

Update

A monthly E-newsletter from Montana Green Power

The Montana Green Power E-newsletter is a monthly feature of the Montana Green Power website: www.montanagreenpower.com. Visit the website for details about all the stories below, a link to "Solar Access" national and international news about renewable energy, plus lots of other green power news. The site is funded with Universal System Benefits charges paid by all NorthWestern Energy customers.

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"As President, I'll invest in renewable energies like wind power, solar power, and the next generation of homegrown biofuels. That's how America is going to free itself from our dependence on foreign oil – not through short-term gimmicks, but through a real, long-term commitment to transform our energy sector." — President-Elect Barack Obama

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NEWS & NOTES

MSU Extension Economists Provide Wind-power Irrigation Tool

Producers considering wind energy to offset irrigation system energy expenses have a new tool to help them analyze their alternatives.

The tool is a spreadsheet developed by Duane Griffith, Montana State University Extension economist, with funding from the Northern Rocky Mountain Resource Conservation and Development Council, a nonprofit partnership of private enterprise and government. The tool allows producers to compare the kilowatt hours of electricity they need to power their irrigation systems to the electricity produced by several wind turbine systems, Griffith said.

The spreadsheet is available free and can be downloaded online at www.montana.edu/softwaredownloads/cropdownloads.html. Read the full news release at www.montana.edu/cpa/news/nwview.php?article=6555.

NorthWestern Energy Purchasing Wind Power for South Dakota Electric Customers

NorthWestern Energy has announced that it has reached an agreement to purchase 25 megawatts (MW) of wind power from a planned Hand County wind farm to serve electric customers in South Dakota.

The agreement with Rolling Thunder 1 Power Partners, which is owned by BP Wind Energy and Clipper Windpower, is the first renewable source of energy to be made available to customers in NorthWestern Energy's South Dakota utility. "Wind power is important to our customers and to the economic development of South Dakota," said Bob Rowe, NorthWestern Energy's president and CEO. "We're excited to begin the process of diversifying our fuel supply mix in South Dakota to include the benefits of clean, renewable energy."

"Power purchase agreements like this one announced by NorthWestern Energy are a necessary component for wind energy development in South Dakota," said South Dakota Public Utilities Commission Chairman Dusty Johnson. "The news that NorthWestern Energy's South Dakota customers may soon be served by renewable energy is great."

Under the 20-year agreement, NorthWestern will purchase 25 MW from the Rolling Thunder 1 Power Partners project that will be built in Hand County south of the town of Ree Heights. The Clipper 2.5 MW Liberty Wind Turbines will be manufactured at a plant in Cedar Rapids, Iowa.

The wind farm is anticipated to begin construction in the first half of 2009, with commercial operation expected by early 2010.

Don't Miss Harvesting Clean Energy

Don't miss the 9th annual Harvesting Clean Energy conference, taking place January 25-27 in Billings. Over 70 leaders – pioneers of the new clean energy economy – will present their practical insights and inspiration to help you initiate profitable new clean energy projects and programs.

Sessions will focus on the practical steps to successful project development and financing – for wind, solar, bioenergy and biofuel, geothermal, efficiency, and microhydro projects – from feasibility and economic assessments, to accessing technical and agency support, to securing financing amidst the current tough finance market.

In these very tough economic times, clean energy offers real opportunities for rural communities to attract new investment, create jobs, and reduce the money draining from local pockets to pay for energy produced elsewhere.

The conference is designed for:

- * Farmers, ranchers and other rural land owners
- * Agricultural organizations
- * Public and private utilities
- * Rural economic development leaders
- * Local, state, federal and tribal officials

For more information, see the conference website at www.harvestcleanenergy.org/.

New Federal Energy Efficiency Credits Available in 2009

New energy efficiency tax credits will allow homeowners to lower both their monthly home energy

bills and their federal income taxes in 2009 as they contend with escalating winter energy prices. Using the tax credits of up to \$500 to make specific energy efficiency home improvements also can make homes more comfortable and reduce air pollution and greenhouse gas emissions, says the Alliance to Save Energy.

The tax credits were enacted as part of the Emergency Economic Stabilization Act of 2008 (H.R. 1424), which the president signed on October 3, 2008. They are largely the same as those that were in effect in 2006 and 2007, with some new criteria for qualifying products and equipment. Details are on the Alliance to Save Energy website at www.ase.org/taxcredits.

Taxpayers who claimed less than the total \$500 credit in 2006 and/or 2007 can claim the unused portion in 2009. However, taxpayers who want to file for part or all of the new energy tax credits should consult their own tax advisors for specific advice. Read more at <http://www.ase.org/content/news/detail/5155>.

EIA Says U.S. Greenhouse Gas Emissions Up 1.4% in 2007

Total U.S. greenhouse gas (GHG) emissions were 7,282 million metric tons carbon dioxide equivalent (MMTCO₂e) in 2007, an increase of 1.4 percent from the 2006 level according to *Emissions of Greenhouse Gases in the United States 2007*, a new report released by the Energy Information Administration (EIA). Since 1990, U.S. GHG emissions have grown at an average annual rate of 0.9 percent.

U.S. GHG emissions per unit of gross domestic product (GDP), or U.S. GHG intensity, fell from 636 metric tons per million 2000 constant dollars of GDP (MMTCO₂e/million dollars GDP) in 2006 to 632 MMTCO₂e/million dollars GDP in 2007, a decline of 0.6 percent. Since 1990, the annual average decline in GHG intensity has been 1.9 percent.

Emissions of carbon dioxide from energy consumption and industrial processes, which had risen at an average annual rate of 1.1 percent per year from 1990 to 2006, increased by 1.3 percent in 2007. Unfavorable weather patterns, where both heating and cooling degree-days were higher in 2007 than 2006, and an increase in the carbon intensity of electricity generation, driven by decreased availability of hydropower, both contributed to higher energy-related carbon dioxide emissions in 2007. Methane emissions increased by 1.9 percent, while nitrous oxide emissions rose by 2.2 percent. Emissions of HFCs, PFCs, and SF₆, a group labeled collectively as "high-GWP gases" because of their high heat-trapping capabilities, increased by 3.3 percent. See the full report at www.eia.doe.gov/oiaf/1605/ggrpt/index.html

Oregon's Largest Dairy Installing Methane Digester

A new \$1 million methane digester is expected to go online in March at Threemile Canyon Farms in Boardman, Oregon. The system is being built by NW Natural and Bonneville Environmental Foundation and utilizes a new design that can be used on both large and small farms and also costs less than traditional systems. The new system will handle about 144,000 pounds of manure each day, converting its methane into usable electricity. Read more at www.msnbc.msn.com/id/28196059/.

Big Three Automakers Announce Commitment to Electric and Fuel Saving Technologies

Detroit's "Big Three" automakers recently went to Washington, D.C., to present their long-term viability plans to Congress, and those plans included significant commitments to fuel-saving and electric vehicle technologies. The automakers are seeking federal loans to help maintain their financial viability through the current economic crisis.

Ford Motor Company unveiled an aggressive plan to electrify its fleet of vehicles, including plans to offer an all-electric van-type vehicle in 2010 for use in commercial fleets, complemented by a battery-powered sedan in 2011. By 2012, the company will bring a family of hybrids, plug-in

hybrids, and battery electric vehicles to market. Ford intends to invest about \$14 billion on fuel-efficient technologies over the next seven years and aims to achieve a 36% improvement in fuel economy for its entire fleet by the 2015 model year. Read Ford's press release at http://media.ford.com/article_display.cfm?article_id=29505.

GM plans to launch predominately fuel-efficient cars and crossovers over the next four years, investing \$2.9 billion in fuel-efficient technologies and alternative fuels during that time period. By 2012, GM will offer 15 hybrid models, and more than half of its fleet will be flex-fuel vehicles, able to run on either gasoline or ethanol-rich E85. Read GM's press release at http://media.gm.com/servlet/GatewayServlet?target=http://image.emerald.gm.com/gmnews/view_monthlyreleasedetail.do?domain=3&docid=50755.

Chrysler LLC notes that for the 2009 model year, 73% of its vehicles will be more fuel efficient than their 2008 models, and the company plans to launch more small, fuel-efficient vehicles in the future. The company's plan also calls for the introduction of the Dodge Ram Hybrid in 2010, along with the company's first electric-drive vehicle. Chrysler also plans to offer three additional electric-drive vehicles by 2013. And like GM, Chrysler plans to make half of its fleet flex-fuel capable by 2012. Read Chrysler's press release at <http://www.media.chrysler.com/newsrelease.do;jsessionid=23389E69667DD0C8F086CBE025E9E9C8?id=8390&mid=1>

Water Heaters Now ENERGY STAR Labeled

The U.S. Department of Energy has announced the availability of ENERGY STAR® residential water heaters. The ENERGY STAR® program now addresses every major residential appliance found in most American homes. Introduction of this product provides significant potential savings to consumers. Water heating represents up to 15.5 percent of national residential energy consumption, the second largest end use of energy in homes, following heating and cooling. Using one of five specified water heating technologies, ENERGY STAR® qualified water heaters can reduce water heating bills from 7.5 percent to as much as 55 percent.

In five years, the new water heater criteria are expected to save Americans consumers \$823 million in utility costs, avoid 4.2 million tons of carbon dioxide emissions, and achieve cumulative energy savings of more than 3.9 billion kilowatt-hours and 270 million therms of natural gas – enough energy to power more than 375,000 homes for a year. Read the full press release at www.energy.gov/news/6820.htm.

FUNDING OPPORTUNITIES

Pilot- and Demonstration-Scale Biorefinery Projects Funding

The Department of Energy has issued a Funding Opportunity Announcement for up to \$200 million over six years (FY 2009 – FY 2014), subject to annual appropriations, to support the development of pilot and demonstration-scale biorefineries including the use of feedstocks such as algae and production of advanced biofuels such as bio-butanol, green gasoline and other innovative biofuels. The projects will support the Administration's comprehensive energy strategy of increasing the nation's energy, economic and national security by reducing our reliance on foreign oil, and reducing greenhouse gases. While supporting deployment and increased biofuels usage, DOE continues to focus on research and development of advanced biofuels technologies.

"This funding opportunity will look for the most promising technologies that can advance the potential of renewable biomass as a resource for second generation transportation biofuels," Acting Assistant Secretary for Energy Efficiency and Renewable Energy John F. Mizroch said. "The Department of Energy will select breakthrough integrated biorefinery projects that have technical and economic performance data at the bench or pilot scale to prove they are ready to move a step closer toward commercial readiness."

The FOA has two topic areas for biorefinery development:

- Pilot-scale, minimum throughput of one dry tonne of feedstock per day with a minimum non-federal cost-share at 30 percent.
- Demonstration-scale minimum throughput of 50 dry tonnes of feedstock per day, with a minimum non-federal cost-share at 50 percent.

Mandatory letters of intent are due February, 20, 2009, and completed applications are due April 30, 2009. The complete FOA (number DE-PS36-09GO99038), can be viewed at www.grants.gov. Projects are expected to begin in Fiscal Year 2009 and continue through Fiscal Year 2014. Funding is subject to annual Congressional appropriations.

QUESTION OF THE WEEK

Q: Will a photovoltaic system on my house reduce my power bills?

A: Yes, but the amount of savings depends on the size of the system and the amount of solar potential at the site, especially if efficiency measures are included. Adding insulation, changing to compact fluorescent lights, and replacing old appliances with high-efficiency models can dramatically lower your power bills. Many customers are able to watch their electricity meters run backwards as their homes deliver electricity back to the utility system at times when their own energy needs are low.



For more information on ways to increase your home's energy efficiency, see:

- Appliance Calculator
www.northwestern.apogee.net/homesuite/calcs/appcalc/
- Consumer Guide to Home Energy Savings
<http://aceee.org/consumerguide/>
- Improve Your Home's Energy Efficiency with ENERGY STAR
www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_index

CASE STUDY OF THE MONTH: Montana State University

By Michael Becker, MSU News Service

BOZEMAN – Montana State University is now home to a working wind turbine, thanks to a crew of students, faculty, staff and volunteers who hoisted the 50-foot-tall tower into place.



The turbine stands in a field just off Fifth Avenue on the southeast side of MSU. The crew worked through snow and cold weather for three days to install the turbine, said Robb Larson, who heads MSU's Wind Applications Center and was in charge of the installation.

"This site, although not the greatest wind resource, is the best possible location for the turbine," Larson said, pointing at the engineering buildings only two blocks away. With the turbine so close by, students will be able visit and conduct research at the site, he said.

The turbine is part of the Montana Wind for Schools program, which will install four similar turbines at schools in Cascade,

Fairfield, Livingston and Stanford in the coming weeks. Students will use the turbines in lessons about alternative energy.

The MSU turbine and its four siblings were funded by about \$60,000 in grants from Northwestern Energy and the Montana Department of Environmental Quality.

The turbines are meant to get people in rural towns and at MSU talking and learning about wind energy, said Sean Micken, project coordinator for Western Community Energy, the company contracted to install the Wind for Schools turbines in Montana.

"It's extremely important to engage young people and rural communities in discussions about energy because those are the people who will really be impacted by wind development," Micken said.

The Department of Energy (DOE) expects wind to provide 20 percent of the country's electricity by 2030. The department estimates that, between now and then, Montana's wind industry could increase its capacity from 166 to 10,000 megawatts – enough to power about 2.5 million homes.

DOE chose MSU to be the home of Montana's new Wind Applications Center, which helps teach the public about wind energy and brings wind topics into engineering classes for MSU students.

Cole Young, a senior majoring in mechanical engineering technology, helped install the turbine on Monday. The Ekalaka, Mont., native is already enrolled in Larson's alternative energy class and said the turbine will also be the focus of his capstone project: a system to monitor the weather at the turbine site and make that information available to the public via the Internet.

The turbine stands as tall as a light pole. Its 12-foot diameter blades operate at 45 decibels – about as loud as someone whispering. In all, the turbine will produce 1.9 kilowatts, "enough to run a hair dryer, toaster and microwave, but not at the same time... and on a windy day," Larson said.

Larson knows that the turbine will not put much of a dent in the university's power bill – some buildings use light bulbs that need 500 watts, a third of what the turbine can generate – but he hopes that the machine will get more people talking about wind and other alternate energy sources.

Micken agreed that getting people to see that wind power is a real, working option is the most important step right now.

"It's not some futuristic dream," Micken said. "It's magnets and copper, not rocket science."