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— Governor Brian Schweitzer

April 2010

## 3,000 Megawatts of Renewable Energy Planned for Montana

Grasslands Renewable Energy LLC (Grasslands) announced on April 8 that it has applied to the Federal Energy Regulatory Commission (FERC) requesting regulatory approvals needed to advance its innovative Wind Spirit Project.

Based in wind-rich Montana, Grasslands has introduced the Wind Spirit Project as an integrated and green approach to harnessing, storing, and transporting clean renewable energy to consumers.

"Our goal is to create a package of renewable energy that can compete on reliability and price, not just with renewables like solar, but with non-renewables such as coal," said Carl Borgquist, President of Grasslands. "By combining the wind resources of the Northern Plains in an integrated solution, we can help fight climate change

and be a leader in America's energy future."

The Wind Spirit Project is designed to collect up to 3,000 megawatts of wind and other renewable energy capacity from geographically diverse areas across the Northern Plains.

An innovative transmission collector system would manage the intermittent wind resource through several energy storage applications, and deliver 1,000 megawatts of consistent power to areas across North America demanding clean, reliable, and renewable energy.

1,000 megawatts of energy is enough electricity to meet the needs of approximately 600,000 typical American homes, according to the Energy Information Administration.

The energy for the Wind Spirit Project would be collected via series of

230KV AC transmission lines and transported to large markets using high voltage AC and DC transmission lines. By combining renewable energy from different geographic areas, the Wind Spirit Project will make renewable energy more efficient and cost effective.

"Montana can and will lead our nation in wind energy development. But until we solve our transmission constraint problems, little of this great resource will be developed. The project proposed by Grasslands Renewable Energy is an important first step in ensuring quality energy jobs for Montanans and clean energy for America," said Governor Brian Schweitzer.

Grasslands' project already has broad support from local, state and federal officials, and, if built, will create hundreds of jobs and pay millions in local and state property taxes.

Learn more about the project and about Grasslands Renewable Energy at <http://www.gre-llc.com/>.



grasslands  
renewable energy

NorthWestern Energy has launched its new **Energy Management Solutions**, a free service that provides technical, business, research and information assistance quickly and easily to the utility's commercial and industrial customers.

The Energy Management Solutions service includes an online library of information with a database of technical business and engineering documents and resources. You can browse through the library topics or use the powerful keyword search engine to find the information you need.

The online portal also includes targeted research tools (for patent searches, MSDS documents, company profile information, workplace posters, and more) and benchmark industry data.

If you can't find exactly what you need in the library, Energy Management Solutions includes a technical, marketing and problem-solving hotline service that NorthWestern Energy also provides free to the utility's customers. There is no usage limit, all questions and answers are held in strict confidence, and answers are typically issued within 24-48 hours.

<http://members.questline.com/Default.aspx?accountID=189>

## Montana Gearing Up for Appliance Rebate Program

If you're looking to buy a new appliance for your home, it might be worth your while to wait a short time, until Montana kicks off its appliance rebate program.

The program was created through the Recovery Act, which is providing Montana with \$928,000 for rebates for residents who buy certain ENERGY STAR qualified residential appliances.

The Montana program is expected to start in late May 2010. The state is currently



in the process of selecting a vendor to administer the program.

Montana is considering the following ENERGY STAR qualified appliance categories and rebate amounts:

- Clothes washers - \$100
- Dishwashers - \$50
- Freezers - \$70
- Refrigerators - \$100

Any Montana resident is eligible for the program, including those who rent their homes. However, a maximum of two appliance categories may be claimed per household. For example, a rebate for a refrigerator and a rebate

for a dishwasher could be claimed.

Purchases made prior to the start of the program eligibility period are not eligible for rebates.

More information, including a list of Frequently Asked Questions, is available on the Montana Department of Environmental Quality website at <http://deq.state.mt.us/Recovery/energy/applianceRebate.mcp>.

Rebate forms will also be available on this website as they become available.

For lists of ENERGY STAR qualified appliances, visit <http://www.energystar.gov/>.

## Mark Your Calendars

Here's a sample of the many upcoming events focusing on energy issues. For a more complete list, see our Events Calendar at <http://montanagreenpower.com/calendar.php>

### [National Electrical Code for Photovoltaics](#)

April 29, 2010

Research Triangle Park, NC

This workshop will provide you with knowledge on the 2005/2008 National Electrical Code (NEC) for designing and installing photovoltaic (PV) systems. The knowledge gained will allow a person familiar with the Code basics to effectively design, install or inspect PV systems for Code compliance.

### [Solar Contractor Dealer Training](#)

May 20-21, 2010

Phoenix, AZ

Take advantage of this two-day, hands-on seminar to learn to become a successful solar energy contractor. The training will focus on solar design and installation.

### [WINDPOWER 2010 Conference & Exhibition](#)

May 23-26, 2010

Dallas, TX

This annual conference is the premier event on wind power. Join other participants to learn all about issues facing the industry, including economics and climate challenges.

## SOLVING THE ENERGY EFFICIENCY PUZZLE

Energy efficiency is the cleanest and cheapest way to meet most of our region's new energy needs and our goals to reduce greenhouse gas pollution. Many organizations throughout the Northwest are already hard at work saving energy. But more can be done.

*Solving the Energy Efficiency Puzzle: Achieving Bigger Savings in the Pacific Northwest*, from the Northwest Energy Coalition, focuses on getting over the hurdles to increased energy efficiency and getting to solutions. The paper addresses six keys to increasing energy savings and creating a cleaner, more prosperous future.

<http://efficiencyworks.org/library-case-studies/puzzle-main/>

## Update

### Question of the Month

#### How can I protect a solar water heater from freezing?

Solar water-heating systems, which use liquids as heat-transfer fluids, need protection from freezing in climates where temperatures fall below 42°F.

Don't rely on a collector's and the piping's (collector loop's) insulation to keep them from freezing. The main purpose of the insulation is to reduce heat loss and increase performance. For protecting the collector and piping from damage due to freezing temperatures, you basically have two options:

- Use an antifreeze solution as the heat-transfer fluid.
- Drain the collector(s) and piping (collector loop), either manually or automatically, when there's a chance the temperature might drop below the liquid's freezing point.

#### *Using an Antifreeze Solution*

Solar water heating systems that use an antifreeze solution (propylene glycol or ethylene glycol) as a heat-transfer fluid have effective freeze protection as long as the proper antifreeze concentration is maintained. Antifreeze fluids degrade over time and normally should be changed every three to five years. Since

these systems are pressurized, it is not practical for the average homeowner to check the condition of the antifreeze solution. If you own this type of system, have a solar heating professional check it periodically.

#### *Draining the Collector and Piping*

Solar water-heating systems that use only water as a heat-transfer fluid are the most vulnerable to freeze damage. *Draindown* or *drain-back* systems typically use a controller to drain the collector loop automatically. Sensors on the collector and storage tank tell the controller when to shut off the circulation pump, to drain the collector loop, and when to start the pump again.

Improper placement or the use of low-quality sensors can lead to their failure to detect freezing conditions. The controller may not drain the system, and expensive freeze damage may occur.

Make sure that the sensors) have been installed according to the manufacturer's recommendations, and check the controller at least once a year to be sure that it is operating correctly.

To ensure that the collector loop drains completely, there should also be a means to prevent a vacuum from forming inside the col-

lector loop as the liquid drains out. Usually an air vent is installed at the highest point in the collector loop. It is a good practice to insulate air vents so that they do not freeze. Also make sure that nothing blocks the airflow into the system when the drain cycle is active.

Collectors and piping must slope properly to allow the water to drain completely. All collectors and piping should have a minimum slope of 0.25 inches per foot.

In integral collector storage or "batch" systems, the collector is also the storage tank. Placing large amounts of insulation around the unglazed parts of the collector and covering the glazing at night or on cloudy days will help to protect the collector from cold temperatures.

However, water in the collector can freeze over extended periods of very cold weather. The collector supply and return pipes are also susceptible to freezing, especially if they run through an unheated space or outside. This can happen even when the pipes are well insulated. It is best to drain the entire system before freezing temperatures occur to avoid any possible freeze damage.

## MREA Seeks Executive Director

The Montana Renewable Energy Association (MREA), a 501 (c) 3 nonprofit organization, seeks a part-time Executive Director to represent the renewable energy system installers and advocates of Montana, grow membership, and do fundraising.

MREA is organized to build markets for renewable energy in Montana, to educate and inform Montanans about the benefits of renewable energy, and to influence policy in favor of renewable energy in Montana. With a variety of corporate, small business,

and individual members, MREA represents renewable energy installers statewide in various venues. MREA works for quality standards, fair practices, trade data collection and proper certification for installers of alternative energy in Montana, and plays a leading role in on the ground work for energy independence through the development of sustainable alternative energy in Montana.

The Executive Director position is part-time to start, with the potential to expand to a full-time position. The Director will be expected to develop programs and funding sources in order to increase MREA activity.

The Director will have a unique opportunity to play a lead role in the industry as this premier trade and advocacy organization continued to grow to meet ever growing demand for clean power and energy independence.

A Bachelor's Degree in Environmental Engineering, Business, Renewable Energy, or Communications is preferred. Applicants should have a proven professional record, and experience with the trades is preferred.

Application deadline is May 15, 2010. The full posting is available at <http://montanagreenpower.com/mrea/pdf/MRE-ED-posting.pdf>.

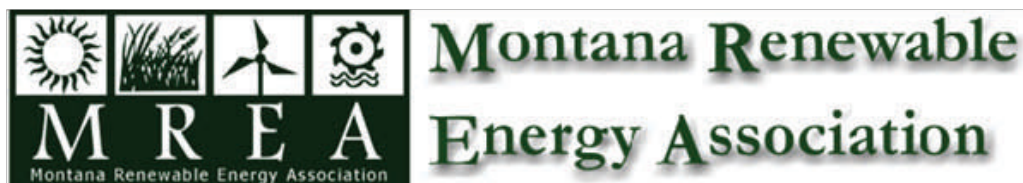
For more information, e-mail [drpe@msn.com](mailto:drpe@msn.com).

**This newsletter is a monthly feature of the Montana Green Power website. The website is funded with Universal System Benefits charges paid by all NorthWestern Energy customers.**



**Visit the website at [www.MontanaGreenPower.com](http://www.MontanaGreenPower.com) for more information on solar, wind, bioenergy, energy efficiency, and other topics.**

**Have a renewable energy tip or some news you want to share? Send it [info@montanagreenpower.com](mailto:info@montanagreenpower.com).**



## Funding Opportunities: AFRI Sustainable Bioenergy Grants

The Department of Agriculture's Agriculture and Food Research Initiative (AFRI) provides competitive grant funds for fundamental and applied research, extension, and education to address food and agricultural sciences.

The AFRI Sustainable Bioenergy Program is

accepting proposals for projects that target the development of regional systems for the sustainable production of bioenergy and biobased products that: contribute significantly to reducing dependence on foreign oil; have net positive social, environmental, and rural economic impacts; and

are compatible with existing agricultural systems.

Key components of the implementation of these grants are integrated research, education, and extension/technology transfer activities.

Sustainable Bioenergy grants will support the start up and growth of a network of Regional Bioenergy CAPs

focusing on five dedicated energy crops that include perennial grasses, energy cane, sorghum, woody biomass, and oil crops (oilseeds and algae).

Letters of intent are due July 9, 2010.

Details are available at [http://nifa.usda.gov/funding/rfas/afri\\_rfa.html](http://nifa.usda.gov/funding/rfas/afri_rfa.html).