

2009-10 Energy Policy for Montana

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Part V of IX "Promoting alternative energy systems"

Governor Schweitzer's Energy Policy statement on alternative energy:

"Montana citizens want energy development that primarily focuses on renewable energy sources and clean energy technologies that are compatible with our way of life. In addition to being renewable, wind generation, hydro, ethanol, and biodiesel reduce or eliminate carbon dioxide and other pollutants common to conventional energy projects. Developing these resources will play a vital role in helping the nation meet the target of 25 percent renewable energy by the year 2025. Our agricultural and other resource strengths mandate that the State of Montana aggressively promote the development of wind generation, ethanol, biodiesel, biomass and other renewable forms of energy. Montana can and should focus its efforts on new clean energy technologies and renewable forms of energy by playing a catalytic role in bringing private and public resources together to create energy development projects."

ETIC Energy Policy statement: (This is a DRAFT statement that has not received ETIC approval. It is meant ONLY as a starting point for ETIC discussion)

Findings:

Montana has an abundance of alternative energy sources, ranging from wind to solar. By approving a renewable portfolio standard, Montana has sent a signal to utilities and energy developers promoting the development of projects that bring renewable, alternative energy to the state. "The Montana Renewable Power Production and Rural Economic Development Act" requires that public utilities and competitive electricity suppliers procure a minimum of 15 percent from renewables starting January 1, 2015. Cooperative utilities with 5,000 or more customers are responsible for implementing their own renewable standards.

Alternative energy is in many cases more expensive than conventional fossil-fuel sources. Renewable energy, however, increases energy diversity, energy independence and security, and has fewer environmental impacts in terms of pollution. Small-scale distributed generation can produce electricity near the load and reduce transmission and distribution costs. Montana has tax incentives in place promote both large-scale renewable energy and distributed energy opportunities. Alternative energy systems also can provide economic development in rural Montana. The manufacturing of renewable energy equipment in Montana also can lead to new industries.

ETIC recommendations: ?

Recommendations (Examples from other state energy policies):

Idaho (During the 2006 session, the Idaho Legislature passed House Concurrent Resolution No. 62, directing the Legislative Council Interim Committee on Energy, Environment and Technology to develop an integrated state energy plan. The Energy Plan's principal focus is boosting the acquisition of in-state energy conservation and renewable energy resources. In 2005, 1 percent of Idaho's electricity supply came from non-hydro renewable energy sources, and 8 percent is expected by 2015, based on current Idaho utility resource plans.)

Idaho recommendations and policies:

- It is Idaho policy to promote the production and use of cost effective and environmentally sound alternative fuels. Conservation and renewables diversify the state's resource base, reducing its dependence on imported fossil fuels and providing insurance against increasing fuel prices.
- In state resources that are available to Idaho utilities are largely renewable resources such as geothermal, wind, hydro, and biomass.
- Idaho's Residential Alternative Energy Tax Deduction already provides a limited income tax incentive for households to invest in renewable resources. The Committee recommends that this incentive be broadened to include additional technologies and extended to Idaho businesses as well as households.
- The Legislature established the Idaho Energy Resources Authority (IERA) in 2005 for the purpose of promoting transmission, generation and renewable energy development in the state and the region. Idaho should provide a credit backstop to enable the IERA to provide low-cost financing for customer-owned renewable generation and combined heat and power facilities.
- The Idaho Public Utility Commission (PUC) should establish and periodically update an avoided cost benchmark for each utility to be used in evaluating the cost effectiveness of conservation and renewable resource investments and in calculating payments to Qualifying Facilities under the Public Utility Regulatory Policy Act (PURPA). The Idaho PUC should administer its responsibilities under PURPA in a way that encourages development of customer-owned renewable generation.
- Idaho utilities should offer voluntary "green pricing" programs that allow customers to support environmentally preferred and renewable energy resources.
- The Idaho PUC should establish appropriate shareholder incentives for investments in Idaho renewable resources by investor owned utilities. Shareholder incentives may include, but are not limited to: increased return on investments in renewable resources located in Idaho; and a share of the net societal benefits attributable to a renewable energy purchase.
- The Idaho PUC should establish uniform policies for interconnection and net metering that promote investment in customer-owned renewable energy facilities.
- The committee notes that the PUC and Idaho's utilities have already begun to increase their efforts to acquire energy conservation and renewable energy resources, and encourages them to take additional steps in this direction.
- The committee finds that increased investments in local renewable energy resources such as wind energy and biofuels would also provide economic benefits, particularly in rural areas of the state, while representing an environmentally friendly source of energy.

Iowa ("Charting our own course: Today's challenges, tomorrow's opportunities" -- Iowa Energy Independence Plan produced by the Office of Energy Independence in December 2008. The Iowa Power Fund Board, which includes legislative representatives, also review the plan. Iowa requires its two investor-owned utilities to own or to contract for a combined total of 105 megawatts of renewable generating capacity and associated energy production, which can include small hydropower facilities. The Iowa Utilities Board has allocated the 105 megawatts between the two utilities based on each utility's percentage of their combined estimated Iowa

retail peak demand in 1990.¹⁾

Iowa recommendations and policies:

- Iowa should promote and ensure long-term growth of large utility scale wind and small-scale distributed generation.
- Iowa should promote the development of an environmentally sound biomass industry in Iowa.
- In 2007, Governor Chet Culver and Lieutenant Governor Patty Judge established a vision for Iowa as a national and world leader in energy efficiency, renewable energy, and biofuels. This vision culminated in House File 918, which was passed by the Iowa General Assembly and which created the Office of Energy Independence and the Iowa Power Fund. The Office of Energy Independence produced the report "Charting our Own Course" that is quoted in this document.
- Iowa's domestic, renewable energy production growth has been robust over the last ten years. Iowa is currently ranked third in wind power in the United States behind Texas and California. Iowa has positioned itself as a leader in wind power because of its early adoption of Renewable Portfolio Standards (RPS), development of necessary infrastructure and facilities, and strong public leadership.
- Though the majority of renewable energy capacity created in Iowa has been comprised of large-scale installations, attention should be given to small-scale distributed generation initiatives. Small-scale distributed generation from renewable resources frequently produces electricity near the load, thus reducing transmission and distribution costs and related energy losses.

Background

Alternative energy systems are defined in 15-32-102, MCA as "the generation system or equipment used to convert energy sources into usable sources." Those sources include "geothermal systems, low emission wood or biomass, wind, photovoltaic and small hydropower plants (under 1 megawatt), fuel cells that do not require hydrocarbon fuel, and other recognized nonfossil forms of energy generation". Montana code also defines an "alternative renewable energy source" in 15-6-225, MCA in much the same manner. For the purposes of implementing Montana's Renewable Portfolio Standard (RPS), the "Renewable Power Production and Rural Economic Development Act" enacted by the 2005 Legislature, the term "eligible renewable resource" is used in 69-3-2003, MCA. The definition is similar to the others, with the exception of hydroelectric projects. To be used toward Montana's RPS only water power that does not require a new appropriation, diversion, or impoundment of water and that has a nameplate rating of 10 megawatts or less or is installed at an existing reservoir or on an existing irrigation system that does not have hydroelectric generation as of April 16, 2009, and has a nameplate capacity of 15 megawatts or less qualifies toward the requirements of the Act.

Based on those definitions, Montana has a wealth of alternative energy sources. The number of alternative energy systems that put those sources to work also continues to increase in Montana.

Montana has increased wind energy generation from 1 megawatt in 2004 to just over 270 megawatts in 2009. In August 2009 a Harvard study listed Montana in a tie with Kansas,

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http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=IA01R&state=IA&CurrentPageID=1

second only to Texas, as having the greatest wind power potential in the nation. The energy policy background report on "Wind Integration" discusses in more detail Montana's wind resources, so this report focuses on other alternative energy sources and systems.

The Montana Geothermal Program was established by Sage Resources of Missoula, the U.S. Department of Energy and the State of Montana in 2005. The program works to identify and update geothermal information for Montana. A program website provides access to regional, site-specific, and general geothermal energy information to assist in development.² The program notes that Montana has the potential to develop significant new sources of geothermal energy, with more than 50 geothermal areas and at least 15 high-temperature sites. High-temperature areas in western Montana are located near Helena, Bozeman, Ennis, Butte, Boulder, and White Sulphur Springs. There are seven locations with surface temperatures above 149 degrees Fahrenheit, plus 20 locations with temperatures above 110 degrees Fahrenheit. The estimated deep-reservoir temperatures for some Montana sites are over 350 degrees Fahrenheit.³ In Montana geothermal is being used for district heating systems, greenhouses, and aquaculture. Ponds near Boulder, for example, use geothermal water to grow fish. A commercial greenhouse near Butte uses geothermal resources to produce tomatoes and roses.

Municipalities also are investigating the use of municipal solid waste as a source for electricity. "Of the 2,300 or so currently operating or recently closed municipal solid waste landfills in the United States, more than 450 have landfill gas utilization projects. We estimate that approximately 520 additional landfills could turn their gas into energy, producing enough electricity to power nearly 700,000 homes," according to the Environmental Protection Agency.⁴ In Montana Flathead Electric Cooperative is capturing methane at the Flathead County landfill to fuel a 1.6-megawatt power plant. It is the first landfill gas-to-energy project in Montana.

Montana also has abundant solar resources that can be used in residential and commercial buildings, and in farming and ranching. Eastern Montana receives an annual average of 5 hours of full sun; Western Montana receives an annual average of 4.2 hours.⁵ The National Center for Appropriate Technology based in Butte has created brochures for residential homeowners as well as designers and builders interested in learning more about solar options in Montana. A variety of small

How much electricity (kWh/Yr) will a PV system produce?

	1-kW	2-kW	3-kW	4-kW	5-kW
Missoula	1428	2857	4285	5713	7142
Great Falls	1651	3302	4953	6603	8254
Billings	1689	3378	5067	6756	8445
Helena	1590	3180	4770	6359	7949
Kalispell	1403	2805	4208	5611	7013

Source: National Center for Appropriate Technology

solar projects are operating in Montana. In September 2009, for example, 12 solar panels were added to the Great Falls High School campus to power a bank of computers. A federal grant is

² <http://deq.mt.gov/energy/geothermal/index.asp>

³ <http://www.deq.state.mt.us/energy/geothermal/sites.asp>

⁴ <http://www.epa.gov/lmop/benefits.htm>

⁵ <http://www.montanagreenpower.com/solar/index.php>

funding the project.⁶

Montana developers are also actively pursuing commercial development of biomass as an energy option. Woody biomass users in Montana consume about 2.2 to 2.7 million dry tons of woody biomass a year, largely using mill residue to fuel the supply. Biomass users include 10 bark or wood pellet plants, Fuels for Schools facilities, two board facilities, and one pulp mill. A single facility, Smurfit-Stone Container Corp., accounts for more than one-half of the total annual biomass consumption in Montana.⁷ The Montana Fuels for Schools and Beyond Program promotes the use of forest biomass waste for energy in public buildings -- public schools in particular. It is a collaboration between the Montana Department of Natural Resources and Conservation, the U.S. Forest Service, and Montana Resource Conservation and Development Areas.

The 2009 Legislature approved a \$475,000 appropriation in House Bill No. 645, the Montana Reinvestment Act, to the Department of Commerce to conduct a "biomass energy study". The funding may be used to fund feasibility studies, installation of biomass energy boilers, or biomass program staff within the Department of Natural Resources and Conservation in order to increase biomass utilization. In late June, Governor Brian Schweitzer announced that the money would be made available in the form of grants for biomass energy feasibility studies through the Department of Commerce. The 2009-2010 Environmental Quality Council is dedicating a significant amount of its time to a study of biomass, based on House Joint Resolution No. 1, approved by the 2009 Legislature.

Montana's RPS requires public utilities operating in Montana to obtain 15 percent of their retail electricity sales from eligible renewable resources by 2015. The current renewable percentage of NorthWestern's electric supply in Montana is a little bit more than 8 percent, primarily from wind generation. In 2009 the renewable percentage of Montana Dakota Utilities (MDU) electric supply in Montana is 9.5 percent.

There are additional programs in place to encourage the use of alternative energy systems. Customers of regulated utilities generating their own electricity using (but not limited to) wind, solar, geothermal, hydro, biomass, or fuel cells can participate in net metering. Net metering is available on the NorthWestern Energy and the Montana-Dakota Utility systems. Net metering was the subject of legislative discussions in 2007. Some rural electric cooperatives also allow net metering. NorthWestern Energy is required to offer customers the option of purchasing electricity generated by certified, environmentally-preferred resources that include, but are not limited to, wind, solar, geothermal, and biomass. The Energy Promotion and Development Division was created in 2007 to help implement Governor Schweitzer's commitment to "clean and green" energy development in Montana. The division has worked in the areas of geothermal and wind.

Federal law requires all state-regulated utilities to purchase qualifying facility power at either a freely-negotiated rate, or at a rate set by the PSC. In Montana, there are about 25 qualifying facilities with the collective capacity to produce up to 120 megawatts of electricity annually. Qualifying facilities include facilities that produce electricity using biomass, waste, water, wind, or other renewable resource, or any combination of those sources.

⁶ "Great Falls High gets greener with solar panels," Great Falls Tribune, Kristen Cates, September 17, 2009.

⁷ "An Assessment of Forest-based Woody Biomass, Supply and Use in Montana," Todd Morgan, Bureau of Business and Economic Research, University of Montana, April 2009, page 18.

There are a number of tax incentives for alternative energy as well. Those are noted later in this report. Montana, for example, provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed \$500. (15-32-201, MCA). In FY 2007, 24,866 taxpayers took about \$8 million in credits. Montana provides for an investment tax credit to any individual, corporation, partnership, or small business corporation that makes an investment of \$5,000 or more for a commercial system or net metering system that generates electricity by means of an alternative renewable resource. With certain limitations, a credit against individual or corporate income tax of up to 35% of the eligible costs of the system may be taken as a credit against taxes on taxable net income produced by certain specified activities related to alternative energy. (15-32-402, MCA). During FY 2008, eight individual taxpayers claimed this credit for a total of \$8,315.

Montana also provides loans to individuals, small businesses, units of local government, units of the university system, and nonprofit organizations to install alternative energy systems that generate energy for their own use or for capital investments for energy conservation purposes when done in conjunction with alternative energy systems. Loans up to a maximum of \$40,000 must be repaid within 10 years. The program is funded by air quality penalties collected by the Department of Environmental Quality (DEQ), and the DEQ administers the program. If loans are made by the DEQ using stimulus money received through the American Recovery and Reinvestment Act (ARRA) of 2009, loans of up to \$100,000, with a 15 year payback also are now available.

To date the loan program has received 99 applications and 69 projects have been financed for a total of about \$1.4 million. There are 55 active loans with an outstanding loan portfolio balance of \$1.2 million. Applications in 2008 represented the broadest range of technologies including solar electric, solar hot water and solar space heating systems, as well as wind, biomass, geothermal heat pumps, an anaerobic digester, and a small hydropower system. Four loans included energy conservation measures.⁸

The 2009 Legislature also appropriated \$1 million in ARRA money for grants for renewable energy development in Montana. The grants are being directed toward projects that have completed research and are in production, but are still new or developing technologies in Montana. The grant amount may be up to \$500,000 for a single application. As part of the renewable energy grant and loan program, the DEQ also shares information with consumers and businesses about the tax benefits of installing renewable systems. Technical assistance is also provided to small-scale (less than 100 kW) systems using solar, wind, fuel cells, micro-turbines, and geothermal resources for self-generation, net metering, or water and space heating.

Alternative Energy Taxation and Incentives

15-6-157, MCA taxation

Wind generation facilities with a nameplate capacity greater than 1 megawatt, geothermal facilities, biomass gasification facilities, and biomass generation facilities up to 25 megawatts are generally class fourteen property taxed at 3 percent of market value.

15-24-3004, MCA impact fees.

Owners and operators of wind generation facilities for commercial purposes are subject to an initial local government and local school impact fee for the first 3 years after construction begins. The fee may not exceed .5 percent of the total construction cost.

⁸ Alternative Energy Loan Program Outcomes Report, Draft, October 2009.

15-32-201, MCA tax credit

Provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed \$500.

15-6-224, MCA tax exemption

Provides for the appraised value of a capital investment in a nonfossil form of energy generation to be exempt from taxation for 10 years on \$20,000 in a single-family residential dwelling or \$100,000 in a multifamily residential dwelling or nonresidential structure.

15-32-402, MCA tax credit

Provides for an investment tax credit to any individual, corporation, partnership, or small business corporation that makes an investment of \$5,000 or more for a commercial system or net metering system that generates electricity by means of an alternative renewable resource. With certain limitations, a credit against individual or corporate income tax of up to 35 percent of the eligible costs of the system may be taken as a credit against taxes on taxable net income produced by certain specified activities related to alternative energy. If this tax credit is claimed, other related tax credits and property tax reductions may not apply.

15-6-225, MCA property tax exemption

New generating facilities built in Montana with a nameplate capacity of less than 1 megawatt and using alternative renewable energy sources are exempt from property taxes for 5 years after start of operation.

Title 15, chapter 24, part 14, property tax reduction

Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50 percent taxable value during the first 5 years after the construction permit is issued.

75-25-101, MCA alternative energy revolving loan program

Provides loans to individuals, small businesses, units of local government, units of the university system, and nonprofit organizations to install alternative energy systems that generate energy for their own use or for capital investments for energy conservation purposes when done in conjunction with alternative energy systems.

Title 69, chapter 8, net metering

Public utilities must allow net metering if a customer chooses to generate his or her own energy using solar, wind, or hydropower to offset customer requirements for electricity. Its generating capacity can't be greater than 50 kilowatts. Some cooperatives also offer net metering.

Title 69, chapter 3, part 20, RPS

"The Montana Renewable Power Production and Rural Economic Development Act" requires that public utilities and competitive electricity suppliers procure a minimum of 5 percent of their retail sales from eligible renewable resources through 2009, 10 percent between 2010 and 2014, and 15 percent starting January 1, 2015. Cooperative utilities with 5,000 or more customers are responsible for implementing their own renewable standards.

Title 90, chapter 4, part 12, bonding

"The Montana Clean Renewable Energy Bond Act" authorizes Montana local governmental bodies and tribal governments to participate as qualified issuers or qualified borrowers under the federal Energy Tax Incentives Act of 2005 to better access financial investments for community renewable energy projects or alternative renewable energy sources.

Title 15, chapter 24, part 31, "Clean and Green"

The "Jobs and Energy Development Incentives Act" approved during the 2007 May Special Session, provides tax incentives for development of clean and renewable energy.

" Public Utility Regulatory Policies Act of 1978", or "PURPA" 16 U.S.C.A 824(a)(3)

Establishes requirements for the purchases and sales of electric power between

qualifying small power production facilities and electric utilities under the regulation of the PSC. See also federal rules implementing PURPA (18 CFR 292.101 et seq.) and state laws concerning small power production facilities (mini- "PURPA").(Title 69, chapter 3, part 6, MCA)

Title 75, chapter 20, MCA, "Montana Major Facility Siting Act"

Administered by DEQ, requires that any use of geothermal resources capable of producing power equivalent to 50 megawatts go through a siting certification process.

75-20-1001, MCA, Geothermal exploration

Directs the Board of Environmental Review to regulate geothermal exploration.

15-32-115, MCA, Geothermal tax credit

Provides for a credit against individual income tax liability for taxpayers constructing a new residence who install a geothermal system (heat pump) in the taxpayer's principal dwelling or in a residence constructed by the taxpayer. A credit of up to \$1,500 against the taxpayer's income tax liability is authorized.

90-3-1301, Geothermal research

Allows for geothermal research through the Montana Bureau of Mines and Geology. Utilities interested in developing geothermal sites must contribute to the research. Each interim the Bureau also updates the ETIC on research and funding efforts.

Title 70, chapter 17, part 3, MCA, Easements

Imposes certain conditions on easements created for the purpose of ensuring the flow of wind across real property in connection with the generation of wind energy or for the purpose of ensuring the unencumbered exposure of solar energy devices across real property in connection with the generation of solar energy.