Environment and Natural Resources Trust Fund
2012-2013 Request for Proposals (RFP)

Project Title: **ENRTF ID:** **138-H**

School of Environmental Studies - Wind Jet 50kW

Topic Area: H. Renewable Energy

Total Project Budget: $ 163,000

Proposed Project Time Period for the Funding Requested: 1 yr. July 2013 - June 2014

Other Non-State Funds: $ 0

Summary:

The main goal of this project is to demonstrate the effectiveness of the Wind Jet technology, by comparing the results of the turbine with the already existing turbine.

Name: Ryan Port

Sponsoring Organization: Financial Windependence

Address: 6177 Falcon Ridge Tr
Apple Valley MN 55124

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Web Address none

Location

Region: Metro

County Name: Dakota

City / Township: Apple Valley

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%

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. This project should produce 50 kW at 28 mph wind. This will be a side by side comparison of the Wind-Jet vs. the existing conventional windmill currently on the property. The sweep area will be the same; however, we will demonstrate an increase in capacity of 150% with an increase of energy output of over 200%. 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. In order to achieve these goals, a turbine with multiple counter rotating rings will be constructed. The rings are spring loaded; therefore, no additional equipment is needed to limit the turbine to its maximum capacity.

Students at the School of Environmental Studies (SES) will be able to do side-by-side research with an existing 20kw turbine already on site along with the proposed pilot turbine. All of the SES current wind data is real time and published on the web. As a result, many schools are interested in learning more about the attributes of wind power in the classroom, and the possibilities of adding wind power on site.

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 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 5 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 4 kW for a smaller installation.

II. DESCRIPTION OF PROJECT ACTIVITIES

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

Deliverable	**Completion Date**
1. Itron Q1000 meter to provide real-time billable usage and demand statistics.	9/1/2013

Result 2: 50 kW turbine **Budget:** $ 163,000

Deliverable	**Completion Date**
1. Annual Demand limited 50 kW	12/1/2013
2. Annual usage exceeds 2X current turbine kWh	

III. PROJECT STRATEGY

A. Project Team/Partners

Ryan Port – President of Financial Windependence – Will oversee all aspects of project.
Eric Greenslade – Partner—Oversee construction of project as well as quality control of manufactured components.
Paul Snyder – Project Manager – Assure timeline as well as construction of turbine
Dan Bodette – Principal – Will make final decisions on all issues.
Larry Schieb - President – Rebuilders Plus in Pennsylvania. Partner with Ryan and Eric.
Ron Miller – Employee of Rebuilders plus – Oversee supply chain.

B. Timeline Requirements

The major majority of the turbine would be built in Red Lake MN. The deadline for delivery would be 8/15/2013 to the SES for assembly**.** The pole and assembly would be completed before 9/4/2013, before students return for the new school year.

C. Long-Term Strategy and Future Funding Needs

There is currently interest in building manufacturing for the WindJet in OH, PN, SC, CA and MN. Our preference is MN. We hope to grow fairly quickly. Financial Windependence has built the first turbine of this type in Pennsylvania

2012-2013 Detailed Project Budget

IV. TOTAL ENRTF REQUEST BUDGET 1 years

BUDGET ITEM *(See list of Eligible and Non-Eligible Costs, p. 11)*	**AMOUNT**	
Personnel: Ryan Port, Eric Greenslade, Paul Snyder - 100% commision		
Ryan Port	$	2,000
Eric Greenslade	$	2,000
Paul Snyder	$	1,000
Aluminum Extrusion	$	30,000
Nacelle, Ring, and Pole construction	$	30,000
Equipment/Tools/Supplies:	$	-
1/4" rings Material - Stainless Steel	$	8,000
Spokes - Aluminum - 4 " diameter - 1/2" thickness	$	1,000
Hardware	$	9,000
Generators - 2 25 KW generators	$	30,000
Inverters - 2 25 KW	$	28,000
Pole - 18" wide 1/2 " thick 100'	$	17,000
Acquisition (Fee Title or Permanent Easements): The School of Environmental Studies would permit a 60' pole capable of holding 9000 pounds of equipment	$	5,000
Travel: No travel nessesary	$	-
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$	163,000

V. OTHER FUNDS

SOURCE OF FUNDS	**AMOUNT**	**Status**
Other Non-State $ Being Applied to Project During Project Period: *Any additional funds nessesary to complete this project would be provided by Financial Windedpendence. Our goal of this project is not to make a profit, but to demonstrate the effectivness of the WindJet*	?	*Pending*
In-kind Services During Project Period: *The time needed to design and install this project above and beyond the $5,000 requested would be donated*	$ -	

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 four 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 has also been 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.

While at the Bank of America, Ryan was the AVP of Energy Procurement and Budgeting. His main responsibility was negotiating energy agreements for Bank of America's deregulated load as well as monthly reporting of Bank of America's total utility spend.

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 as well as Bank of America.

Ryan most recently has been the Project Manager for the first wind turbine of this type which is currently installed in Pennsylvania.

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.