels offered by CERTs.

Table 7: Effectiveness of CERTs Communications
(Question Asks: How Effective Are Each of the Following Methods …)

	Very Effective	Somewhat Effective	Least Effective	Don't Know
E-mails	65 % (75)	33 % (38)	1 % (1)	2 % (2)
Conferences	56 % (64)	31 % (36)	2 % (2)	11 % (13)
Monthly Updates	49 % (57)	41 % (47)	3 % (3)	8 % (9)
Tours	47 % (53)	35 % (40)	4 % (5)	13 % (15)
Workshops	46 % (54)	37 % (43)	3 % (4)	14 % (16)
Fact Sheets	41 % (47)	41 % (46)	5 % (6)	14 % (16)
Case Studies	40 % (45)	40 % (45)	4 % (4)	18 % (20)
Team meetings	36 % (41)	34 % (39)	5 % (6)	25 % (28)
Webpage	27 % (31)	50 % (57)	3 % (3)	21 % (24)

When it comes to the roles that CERTs should play in project development, respondents saw many roles as appropriate, as shown in Table 8. More than 90 percent of respondents considered education/information sharing and facilitating connections to resources as roles appropriate to CERTs, as well as advisory (70 percent), expertise (69 percent), and seed funding (62 percent). Only 21 percent of respondents thought that CERTs should play a role in overall project funding and no respondents thought that CERTs had no role to play in project development.

Table 8: Role for CERTs in Project Development
(Question Asks: What Role Should CERTs Play in Project Development (mark all that apply))

Education/Information Sharing	92 %	(106)
Facilitate Connections to Resources	91 %	(105)
Advisory	70 %	(80)
Expertise	69 %	(79)
Seed Funding	62 %	(71)
Overall Project Funding	21 %	(24)
Other	12 %	(14)
None	0 %	

V. CERTs' Impact and Potential: In Their Own Words

The last section of the survey asked a specific question about CERTs staffing followed by more general questions about reasons for the success of CERTs in the region and state. The survey ended with a question on the future direction of the organization. These questions were open-ended, meaning that respondents could type in their own answers rather than choosing from a set of given responses. In this section, overall trends across responses will be discussed.

Staffing

The question about staffing was a bit complex, as it required some background information and had two dimensions. The question asked: "The University of Minnesota Regional Sustainable Development Partnerships has 2 full-time CERT staffers who cover 5 of the 6 CERT regions. The Southwest Regional Development Commission staffs the 6th region. In addition, one team has a part-time regional staffer. Would there be a benefit to having regional CERT staff for all teams? If so, how do you envision regional staff assisting with CERTs?" Basically, the question asked whether there would be a benefit to having regional staff for all teams, and how that idea might actually work in practice. A small minority of respondents wrote only that additional staff would not benefit the organization, or that the current system seems to be working, while a few respondents mentioned potential negative consequences of regional staffing, in that the present system of staffers covering multiple regions facilitates information-sharing among regions. Most respondents considered the problems that the current staffers face when answering this question. Some comments reflected the difficulty of trying to provide a consistent presence across a large geographic area with very few staff, all of whom are based in the Twin Cities:

> "They are outsiders trying to help people they don't know."
>
> "It is tough to coordinate regional CERTs efforts."
>
> "They don't really do enough about outreach, because people who have been involved as activists for years have never heard of the organization."
>
> "CERTs staff should not be concentrated in one area. Now it is concentrated to where the developers and planners have been going. They need to balance themselves in the whole process in every region."

A few respondents questioned whether there would be funding for new staffers; others addressed such funding questions by suggesting the use of college interns in each region. Overall, there was support for regional staffing, with many ideas as to what new staffers could do to assist with CERTs (educating public, administrative tasks, outreach, facilitating start-up work for regional projects, organizing regional conferences and meetings). A representative look at the collective rationale for regional staff follows:

> "As pressure for renewable energy grows, more CERTs presence will be needed."

> "Each region should have staff because this would increase the work, contacts, and information received. Each region is different, so it would make sense to have staff in each one that would know their area."

> "Current staffers may be getting stretched thin with all that they are supposed to be doing, so turning some responsibilities over to other people would free up current staffers to focus more on other projects within CERTs."

> "Having staff would be good because volunteers have certain areas of expertise and passion, and do not want to do administrative work."

> "I think if every team had a staff member we could accomplish a TREMENDOUS amount. As it is now, citizens are donating their volunteer time, sometimes irregularly or very little. This makes it more difficult to get projects done. Also, many citizens are not very good communicators and they don't get the word out effectively about their activities and projects. A staff member could provide communication assistance."

Measuring Success

A critical question for any community-based effort is whether or not participants consider the project or organization to be a success. In this regard, CERTs does extremely well: some 88 percent of respondents (93) consider CERTs to have been a success in their region while 12 percent (13) do not. Some regional variation exists, as shown in Table 9.

Table 9: Reported Regional Success Rate Across CERTs Regions
(Question Asks: In Your Opinion, Has CERTs Been a Success in Your Region?)

	Yes	No
Northeast	94 % (16)	6 % (1)
Southeast	89 % (24)	11 % (3)
Central	82 % (17)	18 % (4)
West Central	78 % (21)	22 % (6)
Northwest	73 % (8)	27 % (3)
Southwest	69 % (13)	32 % (6)

Interestingly, more respondents consider CERTs to be more of a success in the state than in their region. Ninety-five percent (96) of respondents answer affirmatively when asked about the success of CERTs in Minnesota, while only 5 percent (5) do not. Of course, clear majorities of respondents consider the organization to be successful in both venues, with very low numbers of respondents not viewing CERTs as successful in either their region or the state. The survey also asked about specific reasons why respondents would consider CERTs to be successful or unsuccessful in their region and the state. A representative sampling of responses from each category follows.

Reasons for considering CERTs successful in region:

"A growing number of decision-makers know about the organization."
"Dialogue between local, state, and federal levels along with schools, businesses, and the energy industry."
"Increased awareness on issues."
"Low drop-out rate."
"Becoming the go-to group for information."
"Projects that would have either not happened or been slow to develop have been completed as a result of CERT contacts and networking."

Reasons for considering CERTs unsuccessful in region:

"Huge energy problems that are getting worse."
"Small steps may be a distraction wrapped in unrealistic hopefulness. Anything else done gives false hope and displaces more meaningful efforts."
"Unknown in the area to most citizens, even those active in energy issues."
"Building networks and increasing awareness hasn't yet translated into increased public awareness."
"Renewable energy involves expensive 'gear' which CERTs does not pay for; they pay for advice, engineering and services. Some people see this as a waste of money and would rather if money was spent on useful things."
"Program is too new to say that it has been successful."

Reasons for considering CERTs successful in the state:

"Stimulated broad-based interest and participation."
"Maybe more wind development than would have occurred without CERTs."
"Large number of people who came to the recent conference, for different reasons."
"They have successfully connected citizen-driven ideas with funding organizations and other organizations that have professional expertise."
"The governor and the legislature are finally going to do something to promote renewable energy on a statewide basis. It's about time."
"It joins otherwise disjointed but important efforts which is key for mass acceptance and universal paradigm shift."

Reasons for considering CERTs unsuccessful in the state:

"We need to see more policy changes."
"Need more public action."
"People are not aware that CERTs exists."
"Absence of adequate media coverage."
"Don't know – only know how CERTs is going in own area."
"It has been successful but I feel that 99.9 % of the potential for CERTs has yet to be realized."

Future Directions

The last item on the survey was an open-ended question concerning the future direction of CERTs. This topic will be further addressed in the second phase of this report, as it was an integral part of the focus

group discussions with CERTs participants in each region. On the survey, 28 percent (33 of 117 respondents) skipped this question, which could either indicate uncertainty or survey fatigue, or both. Among those who answered the question, there was a recurring theme of continuing the work that is being done now, as in "We still have a lot to learn about energy. Let's stay on the same path until we know it all." Other themes included working with and building on the work of other groups, connecting more with people interested in similar technologies rather than those living in the same regions, getting more people involved, and getting more skilled staff, "…since there is only so much volunteers can do, and they are reaching the point where nothing more will be able to be done." Another theme was incorporating a broader focus on other ways to solve the energy problem, such as exploring the interconnection of energy with other sustainable issues (agriculture and transportation, for example). More demonstration projects and more assistance with finding and securing funding was also suggested, as in "…CERTs should work more on implementing clean energy and less on pulling together various officials and just talking about it." A final theme is one that had been mentioned at various other points in the survey – building awareness of CERTs and increasing its profile in communities across the state.

EVALUATION PERSONNEL

Dr. Angela High-Pippert is an Associate Professor of Political Science and Director of Women's Studies at the University of St. Thomas (St. Paul, MN). Her recent publications include "'What a Couple of Sweethearts': Women Running for Congress in Minnesota" and "See Jane Run: The Minnesota Women's Campaign Fund" in the last two editions of *Perspectives on Minnesota Government and Politics*, and "A Million Moms, MADD Mothers, and Feminists: Media Coverage of Women Activists" in *Women in the Media: Diverse Perspectives*. She has also published in *Women in Politics* and is currently researching citizen participation in community-based energy projects with Dr. Hoffman.

Dr. Steven M. Hoffman is a Professor and Chair of Political Science and former director of the Environmental Studies Program at the University of St. Thomas (St. Paul, MN) and a Senior Policy Fellow at the Center for Energy and Environmental Policy at the University of Delaware. He has authored several books, including *Governing the Atom: the Politics of Risk* (co-edited with Dr. John Byrne) and is the principal editor for the last several editions of *Minnesota Politics and Policy*. He has also published and written numerous journal articles, technical reports, and conference papers, including a number on community energy and the transformation of the electrical system. Dr. Hoffman is active in the politics of Minnesota environmental policy, having served on the Boards of Directors of several state-wide environmental policy and advocacy organizations.

	Budget	12/31/2005	6/30/2006	12/31/2006	6/30/2007	Total Exp	Balance
Task 1							
Personnel	$ 78,029.00	$ 12,897.57	$ 33,051.29	$ 15,911.78	$ 16,168.16	$ 78,028.80	$ 0.20
PT Contracts	$ 10,000.00	$ 1,846.00	$ 8,154.00	$ -	$ -	$ 10,000.00	$ -
Grants	$ 7,500.00	$ -	$ -	$ 2,000.00	$ 5,500.00	$ 7,500.00	$ -
CERTs Conf	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Rel Web Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Printing	$ 201.00	$ -	$ 92.00	$ -	$ 200.00	$ 292.00	$ (91.00)
Travel (In-State)	$ 1,971.16	$ 854.72	$ 1,116.44	$ 301.05	$ (301.05)	$ 1,971.16	$ -
Total	$ 97,701.16	$ 15,598.29	$ 42,413.73	$ 18,212.83	$ 21,567.11	$ 97,791.96	$ (90.80)
Task 2						$ -	
Personnel	$ 92,297.00	$ 12,171.20	$ 28,952.68	$ 23,402.13	$ 27,856.09	$ 92,382.10	$ (85.10)
PT Contracts	$ 7,600.00	$ -	$ 7,600.00	$ -	$ -	$ 7,600.00	$ -
Grants	$ 7,500.00	$ -	$ -	$ 2,000.00	$ 4,500.00	$ 6,500.00	$ 1,000.00
CERTs Conf	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Rel Web Design	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Printing	$ 906.00	$ -	$ 307.55	$ 146.25	$ 167.10	$ 620.90	$ 285.10
Travel (In-State)	$ 2,104.43	$ 415.65	$ 1,688.78	$ -	$ -	$ 2,104.43	$ -
Total	$ 110,407.43	$ 12,586.85	$ 38,549.01	$ 25,548.38	$ 32,723.19	$ 109,407.43	$ 1,000.00
Task 3						$ -	
Personnel	$ 66,260.00	$ 5,409.77	$ 14,938.41	$ 14,643.49	$ 31,309.93	$ 66,301.60	$ (41.60)
PT Contracts	$ 7,520.00	$ -	$ 7,520.00	$ -	$ -	$ 7,520.00	$ -
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CERTs Conf	$ 5,244.00	$ -	$ 1,901.00	$ 526.00	$ 4,331.00	$ 6,758.00	$ (1,514.00)
Rel Web Design	$ 9,455.00	$ 910.00	$ 2,535.00	$ 3,149.00	$ 2,861.00	$ 9,455.00	$ -
Printing	$ 2,120.00	$ -	$ -	$ -	$ 1,132.00	$ 1,132.00	$ 988.00
Travel (In-State)	$ 1,292.41	$ 96.34	$ 470.70	$ 874.65	$ 185.12	$ 1,626.81	$ (334.40)
Total	$ 91,891.41	$ 6,416.11	$ 27,365.11	$ 19,193.14	$ 39,819.05	$ 92,793.41	$ (902.00)
**							
Overall							
Personnel	$ 236,586.00	$ 30,478.54	$ 76,942.38	$ 53,957.40	$ 75,334.18		$ (126.50)
PT Contracts	$ 25,120.00	$ 1,846.00	$ 23,274.00	$ -	$ -		$ -
Grants	$ 15,000.00	$ -	$ -	$ 4,000.00	$ 10,000.00		$ 1,000.00
CERTs Conf	$ 5,244.00	$ -	$ 1,901.00	$ 526.00	$ 4,331.00		$ (1,514.00)
Rel Web Design	$ 9,455.00	$ 910.00	$ 2,535.00	$ 3,149.00	$ 2,861.00		$ -
Printing	$ 3,227.00	$ -	$ 399.55	$ 146.25	$ 1,499.10		$ 1,182.10
Travel (In-State)	$ 5,368.00	$ 1,366.71	$ 3,275.92	$ 1,175.70	$ (115.93)		$ (334.40)
Total	$ 300,000.00	$ 34,601.25	$ 108,327.85	$ 62,954.35	$ 94,109.35		$ 7.20

**** Task 4 is covered in Work Program B for Community Wind Energy Rebate and Financial Assistance Programs.**