

**Environment and Natural Resources Trust Fund
2010 Request for Proposals (RFP)**

LCCMR ID: 055-B1

Project Title:

Windustry Minnesota Renewable Resource Assessment Program

LCCMR 2010 Funding Priority:

B. Renewable Energy Related to Climate Change

Total Project Budget: \$ \$420,618

Proposed Project Time Period for the Funding Requested: 1 year, 2010 - 2011

Other Non-State Funds: \$ \$0

Summary:

Windustry proposes revival of the defunct Wind Resource Assessment Program as a Renewable Resource Assessment Program through purchase and installation of new technology to measure wind and solar resources.

Name: Lisa Daniels

Sponsoring Organization: Windustry

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Location:

Region: Statewide

County Name: Statewide

City / Township:

_____ Knowledge Base	_____ Broad App.	_____ Innovation
_____ Leverage	_____ Outcomes	
_____ Partnerships	_____ Urgency	_____ TOTAL

MAIN PROPOSAL

PROJECT TITLE: Renewable Resource Assessment Program (RRAP)

I. PROJECT STATEMENT

Windustry plans to revive the former Minnesota Wind Resource Assessment Program (WRAP, launched 1982) that ceased to function due to state funding cuts, but was a critical feasibility element in the development of wind energy projects in the State, propelling Minnesota to the national forefront in generating electricity from wind. WRAP was a significant asset for the State in cultivating the wind industry. In July 2008, all cellular towers went digital, making the analog data-loggers obsolete. Windustry plans to re-create WRAP as the Renewable Resource Assessment Program (RRAP) and combine solar assessment with wind assessment. The two monitoring programs are complimentary in that both are growing industries in Minnesota and will result in a more comprehensive renewable resource database for Minnesota.

Development of renewable energy is critical to Minnesota's local energy security, rural economies and supports our energy priorities for a clean, sustainable and long-term low-cost energy future. These projects involve high capital costs and their long term cash flow is based on productivity; thus an accurate assessment of wind and solar resources in Minnesota is essential to developing successful projects. Resource Assessment is a fundamental element of the feasibility analysis of every renewable energy project and Minnesota can not afford to be without a quality wind and solar database. Although Anemometer Loan Programs play a key role in assisting landowners assess their wind resources, Minnesota is one of the states which does not have such a program, thus the State Wind Resource Assessment program provided invaluable assistance to landowners developing wind projects.

Windustry's goals are to overhaul the wind monitoring program and develop a solar monitoring program by installing new equipment at 15-20 sites (for wind) and 6-8 sites (for solar) across the state over the next two years. The solar monitoring sites will coincide with the wind monitoring sites, allowing for easier accessibility to install and maintain the equipment. At each wind monitoring site we propose to install three anemometers at various height levels, a digital data-logger, and new wiring. At each solar site we will install a shadow band pyranometer and a digital data logger. All data collected at these sites will be available to the public, via the Windustry website.

Windustry will designate a Renewable Resource Program Coordinator to manage the assessment sites, oversee purchase and installation of new technology, data collection and interpretation and ensure accessibility to members of the wind assessment collaborative as well as the general public. We will also map all site locations, including the surrounding landscape and dominant landscape features. As a creative, innovative element, RRAP will include an "ADOPT A TOWER" Program aimed at small wind turbine installers, manufacturers and small developers. People or companies will "Adopt a Tower", visiting the tower quarterly to check out the general condition of the equipment and site, collect data and serve to make sure its functioning properly. Similar to "Adopt a Highway" participants will be invited from local businesses and community organizations, creating a greater sense of involvement in Minnesota's leadership in renewable energy. We anticipate that this will lead to even greater market acceptance of wind and solar projects statewide.

"ADOPT A TOWER" PROGRAM

- This program will be aimed at small wind turbine installers, manufacturers and local developers.
- People or companies will "Adopt a Tower" and visit the tower quarterly to check the general condition of the equipment & site, and swipe out the cards in the data logger. It will not require any climbing of towers.
- This will be a in-kind donation, but Adopters will be recognized as a partner in the Minnesota Renewable Resource Assessment Program
- Skills & Equipment needed by the Adopter will include
 - Working knowledge of equipment used in wind and/or solar data collection
 - Transportation to and from the monitoring site

- Binoculars to look at the monitoring equipment at all heights
- Log and email dates visited monitoring site, status of the monitoring equipment and any other factors affecting the data collection
- Cell phone conversations periodically on wind assessment site

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Monthly Wind and Solar Data Collection – every 10 minutes ____ **Budget:** \$ 420,618__

Deliverable – Wind Data

1. Monthly average wind speed
2. Monthly average power available
3. Monthly average wind shear
4. Monthly average wind rose.

Completion Date

On-going
On-going
On-going
On-going

Deliverable – Solar Data

1. Monthly average global solar irradiance
2. Monthly average solar available
- 3.

Completion Date

On-going
On-going

III. PROJECT STRATEGY

A. Project Team/Partners

Windustry has been providing wind energy information and technical assistance to farmers, ranchers, elected officials, rural utilities and other interested groups since 1995. Founder and Executive Director Lisa Daniels leads Windustry in contracts with the National Renewable Energy Laboratory and as a partner on the Wind Powering America initiative with the U.S. Department of Energy. Lisa serves on the MN Legislative Electric Energy Advisory Task Force on Community Based Energy Development, the Advisory Board for the Renewable Energy Center at St. Francis University in Pennsylvania, and the National Wind Coordinating Committee's Steering Committee. She was recognized in 2004 by the U.S. DOE Wind Powering America program, with the Chicago Regional Office Wind Advocacy Award for regional leadership, creativity, and commitment to wind energy development, and honored again in 2005 for her work with Wind Powering America's Agriculture Outreach Team.

Windustry will identify and recruit both ADOPT A TOWER partners and funding partners among Minnesota's utility companies and renewable energy developers. Data collection, storage and processing issues will be significant, therefore Windustry plans to develop partnerships with key Minnesota universities so that interpretation of resource data can also become a "green jobs" training project for students interested in the environmental field.

B. Timeline Requirements

Windustry will launch RRAP upon securing full program funding for all related equipment purchases, cell tower leases, insurance arrangements and staffing requirements. We anticipate that it will take 12 months to purchase and install equipment and begin recording data.

C. Long-Term Strategy

Windustry is making an initial commitment to launch and operation of RRAP for two years (2010 – 2012), however, this program should be secured through the next decade at least as Minnesota moves to realize its Renewable Energy Standards of 25 % Wind by 2025. With the anticipated recovery of wind developers, Windustry anticipates recruiting utility and wind developer partners to assume anchor funding of RRAP.

Project Budget

INSTRUCTIONS AND TEMPLATE (1 PAGE LIMIT)

Attach budget, in MS-EXCEL format, to your "2010 LCCMR Proposal Submit Form".

*(1-page limit, single-sided, 11 pt. font minimum. Retain bold text and delete all instructions typed in italics. **Add or delete rows as necessary.** If a category is not applicable you may write "N/A", leave it blank, or delete the row.)*

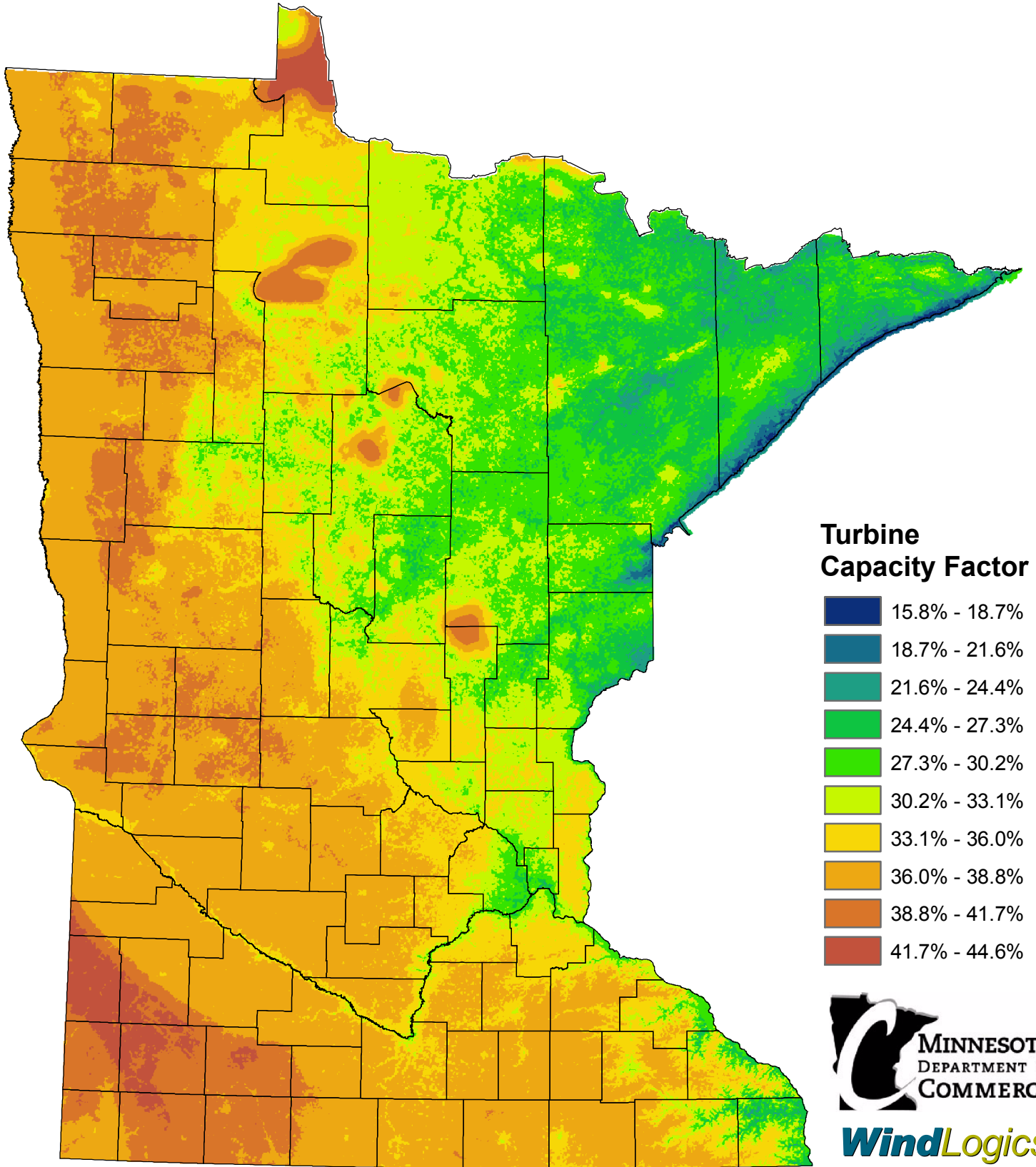
IV. TOTAL PROJECT REQUEST BUDGET (*[Insert # of years for project]* years)

BUDGET ITEM <i>(See list of Eligible & Non-Eligible Costs, p. 13)</i>	AMOUNT
Personnel: /	\$ -
Executive Director (@ .15 fte = 12,589) labor: \$11,063.70 - 87.91% of total); benefits: \$1,525.30 - 12.11 % of total	\$ 12,589
Program Analyst (@ 1 fte = 43,929) labor - \$38,000 - 86.5% of total); benefits - \$5,929 - 13.5 % of total	\$ 43,929
Contracts:	\$ -
Tower climbing & installation (20 towers @ \$2200 per site = \$44,000; installation of 3 additional towers (3 @ \$15,000 = \$45,000)	\$ 95,000
Equipment/Tools/Supplies: <i>(20 kits of 80m sensor and SymphoniePLUS logger for lattice towers (@ \$6000 each); 8 Pryanometers (@ \$600 each; laptop (1 @ \$1000) Cellular ipak system & cell phone plan per month for data retrieveal 20 @ \$1480 = \$29,600; three additional towers (\$12,800 @ 3 = \$38,400) one tower installation kit - \$8000</i>	\$ 201,800
Acquisition (Fee Title or Permanent Easements): <i>Leases for cell phone or other pre-owned towers - \$100 month @ 20).</i>	\$ 24,000
Travel: <i>(Travel to regularly inspect tower equipment, swipe data loggers - 500 miles per month for state @.55 cents/mile @ 12 months)</i>	\$ 3,300
Additional Budget Items: <i>1 Insurance for project (20 towers @ \$1000/year = \$20,000) Maintenance Fund (20 towers @ \$1000/year = \$20,000)</i>	\$ 40,000
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$ 420,618

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period: Windustry plans to solicit both wind development companies and the major utility companies in Minnesota to contribute \$10,000 - \$15,000 per year to operate the RRAP program. We seek initial program start-up funds from LCCMR to purchase the new equipment and hardware required; and after the first year, Windustry will develop on-going operating support for RRAP from Utility companies and wind developers.	\$ 100,000	<i>pending - for Year Two of project</i>
Other State \$ Being Applied to Project During Project Period: <i>Indicate any additional state cash \$ (e.g. bonding, other grants) to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.</i>		<i>Indicate: Secured or Pending</i>
In-kind Services During Project Period: <i>Indicate any in-kind services to be provided during the funding period. List type of service(s) and estimated value. In-kind services listed must be specific to the project.</i>	\$ -	
Remaining \$ from Current Trust Fund Appropriation (if applicable): <i>Specify \$ and year of appropriation from any current Trust fund appropriation for any directly related project of the project manager or organization that remains unspect or not yet legally obligated at the time of proposal submission. Be as specific as possible. Describe the status of \$ in the right-most column.</i>		<i>Indicate: Unspent? Not Legally Obligated? Other?</i>
Funding History: <i>Indicate funding secured prior to July 1, 2010 for activities directly relevant to this specific funding request. State specific source(s) of funds.</i>	\$ -	

Minnesota's Wind Resource by Capacity Factor at 80 Meters



This map has been prepared under contract by WindLogics for the Department of Commerce using the best available weather data sources and the latest physics-based weather modeling technology and statistical techniques. The data that were used to develop the map have been statistically adjusted to accurately represent long-term (40 year) wind speeds over the state. Capacity factors are based on a 1.65 MW turbine, and production has been discounted 15% to represent real world conditions. Data has been averaged over a cell area 500 meters square, and within any one cell there could be features that increase or decrease the values shown on this map. This map shows the general variation of Minnesota's wind resource and should not be used to determine the performance of specific projects.

Windustry Proposal to the Legislative-Citizen Commission on Minnesota Resources

Project Manager Qualifications and Organizational Description:

Project Manager: Lisa Daniels, Executive Director, Windustry

LISA M. DANIELS lisadaniels@windustry.org **612-870-3462**

Lisa M. Daniels, Executive Director and founder of Windustry, has been providing wind energy information and technical assistance to farmers, ranchers, elected officials, rural utilities and other interested groups since 1995. Lisa leads Windustry as a contractor/consultant with the National Renewable Energy Laboratory and is currently a partner on the Wind Powering America initiative with the U.S. Department of Energy. Lisa serves on the National Wind Coordinating Collaborative Steering Committee. She has led the development of several publications on wind energy and its application, and is frequently asked to speak at agriculture and energy forums, workshops and conferences.

Lisa was recognized in 2004 by the U.S. DOE Wind Powering America program with the Chicago Regional Office Wind Advocacy Award for regional leadership, creativity, and commitment to wind energy development. She was honored again in 2005 for her work with Wind Powering America's Agriculture Outreach Team.

Lisa leads a small, nimble staff to produce a biennial national conference for community wind that is highly regarded and widely popular. Lisa's extensive contacts with highly-regarded professionals in wind energy and related fields has enabled Windustry to provide insightful, detailed and up-to-the minute information as well as a superior networking opportunity to conference participants.

Windustry: Organizational Description

Windustry has provided detailed, extensive information on development of wind energy projects to farmers, rural landowners, elected officials, utility representatives, community planners, farm management educators, lawyers and bankers since 1995. Windustry was originally developed as a project of the non-profit Sustainable Resources Center based in Minneapolis, funded by the Legislative Commission on Minnesota Resources for two bienniums. In 1999, Windustry broadened its scope and expanded its target audience beyond the state of Minnesota. In 2001, Windustry became fiscally sponsored by the Institute for Agriculture and Trade Policy, and has since become an independent 501(c)(3) non-profit organization registered in 2002.

Mission and goals

Windustry's mission is to promote progressive renewable energy solutions and empower communities to develop wind energy as an environmentally sustainable, locally-owned asset. Through outreach, education and advocacy we work to remove the barriers to broad community ownership of wind energy.