

**Environment and Natural Resources Trust Fund
2020 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 205-EH

Rural Distributed Renewable Energy and Back-Up Power

Category: H. Proposals seeking \$200,000 or less in funding

Sub-Category: E. Air Quality, Climate Change, and Renewable Energy

Total Project Budget: \$ 198,500

Proposed Project Time Period for the Funding Requested: June 30, 2022 (2 yrs)

Summary:

This project will deploy ten Minnesota designed and manufactured SolarBank (solar/storage) systems, to provide rural energy consumers carbon free energy savings and back-up power during grid outages.

Name: Jill Thibert

Sponsoring Organization: Northwest Renewable Energy LLC

Job Title: Project Manager

Department: _____

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Red Lake Falls MN 56750

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Web Address: www.northwestrenewableenergy.com

Location:

Region: Northwest

County Name: Polk, Red Lake

City / Township:

Alternate Text for Visual:

Attached

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



Environment and Natural Resources Trust Fund (ENRTF) 2020 Main Proposal Template

PROJECT TITLE: RURAL DISTRIBUTED RENEWABLE ENERGY AND BACK-UP POWER

I. PROJECT STATEMENT

The goal of the Rural Distributed Renewable Energy and Back-Up Power Project is to help increase the awareness and efficiency of rural communities, through deploying systems that will provide testimonies to the potential savings and energy security that be achieved by combining renewable energy generation and energy storage capabilities in to one system. These systems will help reduce reliance on fossil fuel generation, offering not only environmental benefits, but also financial savings and energy security via back-up power. The 10 systems installed will serve as case studies to confirm the potential value and security that can be achieved at both community, commercial and/or residential locations.

The SolarBank is a Minnesota designed and manufactured advanced energy management system. The all-in-one design simplifies efficient use of renewable energy by combining all the components, solar power, advanced battery technology, and internet intelligence in one easy to install package. Each system will consist of a mid-sized solar array, sized according to application and load, along with a battery bank, inverter/charger, and balance of system components.

There are no required customer behavior changes involved, no fuel to fill, no noise to drown out, and no fumes or to vent. SolarBank is a maintenance free, zero emission solution that will last for years. SolarBank allows the consumer to choose what appliances or critical loads they would like to run, and the system will provide the power without any response required from the consumer, no matter what time of day or night, and any day of the week. This allows for stress free sleep for home and business owners alike. If it rains the sump pump will run and in a blizzard the furnace will work. SolarBank gives every home or business owner the freedom, security and reliability we have all been waiting for, plus helps save energy dollars for years to come.

The intent of this project is to deploy ten (10) SolarBank systems to rural community business' (gas stations), critical and emergency infrastructure locations (City Hall, Emergency Storm Shelter, Fire Hall, etc.), and rural residential locations. These systems will provide energy security and back-up power during grid power outages and/or emergencies, while also allowing them to save on energy bills.

The SolarBank system from Northwest Renewable Energy is a zero-emission, pollution-free, renewable energy multi-purpose power system available for home and business applications. This innovative system helps the consumer reduce energy bills while giving the added security of a back-up power supply. SolarBank is designed to utilize solar energy and stored off-peak utility power to meet your prioritized electrical needs. It also functions as a dependable back-up power supply for home or business in the event of grid power failures.

SolarBank is a cost-effective way to economically utilize solar energy, by using advanced storage technologies and energy management we are able to make more efficient use of existing utility power plants. SolarBank will be very helpful as a "peak load management" system, has the ability to utilize varying time of day energy values, saving homes business' money in multiple ways. Another added benefit of SolarBank is the back-up power it provides, which is tailored to meet specific energy needs.

The energy produced by the solar PV modules is either consumed in the home or business, or stored in the advanced AGM battery bank. When the batteries are at full capacity SolarBank will stand ready to provide reliable power in the event of grid power loss. Providing back-up power in 15 milliseconds, faster than the blink of an eye, SolarBank delivers a virtually seamless power transfer from grid to batteries. Many banks and business operations have found that the instantaneous and automatic back-up power supply is ideal for computers, security alarms and phone systems. Now the freedom to control energy costs and provide back-up power is all possible in one system.

II. PROJECT ACTIVITIES AND OUTCOMES

ACTIVITIES:

Selection of system install sites, Material Procurement and System Manufacturing, and Installation of SolarBank systems at 10 selected locations, including Emergency Response, Public Safety, Rural Residential and Small Business sites.



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2020 Main Proposal Template**

OUTCOMES:

The expected outcome is added security and back-up power to critical rural community sites during grid power outages, while also provide energy cost savings during daily use. We hope this will be a platform to confirm the ability to efficiently utilize solar energy and storage, reducing grid reliance, promoting renewable energy capabilities and the benefits to the environment.

Activity 1 Title: Selection of Installation Locations

DESCRIPTION:

The initial phase of the project will be continued discussion community facilities, business’ and residents, and eventual selection and confirmation of chosen locations for the 10 systems to be installed. Being a community benefiting project the concept is to provide value and energy security to Community Offices, Emergency Shelters, Fire and/or First Aid facilities, Critical Business’ and Rural Residence examples. This will be accomplished through an application and interview process with potential candidates to determine who/which will receive the greatest value, and who/which will provide the greatest value to the community in the times of grid power failures.

Expected outcomes will be the selection of facilities to all the ability for people to have access to storm shelters, emergency response, and/or necessary supplies in the event of incimate weather conditions and/or gird power outages. Evaluation of this will be confirmed via follow up and discussion with selected system sites and how they were able to maintain operation during grid power outages.

ENRTF BUDGET: \$5,000

Activity 2 Title: Component Procurement & Manufacturing

DESCRIPTION:

Upon approval of Project, and receipt of available moneys from Environmental and Natural Resources Trust Fund, component procurement will be initiated to secure materials for manufacturing and prepare for system installation in to various applications.

ENRTF BUDGET: \$133,500

Activity 3 Title: System Installation

DESCRIPTION:

Once complete systems have been manufactured, estimated 4-6 weeks after receipt of funds, system installation will begin. The expected installation time for all 10 systems is approximately 3 to 9 months, greatly dependent on and/or impacted by weather. The goal is to have all 10 systems installed and inspected by November 31, 2020, weather permitting, if weather delays result we expect to have installations completed by May 31, 2021.

ENRTF BUDGET: \$60,000

Outcome	Completion Date
<i>1. Final Selection/Confirmation of 10 SolarBank Locations</i>	<i>May 31, 2020</i>
<i>2. Procurement of System Components (Solar Panels, Racking, Batteries, Inv/Chg, etc.)</i>	<i>Sept. 30, 2020</i>
<i>3. Completion of SolarBank installations</i>	<i>Nov. 31, 2020</i>

III. PROJECT PARTNERS AND COLLABORATORS:

Key Partners and Collaborators for this Project are Northwest Renewable Energy and SolarBank. Ongoing correspondence and cooperation between these two entities has lead to continuous progress and clear set goals for the business relationship and growth. With Northwest Renewable Energy’s facilities and manufacturing capabilities, the long-time research and development of SolarBank can realize its potential for creating real energy savings and security for the available market.

IV. LONG-TERM IMPLEMENTATION AND FUNDING:

The implementation of this Project will span over roughly 3 months, once funding is received. The compact modular design of the SolarBank system will help reduce system installation time. Funding is critical to this Project as it will allow procurement of system components and their installation.

Attachment A: Project Budget Spreadsheet
 Environment and Natural Resources Trust Fund
 M.L. 2020 Budget Spreadsheet



Legal Citation:

Project Manager: Jill Thibert
 Project Title: RURAL DISTRIBUTED RENEWABLE ENERGY AND BACK-UP POWER
 Organization: Northwest Renewable Energy
 Project Budget: \$198,500
 Project Length and Completion Date: 5 to 12 Months - November 31, 2020, no later than May 31, 2021
 Today's Date: March 14, 2019

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET		Budget	Amount Spent	Balance	
BUDGET ITEM					
Personnel (Wages and Benefits)		\$ 5,000	\$ -	\$ 5,000	
Costs are to cover estimated time spent for Project Management, Interviewing, Product Procurement, Contractor/Electrician Management, etc.					
Professional/Technical/Service Contracts					
System Installation - PV Solar, racking, panels, connections/wiring of array to PV Charge Controller. Installer to be selected by Competitive Bid process.		\$ 25,000	\$ -	\$ 25,000	
Electrical Connection - Wiring of connected critical loads to SolarBank subpanel and from Grid to SolarBank. Electrician to be selected based on Experience and Competitive Bid proces.		\$ 30,000	\$ -	\$ 30,000	
Equipment/Tools/Supplies					
		\$ -	\$ -	\$ -	
Capital Expenditures Over \$5,000					
SolarBank System components - PV Panels, Racking, Batteries, Inverter/Chargers, Electrical		\$ -	\$ -	\$ -	
Solar Panels and Racking - ~4kW PV Array Per Site - Per 10 Arrays - \$3,500 Each		\$ 35,000	\$ -	\$ 35,000	
Batteries - 48VDC, ~18kWh Bank for each Site - Per 10 Sites - ~\$400 Each Battery x 8 Batteries		\$ 32,000	\$ -	\$ 32,000	
Inverter/Charger - 4400W, 120/240VAC - Per 10 Systems - \$1,750 Each - Including Freight		\$ 17,500	\$ -	\$ 17,500	
Battery Rack - System Enclosure - Per 10 Systems - \$1,200 Each Rack/Enclosure		\$ 12,000	\$ -	\$ 12,000	
Solar Charge Controller - 100A - 48VDC - Per 10 Systems - \$1,200 Each - Including Freight		\$ 12,000	\$ -	\$ 12,000	
System Manufacturing, Assemblby and Delivery Costs - Per 10 Systems - \$2,000 Each		\$ 20,000	\$ -	\$ 20,000	
Fee Title Acquisition					
		\$ -	\$ -	\$ -	
Easement Acquisition					
		\$ -	\$ -	\$ -	
Professional Services for Acquisition					
		\$ -	\$ -	\$ -	
Printing					
		\$ -	\$ -	\$ -	
Travel expenses in Minnesota					
Applicants - Site Meetings and Interviews		\$ 5,000	\$ -	\$ 5,000	
Other					
Permits and Inspections		\$ 5,000	\$ -	\$ 5,000	
COLUMN TOTAL		\$ 198,500	\$ -	\$ 198,500	
SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT		Status (secured or pending)	Budget	Spent	Balance
Non-State:			\$ -	\$ -	\$ -
State:			\$ -	\$ -	\$ -
In kind:			\$ -	\$ -	\$ -
Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS		Amount legally obligated but not yet spent	Budget	Spent	Balance
			\$ -	\$ -	\$ -

Visual Map. Red area indicates the area the SolarBank Advanced Energy Management Systems will be installed.





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F. Project Manager Qualifications and Organization Description

Jill Thibert is the Sales Manager for Northwest Renewable Energy, she is experienced in renewable energy systems and the manufacturing process of the SolarBank systems. Jill has a vast understanding of the value and potential energy savings and security that can be achieved with the SolarBank systems. In cooperation with SolarBank LLC personnel Jill will work to interview and select specific community facilities, business' and/or residencies that will provide the greatest value to the community and project research.

SolarBank, LLC, is a Minnesota based company that has been through continuous system advances since 1999. Formerly a Juhl Energy subsidiary, SolarBank is led by Dan Juhl and his many years of electrical system knowledge and his understanding of the potential improvements and benefits the SolarBank system can provide.

Additional detail available upon request.