

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

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**LCCMR ID: 081-B3**

**Project Title:**

School of Environmental Studies - Wind Jet Pilot

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**LCCMR 2010 Funding Priority:**

B. Renewable Energy Related to Climate Change

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**Total Project Budget: \$** \$300,000

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

**Other Non-State Funds: \$** \$100,000

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**Summary:**

The Wind-Jet is considered to be the next breakthrough in wind generation. This pilot is sized to generate 100% of the energy needs of the School of Environmental Studies.

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**Name:** Ryan Port

**Sponsoring Organization:** Wind Jet Inc

**Address:** 6177 Falcon Ridge Tr  
Apple Valley MN 55124

**Telephone Number:** (612) 226-9620

**Email:** theports@charter.net

**Fax:** \_\_\_\_\_

**Web Address:** \_\_\_\_\_

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**Location:**

**Region:** Metro

**County Name:** Dakota

**City / Township:** Apple Valley

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

# MAIN PROPOSAL

**PROJECT TITLE: Apple Valley School of Environmental Studies Wind-Jet Pilot**

## **I. PROJECT STATEMENT**

The main goal of this pilot is to prove to potential private and public investors the capability of the new Wind Jet technology as well as make the School of Environmental Studies 100% renewable. This project should produce 300 kW at 20 mph wind. It will also, for most months produce more energy than the School of Environmental Studies actually uses. This will be a side by side comparison of the Wind-Jet vs. the existing conventional windmill. The diameter will be the same and the hub height will be similar. The success of the project will be determined by achieving our aggressive demand and energy goals as well as proving our ability to customize the capacity factor. We also need to prove our ability to survive Ice storms.

The design was invented by Brad Sorensen, founder and CEO of Source One Power, who was also credited for several designs including the 1986–1992 Mazda RX7 sports car and Volvo 850 sedan, station wagon and coupe, Freightliner semi-trucks, Lockheed jet aircraft (including the stealth bomber and other still classified jet aircraft), U.S. Navy aircraft carriers, race cars, power boats, sail boats and other vehicles.

With a successful pilot, we will be able to customize commercial installations with the goal of producing more than 100% of the energy used by the site with renewable energy. Also, the pilot is designed to prove our ability to limit the capacity of wind-jets which will allow us to create a utility scale wind-jet capable of producing 8 MW per installation on wind farms such as Buffalo Ridge.

We plan to use this pilot as an example for other schools, commercial applications such as Target and Best Buy, government buildings, Native American installations, electric trains, and utilities. We also have a residential model slightly different in design capable of producing 10 kW for a four foot diameter installation. If Minnesota utilities decide to invest in this technology, the savings for Minnesota ratepayer's could exceed one billion dollars to meet the 3.9 GW goal as well as produce more energy than would be produced by conventional windmills.

This project is also meant to have educational benefits for Minnesota students. A public website will be constructed demonstrating the basics of Wind Energy Production as well as the benefits of the Wind Jet. Potential topics could include but not limited to, how to assess wind energy potential for a site, what is a capacity factor, what is a load factor, statistical comparison of Wind-Jet vs. Conventional Windmills. The students of the School of Environmental Studies will be involved in as many aspects of this project as possible.

## II. DESCRIPTION OF PROJECT RESULTS

**Result 1:** Measured demand and energy **Budget:** \$ 5,000

**Deliverable**

1. Itron Q1000 meter to provide real-time billable usage and demand statistics.
2. Annual Demand exceeds 300 kW
3. Annual usage exceeds XXX kWh

**Completion Date**

10/31/2010

**Result 2:** Customizable Capacity Factor **Budget:** \$ 20,000

**Deliverable**

1. Ring pair 1 and 3 with low capacity restrictions
2. Ring pair 2 and 4 with high capacity restrictions

**Completion Date**

10/31/2010

**Result 2:** Ice Storm Survival **Budget:** \$ 20,000

**Deliverable**

1. NRG Systems Ice Free Hybrid Turbine Control calibrated to shut down turbine during icing events.

**Completion Date**

3/31/2011

# Project Budget

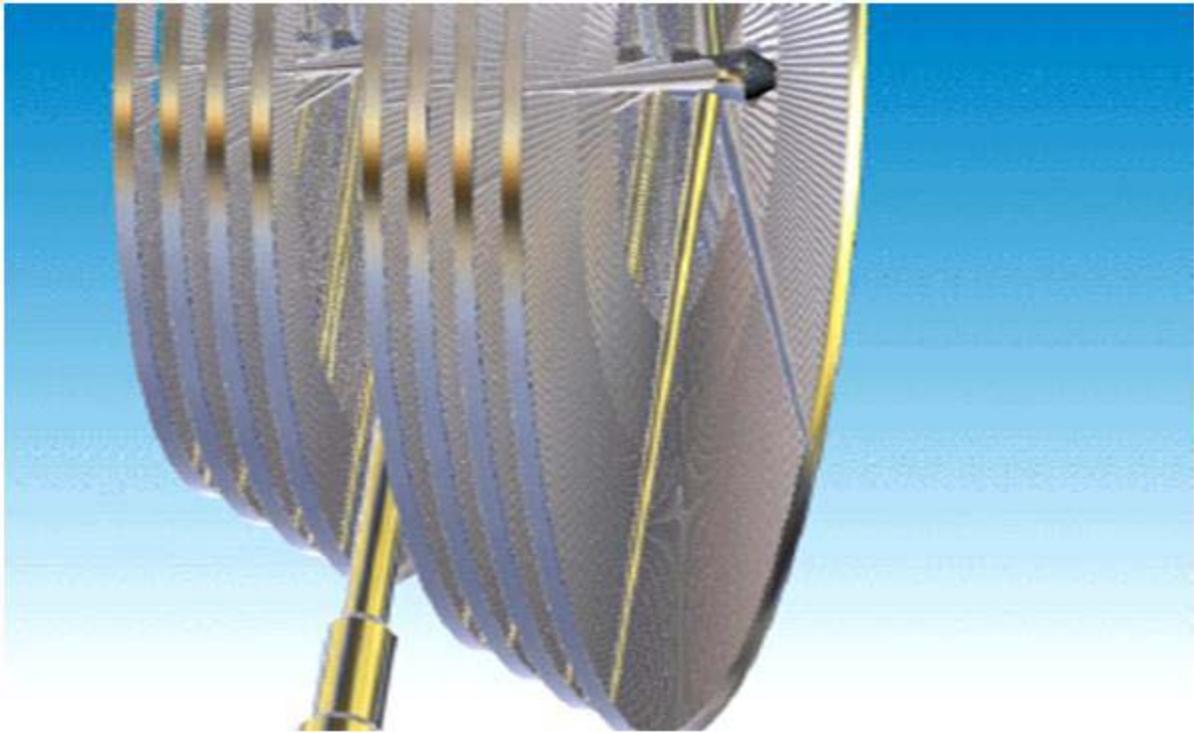
## INSTRUCTIONS AND TEMPLATE (1 PAGE LIMIT)

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 (1 year)

<b>BUDGET ITEM</b> <i>(See list of Eligible &amp; Non-Eligible Costs, p. 13)</i>	<b>AMOUNT</b>
<b>Personnel:</b> <i>In this column, list who is getting paid to do what and what is the % of full-time employment for each position. List out by position or position type - one line per position/position type. For each, provide details in this column on the inputs: i.e. % dollars toward salary, % dollars toward benefits, time period for position/position type, and number of people in the position/position type.</i>	\$ -
Ryan Port - Time to be donated to the project	\$ -
Paul Geffert - Time to be donated to the project	\$ -
<b>Contracts:</b> <i>In this column, list out proposed contracts. Be clear about whom the contract is to be made with and what services will be provided. If a specific contractor is not yet determined, specify the type of contractor sought. List out by contract types/categories - one line per type/category.</i>	\$ -
Non- Disclosure Agreement between ISD 196 and Wind Jet Inc.	\$ -
Business Agreement between ISD 196 and Wind Jet Inc. Once financial payback of the Wind Jet has been achieved, Wind Jet Inc. will own a portion of the energy produced.	TBD - But not a factor for this Budget
Pole Installation. The contractor has not yet been determined	
Dakota Electric - Team will work with Dakota Electric to determine site assesment/installation	\$ 50,000
Consulting Engineers Group - A Dakota Electric Subsidiary will likely be utilized to determine the best contrator for Pole Installation	\$ 50,000
<b>Equipment/Tools/Supplies:</b> <i>In this column, list out general descriptions of item(s) or item type(s) and their purpose - one line per item/item type.</i>	\$ -
Windmill components	\$ 33,150
Windmill assembly	\$ 25,257
Windmill shipping	\$ 4,736
Windmill testing	\$ 3,157
Windmill installation	\$ 14,207
Windmill security fence	\$ 1,579
Windmill connection to grid	\$ 1,579
Windmill power meter	\$ 1,579
Windmill power monitoring	\$ 1,579
Windmill power accounting	\$ 1,579
Windmill income collection	\$ 1,579
Construction Facilities	\$ 87,923
<b>Acquisition (Fee Title or Permanent Easements):</b> <i>In this column, indicate the proposed # of acres and who will hold title (e.g. DNR, Non-profit).</i>	\$ 22,100
<b>Travel:</b> <i>Be specific. Separate in-state and out-of-state travel; explain each. Only travel essential to completing project activities can be included.</i>	\$ -



Ryan Port will be the program manager and apply his evaluation expertise in leading the evaluation of this project. He has been working with the inventor of the Wind-Jet for over two years and understands all aspects of its capabilities.

Ryan developed much of his energy expertise while working at Xcel Energy, where he was responsible for fixed cost allocation (\$5 billion annually) across five separate state jurisdictions. Additionally, he was responsible for performance analysis of various demand side management (DSM) programs for residential and commercial customer programs. Ryan's also designed demand studies that were instrumental to support applications rate changes to the utility commissions. Ryan is currently the lead analyst in charge of analyzing over 2.5 Billion dollars worth of spend at Xcel Energy to find/quantify savings.

Ryan's experiences at Xcel Energy provide him with a broad perspective of energy and utility markets. The auditing tools that Ryan developed for the jurisdictional cost allocation process are still in use by the finance, transmission, energy accounting, and load research teams at Xcel. The jurisdictional audit process included collecting customer and substation level utility data, aggregating load shapes for each of 15 separate jurisdictions, then allocating costs to each Jurisdiction by numerous customer rate classes.

Ryan has developed expert level skills at building and analyzing complex databases. He has developed and refined complex financial and billing systems for energy customers that contain auto-populating and auto-updating capabilities. The systems include data from multiple external sources including the Department of Energy, utility bills, and customer accounting systems.

While at Target Corporation, Ryan designed a process to review 7,000 separate accounts (electricity, natural gas, and water) and identify those warranting a rate review. As a result of this development work, he discovered \$2,000,000 in rate savings in year one and an additional \$1,700,000 in savings for new accounts.

Ryan also has two years of experience evaluating the cost effectiveness of DG projects for retail/government clients. He has made recommendations to either continue or discontinue wind/solar projects based on the rate benefits at the particular site they were proposed. He was the lead analyst on many DG projects for Target Corporation. He recently analyzed the cost effectiveness of installing over 1 GW of windmills for a desalination plant in Saudi Arabia. This project is moving forward based on his analysis. He is also currently analyzing a 500 MW solar installation in Arizona.

Ryan has a bachelor's degree in Mathematics and Statistics from Winona State University. While a student, he tutored Mathematics, Statistics, Economics, Finance, and Accounting.