

A Citizen's Guide to

M ntana Energy Law

An Overview of Laws Related to
Energy Generation, Transmission, and Consumption in Montana

2011

Members and Staff

Energy and Telecommunications Interim Committee

Senate Members

Sen. Alan Olson, Chair
Sen. Verdell Jackson
Sen. Jim Keane
Sen. Cliff Larsen

House Members

Rep. Tony Belcourt, Vice Chair
Rep. Robyn Driscoll
Rep. Harry Klock
Rep. Austin Knudsen

Staff

Sonja Nowakowski, Research Analyst; Todd Everts, Staff Attorney; Dawn Field, Secretary; Maureen Theisen, Research and Publications

Legislative Services Division
Energy and Telecommunications Interim Committee
State Capitol
PO Box 201706
Helena, MT 59620-1706
(406) 444-3064
<http://leg.mt.gov/etic>

Table of Contents

Acknowledgments	i
Disclaimer	i
Foreword	iii
Introduction	1
Chapter 1: Montana's Electric Industry Restructuring and Reintegration Laws	8
Chapter 2: Montana's Energy Policy	12
Chapter 3: Generating Electricity in Montana	14
Physical	14
Regulation	16
Taxation	20
Incentives	22
Chapter 4: Transmission and Distribution	26
Physical	26
Regulation	29
Taxation	33
Incentives	35
Chapter 5: Usage	38
Physical	38
Regulation	40
Incentives	42
Chapter 6: Customer Protection and Assistance	47
Consumer Counsel	47
Low-Income Assistance	48
 Appendices	
Appendix A: Laws that Regulate, Tax, and Provide Incentives by Fuel Source	51
Appendix B: State Energy Information Resources	74

Glossary of Electricity Terms 76

Figures and Tables

Table 1: Electricity Players in Montana 2
Table 2: Residential Average Monthly Bill 39

Figure 1: Air Quality Permitting Process 19
Figure 2: Electrical Energy Tax 21
Figure 3: Wholesale Energy Tax 22
Figure 4: Distribution Areas Served by Montana Electric
Cooperatives. 28
Figure 5: Electricity Distribution Utilities Regulated by PSC . 29
Figure 6: Western Interconnection Transmission System .. 30
Figure 7: Typical Wattages for Various Household Appliances
..... 38

Acknowledgments

An Electricity Law Handbook was first developed by the legislative Environmental Quality Council in 2002 and was revised in 2004, 2008, and 2010. The Energy and Telecommunications Interim Committee oversees regular updates to the document in an effort to help Montana citizens better understand our electricity laws and the most recent changes to those laws. During the 2011-2012 interim, the ETIC has overseen a reorganization of the Electricity Law Handbook. The result is A Citizen's Guide to Montana Energy Law. The information contained in this guide is much the same as that contained in An Electricity Law Handbook. However, it has been updated, reorganized, and redesigned. It is the result of input and review from legislators, consumers, public interest groups, industry representatives, state regulators, and interested citizens.

Disclaimer

The Citizen's Guide to Montana Energy Law should not be used as a legal reference. This guide was developed to serve solely as an educational tool. When in doubt, always refer to the applicable statutes, case law, or the agency's administrative rules.

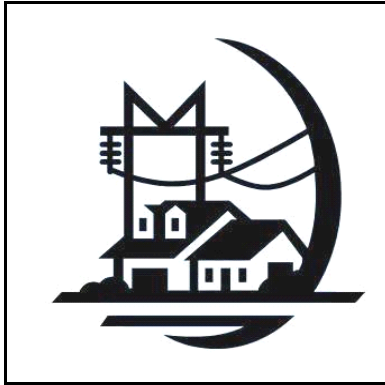
Foreword

Electricity. Shockingly, we can't do without it. It has become a necessity in our daily lives. We take it for granted until we receive our monthly power bill. Most of us don't think about where our electricity comes from or who delivers it to us unless the power goes out. However, Montana's electricity laws, especially those concerning deregulation and partial reregulation of our energy supply and environmental considerations regarding electricity generation, have evoked a lot of public attention and scrutiny over the past decade.

The morass of laws governing electricity generation, transmission, distribution, conservation, price, and consumption is complicated, sometimes conflicting, very voluminous, full of technical jargon, and downright tough to understand. We continually receive countless inquiries from Montana legislators, citizens, and businesses seeking understandable and usable information on our electricity laws.

The purpose of this guide is to explain in a straightforward, easy-to-understand manner how electricity law works in Montana and, more important, how those laws impact Montana's consumers. Our goal is to encourage thoughtful, effective involvement in Montana's electricity law development and implementation.

Energy and Telecommunications Interim Committee, 2011
Sonja Nowakowski and Todd Everts



Introduction

Montanans, like most Americans, do not stop to think about the electricity that powers our computers, lights our houses, washes our clothes, cooks our meals, heats our houses, powers the tools that we use in our jobs, directs traffic around town, and profoundly touches all facets of our lives.

Electricity is easy to take for granted because we do not see it, smell it, taste it, or feel it. Electricity is just there at our beck and call. What would life be like without electricity? The only time that we don't seem to take electricity for granted is when we pay our power bills. So what is electricity? And what are the laws that guide the generation, transmission, and consumption of electricity in Montana?

There are the physical laws governing electricity, and there are also statutory, administrative, and judicial laws that govern electricity. Given the large infrastructure involved in delivering such an essential service, it is no surprise that electricity law covers many different and very diverse activities that either directly or indirectly involve electricity.

Broadly speaking, physical laws governing electricity can be organized into three areas:

- Generation
- Transmission and Distribution
- Usage

Broadly speaking, electricity statutory law can be organized into three areas:

- Regulation
- Taxation
- Incentives

This guide's primary focus is on Montana state government electricity law. When possible, this guide will explain the interrelationships between federal, regional, state, and local laws and the impact that those laws have on Montanans.

To understand electricity law in Montana, it is important to be aware of the electricity players in Montana. This guide explains in more detail the electricity players in Montana, but a quick overview of all the players is helpful here. **Table 1** summarizes who the electricity players are in Montana and the role that they play in electricity law.

Table 1. Electricity Players in Montana	
Type of electricity player	Electricity role and function
GOVERNMENTAL ENTITIES	
State Government	
⇒ Montana State Legislature	Sets state electricity policy by passing legislation. The 2003 Legislature established the Energy and Telecommunications Interim Committee to provide legislative oversight over the Public Service Commission and to provide policy direction on energy and telecommunications issues.
⇒ Montana Governor's Office	Provides direction on implementation of state policies regarding electricity and energy development. Montana's Northwest Power and Conservation Council members and the Economic Development Office are entities attached to the Governor's Office that are heavily involved in electricity and energy policy issues.
⇒ Montana Public Service Commission (PSC)	The PSC has broad regulatory, supervisory, and investigative powers over investor-owned public utilities. The PSC can investigate the management of the business of all public utilities. PSC jurisdiction includes customer service and reliability standards and rates charged to retail electricity customers.

Table 1. Electricity Players in Montana	
Type of electricity player	Electricity role and function
⇒ Montana Consumer Counsel	Represents Montana consumers in electric utility proceedings before the Public Service Commission.
⇒ Montana Department of Environmental Quality	Issues air and water permits for electrical generation facilities and regulates those facilities; conducts Montana Environmental Policy Act reviews; is responsible for the Montana Major Facility Siting Act review process for certain transmission facilities; provides assistance with energy efficiency projects; maintains energy statistics.
⇒ Montana Department of Natural Resources and Conservation (DNRC)	Issues water right permits for electrical generation facilities and other energy developments; manages state trust lands that have mineral rights, including coal, oil, and natural gas; <u>QUALIFYING FACILITY</u> ¹ owner.
⇒ Montana Department of Public Health and Human Services	Operates the low-income energy assistance program.
⇒ Montana Department of Commerce Board of Investments	Offers low-interest loans for energy generation and transmission projects.
⇒ Montana Department of Commerce Energy Promotion and Development Division	Facilitates the planning, development, analysis, and coordination of energy infrastructure allowing for the development of Montana's energy resources.
⇒ Montana District Courts and Supreme Court	In response to lawsuits, judicially reviews and provides legal opinions on state electricity law issues in Montana.
<i>Federal Government</i>	
⇒ United States Congress	Sets federal electricity policy by passing federal legislation.

¹Terms that are capitalized and underlined are further defined in the Glossary at the end of the publication.

Table 1. Electricity Players in Montana

Type of electricity player	Electricity role and function
⇒ <u>FEDERAL ENERGY REGULATORY COMMISSION (FERC)</u>	Regulates transmission and wholesale sales of electricity in interstate commerce and licenses hydroelectric projects.
⇒ Bonneville Power Administration (BPA)	Is a not-for-profit federal electric utility that markets more than one-third of the electricity consumed in the Pacific Northwest. The power is sold to more than 140 Northwest utilities. BPA operates a high-voltage transmission grid comprising more than 15,000 miles of lines and associated substations in Montana, Washington, Oregon, and Idaho.
⇒ Northwest Power and Conservation Council	Created by federal legislation to give the citizens of Idaho, Montana, Oregon, and Washington a stronger voice in determining the future of key resources common to all four states—namely, the electricity generated at and the fish and wildlife affected by the Columbia River Basin hydroelectric dams.
⇒ Regional Transmission Organizations (RTO)	Formed under a FERC order to manage the transmission of electricity in specific regions of the United States.
⇒ Western Area Power Administration (WAPA)	Markets and delivers reliable, cost-based hydroelectric power and related services within a 15-state region of the central and western U.S. In Montana, WAPA generates electricity from Canyon Ferry, Fort Peck, and Yellowtail hydrofacilities.
⇒ U.S. Federal District Courts, Court of Appeals	If initiated through a lawsuit, judicially reviews and provides legal opinions on federal electricity law issues.
<i>Local Government</i>	
⇒ Montana cities, towns, and counties	Can impact electrical generation through local taxation and zoning. Local governments are also consumers of electricity. One municipality (the city of Troy) is its own <u>PUBLIC UTILITY</u> . Great Falls, through Electric City Power, Inc., is an active supplier.

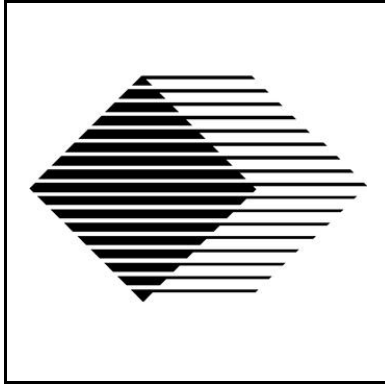
Table 1. Electricity Players in Montana

Type of electricity player	Electricity role and function
ELECTRIC UTILITIES	
⇒ Montana Electric Cooperative Utilities	There are 25 not-for-profit electric distribution cooperatives in the State of Montana that are locally owned and operated by their cooperative members, with 216,846 meters served. The elected board of each cooperative makes electricity policy and pricing decisions. Electric cooperatives are not regulated by the Montana Public Service Commission.
⇒ NorthWestern Energy LLC	An investor-owned public utility that provides electricity transmission, distribution, and supply services. They serve 339,938 electric customers and 185,980 natural gas customers. A customer is considered a meter, so some homes may have more than one. This utility is regulated by the Public Service Commission.
⇒ Montana-Dakota Utilities Co.	An investor-owned public utility that provides electricity supply, transmission, and distribution services to 24,320 customers (meters) in Montana. This utility is regulated by the Public Service Commission.
⇒ City of Troy Municipal Electric Utility	Montana's only municipal electric utility. Rate and policy decisions are made by the city's governing body.

Table 1. Electricity Players in Montana	
Type of electricity player	Electricity role and function
ELECTRICITY SUPPLIERS THAT PROVIDE ELECTRICITY TO MONTANANS	
⇒ PPL Montana	An exempt wholesale generator in Montana that owns and operates 11 hydroelectric plants along the Missouri River, the Flathead River, the Clark Fork River, Rosebud Creek, and the Madison River. In the summer, these (PPL) dams have 595 megawatts of generating capacity, and in the winter capacity is 576 megawatts. PPL Montana also has ownership interests in Colstrip and J. E. Corrette coal-fired electrical generation plants, totaling about 683 megawatts of generating capacity. PPL EnergyPlus markets the energy to end users in Montana. PPL Montana is regulated by FERC.
⇒ Qualifying Facilities (QFs)	Federal law requires all state-regulated utilities to purchase QF power at either a freely negotiated rate or at a rate set by the Public Service Commission. In Montana, there are about 25 qualifying facilities with the collective capacity to produce up to 120 megawatts of electricity annually.
⇒ Montana Electric Cooperative Utilities	There are four not-for-profit electric cooperatives in the State of Montana that either buy electricity on the wholesale markets on behalf of their member retail distribution co-ops or represent them in negotiations with wholesale power suppliers.
⇒ Federal Agencies	BPA, Mission Valley Power, and Western Area Power Administration account for 15% of the electricity sold in Montana.
⇒ Other Energy Suppliers	Other investor-owned utilities supplying Montana customers with electricity include Avista, Black Hills Power, and Energy Northwest.
MONTANA CONSUMERS (End Users)	
⇒ Residential Consumers	Montana residential consumers are private households.

Table 1. Electricity Players in Montana	
Type of electricity player	Electricity role and function
⇒ Commercial Consumers	Montana commercial consumers are nonmanufacturing business establishments, including motels; restaurants; wholesale businesses; retail stores; health, social, and educational institutions; and local, state, and federal governments.
⇒ Industrial Consumers	Montana industrial consumers are manufacturing, construction, mining, agriculture, fishing, and forestry establishments.

Before diving in to take a look at the details of electricity law in Montana, it is also important to look at the broader issues, including the restructuring of electricity law in Montana and Montana's overall energy policy.



Chapter 1: Montana's Electric Industry Restructuring and Reintegration Laws

In January 1997, the Montana Power Company (MPC) and a number of Montana's large energy customers brought forward a legislative proposal (Senate Bill No. 390) to deregulate retail electricity supply in Montana. Montana's electricity laws and policies have received significant public attention and scrutiny since that time, when Montana decided to deregulate electricity supply and opted to allow some Montana consumers to choose, given a competitive market, their own electricity supplier. At the time, it was a fundamental policy shift for the state from regulating the price of electricity supply to allowing competitive markets to set the price of electricity supply. With the change, Montanans began to pay higher prices for power, as utilities that serve Montana customers purchased power on the open market.

MPC sold most of its generating units to PPL Montana at the end of 1999. The remainder of the generating units, contracts, and leases, as well as the entire distribution utility, was sold to NorthWestern Energy in February 2002.

Competitive choice, however, did not develop for small residential and commercial customers in the state, and in 2007, the Montana Legislature undid portions of the Electric Utility Industry Restructuring and Customer Choice Act. The "reregulation" bill, as it was often called, allows NorthWestern Energy to own electric power plants again and to dedicate the power it produces to Montana customers. It significantly tailored customer choice, limiting the ability of retail customers with a monthly demand of less than 5,000 kilowatts to migrate to other electricity suppliers if those customers were receiving electricity from a public utility prior to October 2007.

Prior to the 2007 law, a NorthWestern Energy customer could choose an electricity supplier. If a customer is a member of a cooperative that did not open up to competition or a customer of Montana-Dakota Utilities Co., the price of retail electricity supply remains set by either the cooperative board or the Public Service Commission (PSC), respectively. The original Montana electricity restructuring law set up a transition period for all NorthWestern customers to choose an electricity supplier by July 1, 2002. Market volatility and the lack of significant small-customer retail competition forced the 2001 Montana Legislature to delay full customer choice until July 1, 2007. Subsequent changes made by the 2003 Montana Legislature further extended the date for full customer choice until July 1, 2027, and with the approval of the "Electric Utility Industry Generation Reintegration Act" by the 2007 Legislature, the transition to customer choice ultimately ended for NorthWestern customers.

The fundamental premise of Montana's restructuring law was that competition would provide greater benefits to consumers than they would otherwise have received under a historically regulated environment. One of the driving forces behind restructuring was a 1996 decision by the Federal Energy Regulatory Commission (FERC) to deregulate electricity supply markets at the wholesale level. Wholesale transactions involve the sale of electricity from large suppliers (i.e., power producers) to large electricity buyers and sellers (utilities, power marketers, etc.).

Therefore, in January 1997, the MPC and a number of Montana's large customers brought forward a legislative proposal (Senate Bill No. 390) to deregulate retail electricity supply. The reasons stated in the testimony before the Montana Legislature to pass Senate Bill No. 390 were:

- Competitive markets would provide Montana electricity consumers with cheaper prices over the long term.
- Congress was seriously contemplating national deregulation legislation, and Montana should take a leadership position so that the federal government would grandfather in our policy choices.

- Montana's large industrial customers were looking at an electricity supply market that was cheaper than the traditional regulated utility supply. If they could get better prices, it would enhance plant profitability and promote economic development in Montana.
- The Montana Power Company needed to be proactive in a competitive environment that was emerging, as opposed to reactive.
- Competition is here, wholesale power supply markets are competitive, and large customers are demanding retail access.

In passing Senate Bill No. 390 (Chapter 505, Laws of 1997), the 1997 Legislature noted that competitive markets exist, that Montana customers should have the freedom to choose their electricity supplier, that Montana consumers should be protected, and that the financial integrity of Montana utilities should be maintained.²

For the most part, competitive markets did develop to serve large industrial electricity customers, and most of those customers selected alternative electricity suppliers. Market volatility and the lack of significant small-customer retail competition, however, forced the 2007 Legislature to effectively put an end to full customer choice.

In January 2007, the Energy and Telecommunications Interim Committee requested that a bill be brought forward (House Bill No. 25) to move toward reregulation of Montana's retail electricity supply. The bill was amended several times and was the subject of much debate. The reasons stated in the testimony before the Legislature to pass House Bill No. 25 were:

- Competitive markets had not developed for small customers in Montana and electricity consumers were being exposed to higher market prices.

² For text of testimony in support and in opposition, see the committee minutes of Senate Bill No. 390 during the 1997 legislative session.

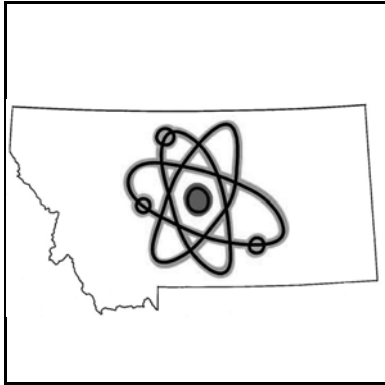
- NorthWestern Energy, with no generation assets of its own, lacked power at the bargaining table when securing the supply it needed to meet customer demand.
- Continuing to have small customer choice in law while a competitive market didn't actually exist created electric load uncertainty that impeded NorthWestern Energy's ability to plan for and procure electricity supply at optimal terms and prices.
- NorthWestern Energy needed the ability to build new plants and dedicate that power to Montana customers at regulated, stable rates.³

If you are a small customer of NorthWestern who did not choose an alternative electricity supplier prior to October 2007, you are now part of the electricity supply load that is regulated by the PSC. Small NorthWestern Energy customers still have the opportunity to purchase a separately marketed product composed of electricity from renewable resources. With changes made by the 2007 Legislature, NorthWestern Energy also is pursuing its own generation assets, and a new set of guidelines is in place for the PSC to follow in approving NorthWestern Energy's efforts to procure an electricity supply resource.

In signing House Bill No. 25 (Chapter 491, Laws of 2007) in May 2007, Governor Brian Schweitzer noted: "Potential benefits from HB 25 will only accrue down the road."

The 2009 Legislature continued to take steps to allow for utility integration. In approving House Bill No. 294 (Chapter 127, Laws of 2009), the Legislature allowed a natural gas utility that had restructured to acquire natural gas production and gathering resources and include them in the rate base. The revisions to the law also establish procedures for a utility to apply to the PSC for approval to include them in the rate base prior to the acquisition.

³ For text of testimony in support and in opposition, see the committee minutes of House Bill No. 25 during the 2007 legislative session.



Chapter 2: Montana's Energy Policy

The 2011 Montana Legislature approved a detailed energy policy for Montana in Senate Bill No. 305 (Chapter 385, Laws of 2011) that outlines goals, primarily related to energy production, as outlined in Title 90, chapter 4, part 10, MCA. The goals also touch on the issues of consumption and transmission.

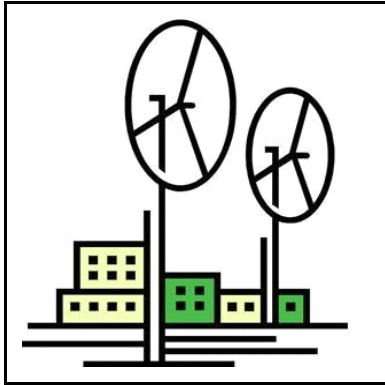
Montana's original energy policy was the result of Senate Bill No. 225 (Chapter 242, Laws of 1993) enacted by the 1993 Legislature. Senate Bill No. 225 was based on 2 years of study conducted by the Environmental Quality Council (EQC) in the early 1990s. The 1991 Legislature responded to the United States' entry in a war in the Middle East and uncertainty about energy security and supply by approving House Joint Resolution No. 31. The resolution required the EQC to develop recommendations for an energy policy and options for its implementation.

Following the EQC's work, for the next 15 years, Montana's energy policy stated that it is the policy of Montana "to promote energy efficiency, conservation, production, and consumption of a reliable and efficient mix of energy sources that represent the least social, environmental, and economic costs and the greatest long-term benefits to Montana citizens". The 2011 policy preserved that language and added a series of related goals.

In 2003 the Legislature also created the Energy and Telecommunications Interim Committee (ETIC) to oversee energy issues that had been tracked by the EQC. With the change, the ETIC took on the responsibility of tracking and updating Montana's energy policy. Legislation passed and approved by the 2009 Legislature set the stage for development of the new policy, which was adopted by the 2011 Legislature. The 2009 Legislature directed the ETIC to embark on a nearly 2-year study of energy policy during the 2009-2010 interim and to review nine, specific energy-related

topics. The ETIC reached a consensus on many draft energy policy statements related to transmission line development, energy conservation and efficiency, and alternative energy systems. The Committee was unable to reach a consensus on language related to fossil fuel resources for electrical generation, including coal, oil, and natural gas. Because the Committee could not reach a consensus, members opted not to pursue legislation changing the current energy policy. The 2011 Legislature, however, did approve a revised energy policy brought forward by Senator Verdell Jackson, R-Kalispell. The new policy is incorporated in 90-4-1001, MCA. The policy sets 24 goals, including but not limited to:

- enhancing existing energy development and creating new diversified energy development from all of Montana's abundant energy resources;
- increasing utilization of Montana's vast coal reserves in an environmentally sound manner that includes the mitigation of greenhouse gas and other emissions;
- building new transmission lines in the state, while noting that the need for new transmission lines may be mitigated by focusing on energy efficiency, distributed energy, demand response, and smart grid technologies;
- addressing the interests of property owners and property rights as soon as practicable when developing a project to provide time to consider a variety of options as easements are secured;
- using new and innovative technologies, such as compressed air energy storage, batteries, flywheels, hydrogen production, smart grid, smart garage, and intrahour balancing services to address wind integration;
- ensuring that adequate amounts of the electrical energy produced at the lowest cost in this state are reserved for Montana's families, businesses, and industries.



Chapter 3: Generating Electricity in Montana

■ Physical ■

With that broad look at overall energy policy in Montana, the next step is a quick review of energy generation. Electricity is a form of energy. If you get down to the very basics, electricity is the flow of little charged particles, called electrons, that were separated from atoms by some outside force. The free movement of those electrons constitutes an electric CURRENT. Visualize the flow of these electrons as analogous to the flow of water through a garden hose. The pressure in the garden hose is the VOLTAGE, and the amount of electrons flowing through the hose is the current or AMPERAGE. The product of the current and the voltage is the energy available to do work—WATTS.

Electricity is considered a secondary source of energy. In order to produce electricity, we need to convert other sources of energy, like water, COAL, oil, NATURAL GAS, geothermal heat and steam, biomass, wind, and solar, called primary sources, into electricity. The process of converting primary sources of energy to electricity is called electricity GENERATION. When the wind blows, the water flows, the sun shines, or coal and natural gas are burned to heat water to create pressurized steam, any of these primary sources of energy creates what is called chemical or mechanical (or working) energy.

In Montana, we have such primary sources of energy as water, coal, petroleum, natural gas, geothermal heat and steam, biomass, wind, and the sun that are converted into a usable form of working energy that drives an electric generator. Primary sources of energy can be further broken down into renewable and nonrenewable sources. RENEWABLE ENERGY is obtained from sources that are essentially sustainable, unlike, for example, FOSSIL FUELS such as coal and natural gas, of which there is a finite supply. Renewable energy sources include falling water, geothermal steam or heat, biomass, wind, and the sun. In Montana, we are endowed with an

abundance and a variety of primary sources of energy. Montana's coal reserves total 119 billion tons, roughly 25% of the United States' total reserves. Montana has also been described as the Saudi Arabia of wind. We have an extensive system of hydroelectric dams. We are a resource-rich state when it comes to FUEL that can and does feed Montana's electric energy engines.

Montana currently has 40 generating facilities located across the state with nameplate generating capacity of 5,904 megawatts (Energy Information Administration, 2010).⁴ Coal-fired generation made up 58% of Montana's generation capacity in 2009. Hydroelectric facilities accounted for 36%, wind now makes up 3%, and natural gas, wood-derived fuels, and others accounted for the remainder (EIA, 2010).⁵

Much of Montana's power is obligated through contracts to other customers, most of whom are out of state. Utilities from Oregon and Washington own 41% of Montana's power production.

The Bonneville Power Administration (BPA) and the Western Area Power Administration (WAPA) market the power produced from federal generation projects in Montana. That represents about 15% of Montana's power production, some of which goes to electric cooperatives in state, and the rest of which is moved out of state. The bulk of the remaining power in the state (29.2%) is owned by PPL Montana. Past Legislatures created a variety of statutory incentives to build additional electricity generation in various forms in the state. In the last few years, additional generation facilities have come online in Montana, including the Judith Gap wind farm, the NaturEner Glacier wind farm, and the Basin Creek Power gas facility and the Dave Gates generating station, which provides NorthWestern Energy with regulating service.

⁴ http://www.eia.doe.gov/cneaf/electricity/epa/existing_capacity_state.xls

⁵ http://www.eia.doe.gov/cneaf/electricity/epa/generation_state.xls

■ Regulation ■

Appendix A includes an inventory of those laws that regulate primary fuel sources for electricity in Montana. Many of those regulatory laws apply to the operation of electrical generation facilities. Generation facilities typically require air and water quality permits from the Department of Environmental Quality. Some facilities may require a water use permit from the Department of Natural Resources and Conservation. Those permits trigger provisions of the Montana Environmental Policy Act, which requires the State of Montana to conduct an environmental review of a proposed generation facility. Electrical generation facilities are no longer required to go through a state siting certification process, however, certain transmission lines are required to go through this process. Local governments also may regulate the siting of a generation facility through land use and zoning restrictions.

The Environmental Quality Council (EQC) produces the "Montana Index of Environmental Permits", which includes a complete inventory of the permits and licenses needed to conduct activities that may affect the state's environment. The permit index lists the permits required, the permitting agencies, and the statutes and rules that regulate each permit. The EQC also has produced a document called "Permitting in Montana", which includes flowcharts outlining the steps necessary to acquire a permit. During the 2009-2010 interim, the EQC developed a flowchart that shows the air quality permitting process that applies to a large energy development project, including but not limited to a power plant, a refinery, or a special fuels project. That process is shown in **Figure 1**.

More specific to the regulation of electricity suppliers, pursuant to 69-3-1201 through 69-3-1206, 69-8-419, and 69-8-420, MCA, and PSC rules, NorthWestern Energy and Montana-Dakota Utilities Co. (MDU) submit their long-range plans for acquiring electricity supply resources to the PSC for review and comment every 2 years. If either utility is planning to construct a generation facility, the utility must undertake a planning process that looks at low-cost alternatives to the proposed generation facility.

In the case of MDU, the PSC must determine whether a generation facility that is proposed to be included in the rate base is used and useful at just and reasonable prices (is a smart investment). Depending on the outcome of this planning process and the PSC's used and useful determination, the PSC has the authority to deny or approve the utility's cost recovery for the generation plant. See 69-3-109, 69-3-201, and Title 69, chapter 3, part 12, MCA, for details.

In the case of NorthWestern Energy, the utility may request PSC approval of an electricity supply resource acquisition, which could be a generation facility, either prior to the acquisition or after the fact. The PSC may approve or deny the request in whole or in part. The PSC may approve the acquisition if it finds that procurement of the resource is in the public interest and is consistent with the statutory requirements and objections in 69-3-201 and 69-8-419, MCA, and with PSC rules. If the PSC approves a NorthWestern Energy resource acquisition, it may not subsequently disallow the utility's recovery of the approved costs associated with the resource.

A variety of state laws have evolved over time to regulate, tax, and provide incentives for the extraction of primary sources of energy used in the production of electricity. The list of these laws is voluminous and will not be recited in its entirety. Generally, Montana law allows for controlled energy resource extraction and allocation. The regulatory controls are usually in the form of environmental restrictions. Incentives for energy resource extraction and development are in the form of tax incentives or low-interest state loans.

The 2009 and 2011 legislative sessions included much discussion about the regulatory and permitting framework surrounding energy projects. Ultimately, two new laws were passed in 2009.

→ **House Bill No. 483** (Chapter 445, Laws of 2009) revises environmental laws related to energy development projects. (Process reflected in **Figure 1**.) The revisions modify the request procedures

for a hearing before the Board of Environmental Review (BER), require a written undertaking to be given by certain parties requesting a hearing or stay before the BER or a court, and clarify remand procedures. The bill also modifies the expiration date requirements for a permit or license under Montana's air quality laws and requires the BER to issue a final decision within 150 days under air quality laws and the Montana Major Facility Siting Act. The use of Best Available Control Technologies regulation also is clarified. (Title 75, chapters 2, 5, and 20, MCA)

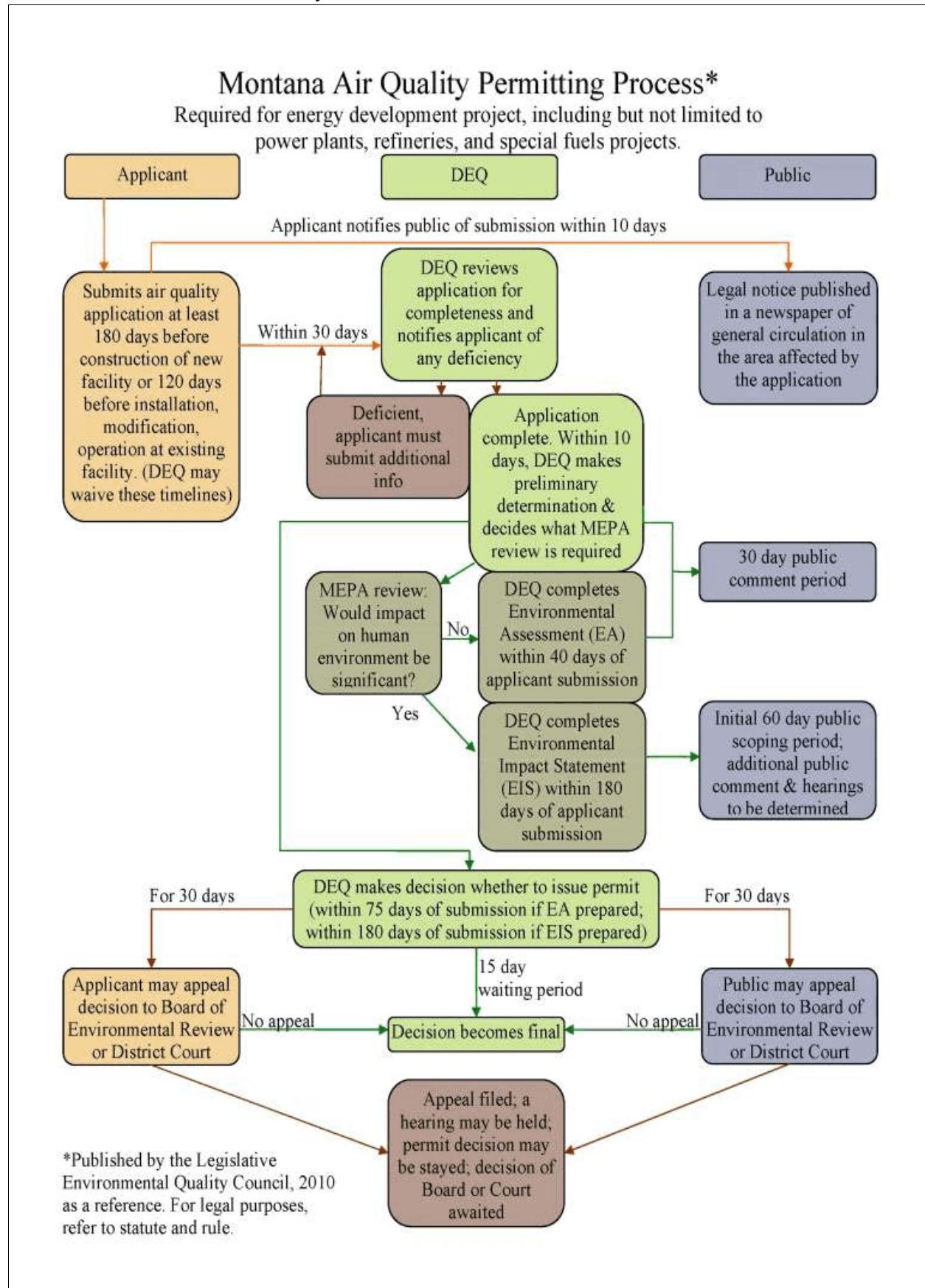
- **House Bill No. 529** (Chapter 239, Laws of 2009) limits the scope of environmental review under the Montana Environmental Policy Act for certain energy projects on state lands. If more than 33% of the total land occupied by an energy development project is state land, then the environmental review includes the total land area, including federal and private land. (Title 77, chapter 1, part 1, MCA)

The 2011 Legislature further altered permitting and environmental review requirements.

- **Senate Bill No. 233** (Chapter 396, Laws of 2011) revises the intent of environmental impact analysis and an environmental assessment under the Montana Environmental Policy Act and clarifies that alternatives included in an alternatives analysis are discretionary. The bill outlines requirements for state-sponsored and private projects in an environmental review. It requires that the scope of an environmental review is only within Montana's borders and limits the procedures for legal challenges under MEPA to remand, with additional legal contingencies.

Figure 1. Air Quality Permitting Process for Energy Development Plant.

Source: Environmental Quality Council



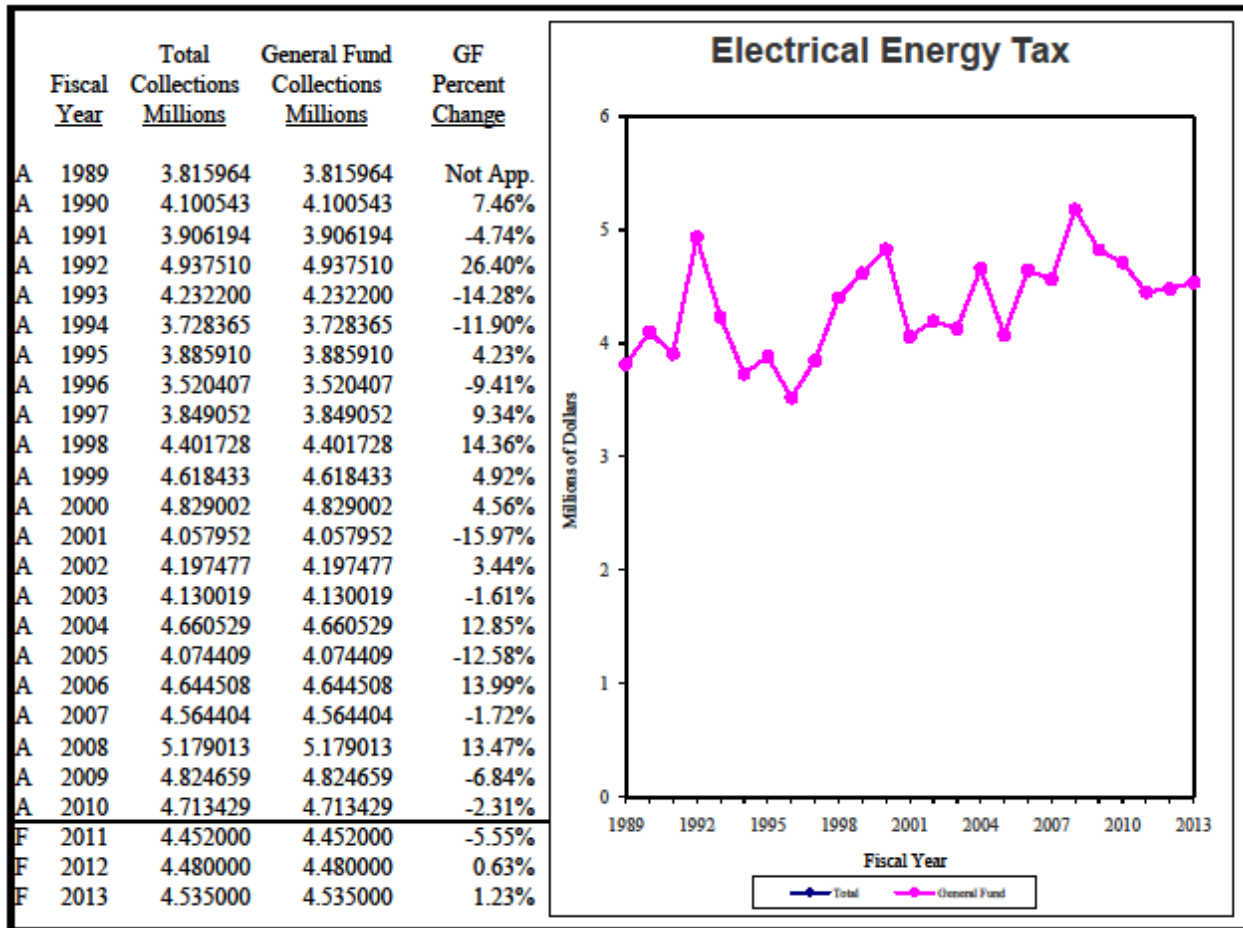
→ **Senate Bill No. 206** (Chapter 382, Laws of 2011) revises the Major Facility Siting Act to require the Department of Environmental Quality to examine a 1-mile-wide facility siting corridor along the facility route when conducting a review in accordance with MEPA. Exempts siting modifications within the facility siting corridor from MEPA and requires facilities to be sited in federally designated energy corridors when compatible with other siting and reliability requirements.

■ Taxation ■

There are a variety of property taxes, corporate license and income taxes, and equipment taxes that the state and local governments assess on energy generating facilities (see Title 15, MCA, generally). The Legislature, in grappling with the changes brought about by the restructuring of Montana's electric industry in 1997, found it necessary to make changes to the existing system of property taxation that included reducing the property tax rate applied to electrical generation facilities and imposing a replacement tax called a wholesale energy transaction tax. (Title 15, chapter 72, part 1, MCA) In 1999, the Legislature reduced the tax rate on electrical generation property from 12% to 6%. To partly replace the reduction in the generation tax, a wholesale energy transaction tax was developed. The tax is imposed at a rate of 0.015 cents per kilowatt-hour on electricity that is transmitted by a transmission service provider in the state. It is deposited, 100%, into the state general fund.

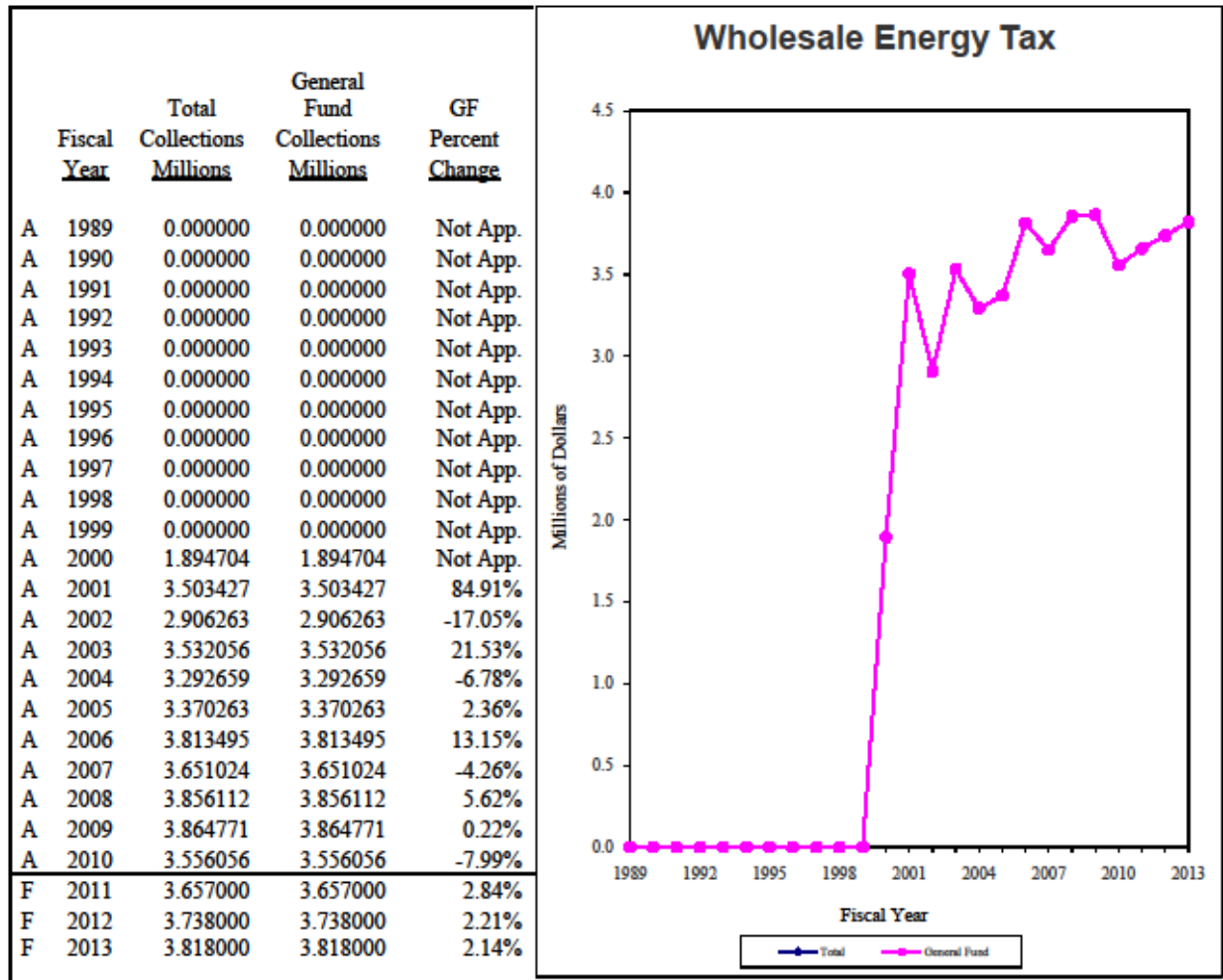
An electrical energy license tax is imposed on each person or organization engaged in generating, manufacturing, or producing electrical energy in Montana. This tax is in addition to the wholesale energy transaction tax enacted by the 1999 Legislature (15-51-101, MCA). The tax of \$0.0002 per kilowatt-hour (or \$0.20 per megawatt-hour) is levied against all electrical energy produced within the state. A deduction is allowed for "actual and necessary" energy use by the plant for the production of the energy. The revenue goes to the general fund. A snapshot is shown in **Figure 2**.

Figure 2: Electrical Energy Tax. Source: Legislative Fiscal Division



General fund revenue from the wholesale energy transaction tax for FY 2000 through FY 2010 and forecast revenue for FY 2011 through FY 2013 has been included in the Legislative Fiscal Division's revenue estimate profiles. The amount generated has varied from a low of \$2.9 million in 2002 and a high of \$3.9 million in 2009. An overview of the revenue generated by the wholesale energy transaction tax is included in **Figure 3**.

Figure 3: Wholesale Energy Tax. Source: Legislative Fiscal Division



■ Incentives ■

Most legislative sessions include a discussion of incentives to encourage the development of Montana's natural resources, including energy generation. Many of those discussions circle back to the regulatory and tax issues noted earlier in this guide. The following incentives for electrical generation facilities also apply in Montana:

- **Exemption:** Electrical generation facilities are exempted from the Montana Major Facility Siting Act.
- **Revenue bonds:** Electrical energy generation facilities, regardless of size or fuel source, are eligible for county or municipal revenue bonds

issued to finance industrial development projects. (Title 90, chapter 5, part 1, MCA)

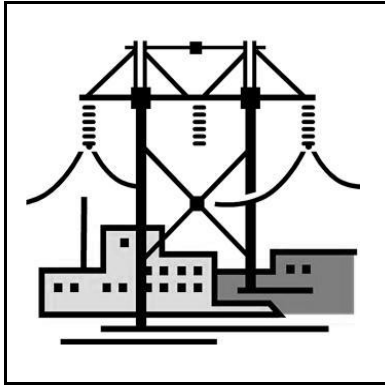
- **Tax credit:** A new or expanding corporation that is manufacturing energy by means of an alternative renewable energy source may be eligible for the new or expanded industry tax credit against corporate income tax. The credit is equal to 1% of new wages paid in the state during the first 3 years of operation. (Title 15, chapter 31, part 1, MCA)
- **Research and commercialization loans and grants:** The Board of Research and Commercialization Technology gives grants and loans for renewable resource and clean coal research and development. (Title 90, chapter 3, part 10, MCA)
- **Microbusiness loan program:** Businesses that produce energy using alternative renewable energy sources are eligible for microbusiness loans, which are capped at \$100,000. A microbusiness is Montana-based and has less than 10 full-time employees and gross annual revenue of less than \$1 million. (Title 17, chapter 6, part 4, MCA)
- **Retail green power:** Public utilities must offer customers the option of purchasing a product made of or supporting power from environmentally preferred resources, including solar, geothermal, and biomass. The options are subject to review and approval by the PSC. (69-8-210, MCA)
- **Universal system benefits programs (USBP):** A portion of each utility's annual retail sales revenue supports renewable energy resources, energy conservation, and low-income energy assistance. (69-8-402, MCA)
- **Federal Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 824a-3:** Establishes requirements for 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. (Title 69, chapter 3, part 6, MCA). The Energy Policy Act of 2005, Public Law 109-58, also addresses portions of the 1978 act with respect to net metering, time-based metering and communications, interconnection, fuel sources, and fossil fuel generation efficiency.

- **Renewable portfolio standard:** The Montana Renewable Power Production and Rural Economic Development Act requires that public utilities and competitive electricity suppliers procure a minimum of 5% of their retail sales from eligible renewable resources through 2009, 10% between 2010 and 2014, and 15% starting January 1, 2015. Cooperative utilities with 5,000 or more customers are responsible for implementing their own renewable standards. (Title 69, chapter 3, part 20, MCA)
- **Economic development bonds:** Energy projects are generally eligible for economic development bonding via the Board of Investments. (Title 17, chapter 5, part 15, MCA)
- **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 90, chapter 4, part 12, MCA) Federal law is found in 26 U.S.C. 54(d), and for the 2007 funding regulations visit <http://apps.irs.gov/pub/irs-tege/n-07-26a.pdf>.

As noted above, set out in **Appendix A** is a very abbreviated, noninclusive summary of state laws, organized by energy source, that regulate the extraction and development of the energy source, tax that energy source,

and provide incentives for the extraction and development of the energy resource.



Chapter 4: Transmission and Distribution

■ Physical ■

When a generator produces electricity, the electricity moves along cables to a substation that has transformers. A transformer is a device that converts electricity from HIGH VOLTAGE to low voltage or vice versa. It is more efficient to move electricity over long distances using high voltage. High-voltage electricity is transported over TRANSMISSION lines to other substations that convert high-voltage electricity into lower-voltage electricity. From there, the lower-voltage electricity moves over DISTRIBUTION lines to our homes and businesses.

The physical operation of transporting electricity gets complicated when you think in terms of multiple generators pouring electricity onto transmission and distribution systems owned by multiple entities and then delivering that electricity to millions of customers throughout the system. How does it all work? Think of the transmission systems as interstate highways and the distribution systems as your typical two-lane roads. The interconnection of this electrical highway and road system makes up what is known as the POWER grid.

Visualize the flow of electricity as pressurized water flowing down the transmission and distribution lines. When electricity is generated at a point on the system and sent to a distant point on the system, the electricity flows over all of the connected network of roads. Like water, electricity flows and distributes itself over the paths with the least amount of resistance (or impedance). It is difficult to constrain the flow of electricity to any given path. Unlike water, electricity can flow in opposite directions at the same time and over the same cable or wire. Also unlike water, electricity cannot be easily stored, so entities that generate and transmit electricity must coordinate and plan production and transmission of electricity very carefully. The amount of available energy in a particular

LOAD center (an area where the electricity is being consumed) depends on the amount of electricity generated and where it's generated, as well as the amount of electrical energy that the transmission and distribution lines can carry.

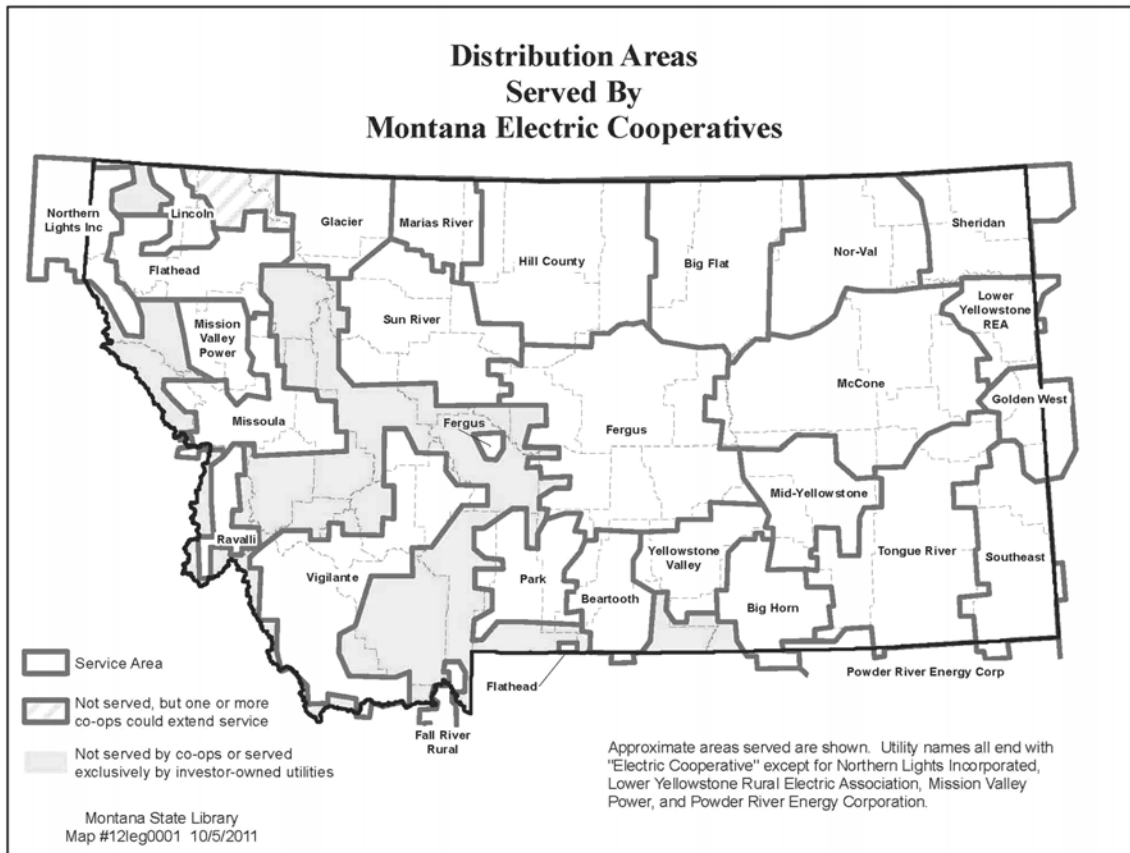
The flow of electricity on the entire transmission and distribution network is really like one giant swimming pool of electricity produced from thousands of generators. This giant swimming pool has millions of spigots that funnel the electricity to electricity users or loads. Once electricity has been produced and dumped into the giant transmission and distribution swimming pool, you can't tell a Montana-produced electron from a Canadian-produced electron—you can't paint a label on an electron that says something like "produced in Montana". Sometimes this swimming pool of transmission lines becomes physically congested—meaning that the lines (or the pool) are fully loaded with electrons or that the contractual rights to a particular line are fully allocated.

The physical realities of electricity transmission do not necessarily reflect the way that electricity is bought, sold, and transmitted. Typically, if you want to transmit electricity produced at point A to point B, you must purchase CAPACITY (if available) on any transmission or distribution path that connects the two points. This is called a CONTRACT PATH. Physically, a substantial portion of that electricity may flow from point A to point B, but some of the electricity may inadvertently flow across other paths.

The contract must account for INADVERTENT FLOWS. If you want to guarantee that your electricity gets from point A to point B, you must contract for "firm" scheduled flows of electricity over the power lines. In getting your power from point A to point B, you may have to contract with multiple transmission or distribution owners for firm transmission access.

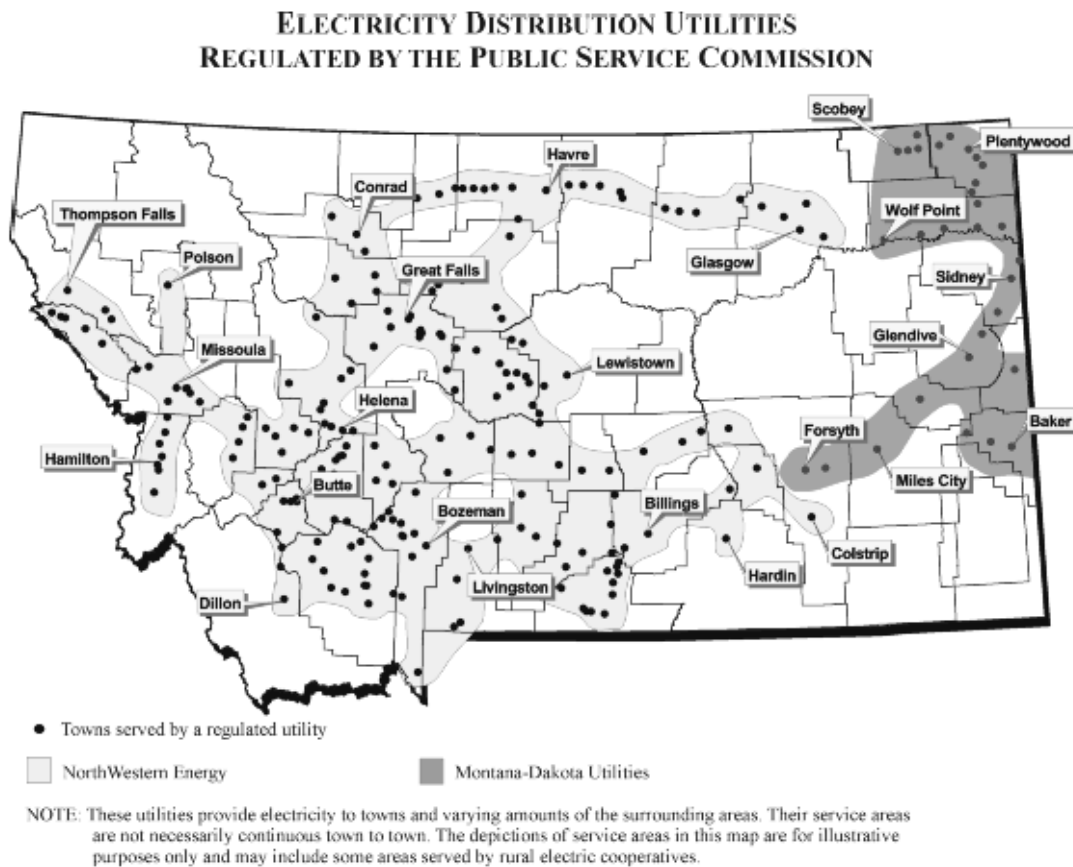
Transmission and distribution wires seem to crisscross the state in a haphazard manner, but there is an imposed organizational scheme for distribution placement. Montana is divided into service territories as shown in **Figures 4 and 5**. Distribution services providers are determined largely

Figure 4: Distribution Areas Served by Montana Electric Cooperatives



by grandfathered service connections or, for new loads, the costs of alternative service providers to connect to a new load from an existing facility. All 25 electric cooperatives, Montana-Dakota Utilities Co., City of Troy, and NorthWestern Energy have distribution service territories. State law strictly protects the territorial integrity of each service territory (Title 69, chapter 5, part 1, MCA). The Territorial Integrity Act outlines these provisions. It should be noted that in some instances new customers can provide self-service for distribution and transmission, but facilities can't duplicate existing facilities. NorthWestern Energy, PacifiCorp, BPA, and WAPA all own transmission facilities.

Figure 5: Electricity Distribution Utilities Regulated by the Public Service Commission

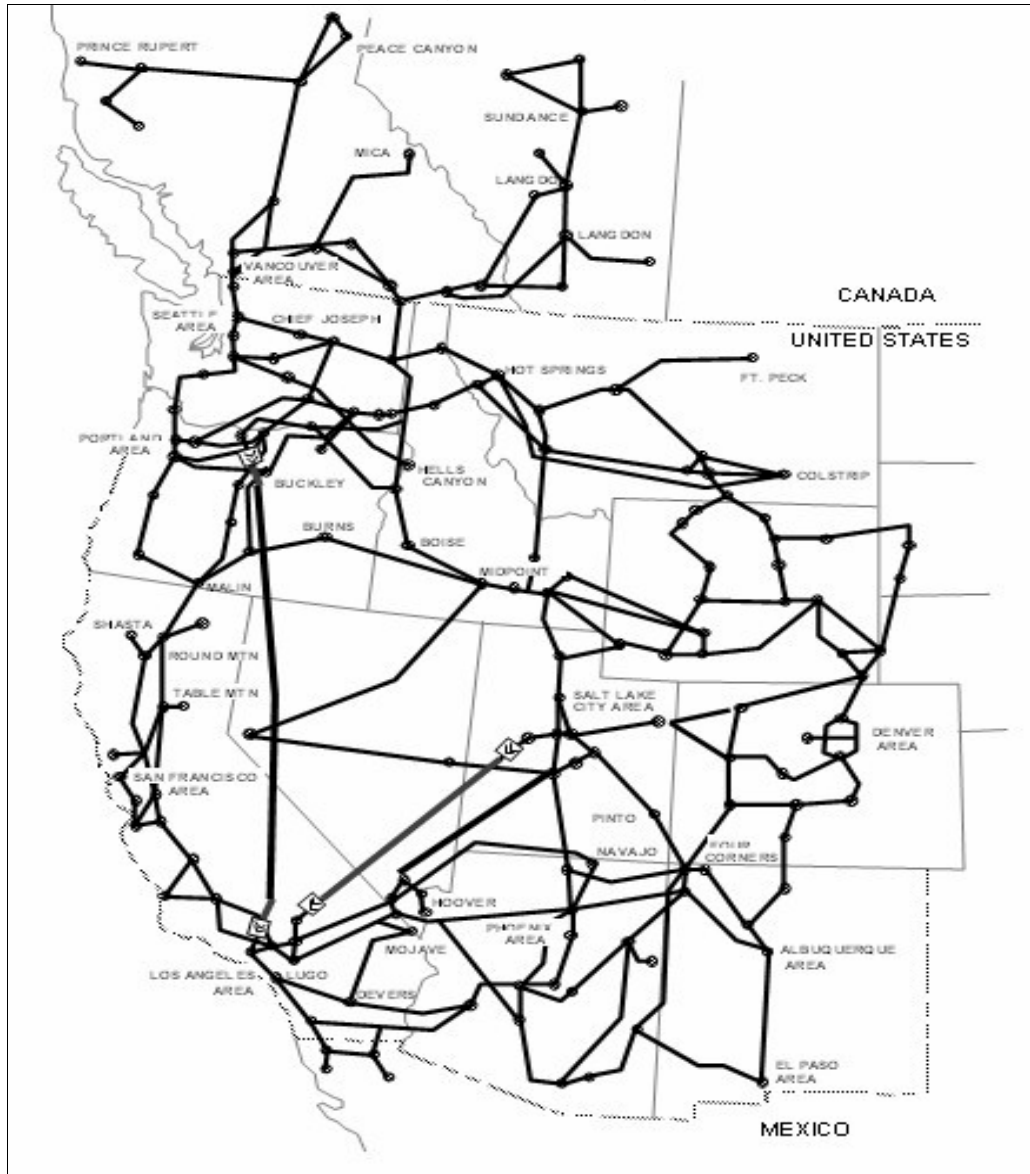


■ Regulation ■

Most of Montana's transmission and distribution system is a small part of what is known as the WESTERN INTERCONNECTION Transmission System, which, in turn, is a part of a three-region system of interconnections that transmits and distributes electricity across the United States as well as parts of Canada and Mexico. A map is included in **Figure 6**. The key point here is that we don't produce, consume, or transmit electricity in Montana in isolation from our neighboring western states. Because Montana is interconnected, we are interdependent, and whatever happens in Washington, Oregon, or California, for example, could potentially impact us here in Montana. Being a part of the western interconnection also increases reliability in Montana.

Figure 6. Western Interconnection Transmission System

Source: <http://www.westgov.org/wieb/meetings/crep1099/wiiso.htm>



The Federal Energy Regulatory Commission (FERC) has jurisdiction over transmission pricing. FERC sets transmission rates that transmission owners can charge, and those charges are passed on to customers. For NorthWestern Energy and Montana-Dakota Utilities Co. customers, the PSC regulates the distribution costs. A public utility may request a distribution rate increase, but that rate increase must be approved through a formal PSC rate hearing process. For Montana electric cooperative members, distribution costs are set by an elected governing board for each particular cooperative.

Because transmission lines cross state boundaries, the federal government, through FERC, has primary regulatory jurisdiction. FERC sets policies and adopts regulations for the management of transmission systems. FERC also authorizes charges for transmission customers at embedded, incremental, or negotiated rates. In recent years, FERC has been increasingly active in trying to boost the efficiency of the transmission system. The interstate transmission system is made up of multiple owners that control access to their piece of transmission wire on the system. Think of these owners as having toll bridge booths at both ends of their transmission wire. There are literally hundreds of toll booths on the western transmission system. Each toll booth demands a contractual payment before an owner can transmit electricity on their portion of the transmission system. This is also known as rate pancaking due to the stacking of charges. Some transmission facility owners historically owned power marketing operations, allowing themselves to charge higher prices for transmission services to other power marketers.

In 1997, FERC issued Order No. 888 requiring transmission owners to functionally separate their power marketing operations. Under Order No. 888, the transmission owners must allow open access to their systems in a manner that does not discriminate against other parties that use their systems. In addition, FERC issued Order No. 2000 encouraging the formation of voluntary independent regional transmission organizations (RTOs) to take over the operation and control of their regional transmission system. There are now seven independent system operators (ISOs) or RTOs overseeing the delivery of about two-thirds of the electricity used in the United States. Montana-Dakota Utilities Co. in Eastern Montana is a member of the Midwest Independent System Operator (MISO), which serves as an RTO in the Eastern Interconnection.

Bonneville Power Administration is a member of the Columbia Grid, while NorthWestern Energy is a member of the Northern Tier Transmission Group. Both subregional planning groups under FERC Order No. 890 are charged with developing a transparent stakeholder-driven transmission plan for their applicable regions of the Western Interconnection.

In February 2007, FERC issued Order No. 890, reforming aspects of the open access transmission tariff. The order mandates that transmission providers implement a coordinated, transparent, and participatory transmission planning process. Each transmission provider was required to develop a proposal describing a transmission planning process that complies with the order.

ColumbiaGrid and the Northern Tier Transmission Group are two nonprofit subregional planning groups, organized under FERC Order No. 890 to improve the efficiency, reliability, and coordinated expansion of the Western Interconnection.

Although FERC has primary jurisdiction over transmission pricing and policy, Montana regulates transmission siting through the Montana Major Facility Siting Act (MFSA) (Title 75, chapter 20, MCA). The MFSA requires that any proposed transmission line, with exceptions for shorter lengths and different generation sources, receive siting certification before it is constructed. The MFSA supersedes local zoning and land use laws, making siting strictly a state decision. Other water quality, air quality, and stream crossing permits would apply. The Montana Environmental Policy Act would require an environmental review on any proposed transmission line.

The PSC has regulatory authority over a public utility's electricity distribution and intrastate transmission. Montana electric cooperatives self-regulate their distribution services. State law protects the territorial integrity of each service territory (Title 69, chapter 5, part 1, MCA) and prohibits duplication of distribution services. Again, some customers are able to construct, own, and operate their own facilities; however, there can't be a duplication of facilities. The 2011 Legislature approved Senate Bill No. 205 (Chapter 120, Laws of 2011) to further clarify and prohibit a utility from providing electricity supply service in another utility's service territory.

In the last 2 years, transmission line development has been at the heart of a controversial discussion about energy development and property rights.

The 2011 Legislature grappled with the regulation of transmission lines largely in response to a December 2010 District Court order finding that Montana Alberta Tie (MATL), which is seeking to build a merchant transmission line in Montana, did not possess the power of eminent domain. The District Court found that the Legislature had to specifically grant entities the right to condemn and that the legislature had not granted entities, like MATL, that right.

The 2011 Legislature responded to the decision by approving House Bill No. 198 (Chapter 321, Laws of 2011), which became law on May 6, 2011. House Bill No. 198 does two things: it clarifies that regulated utilities have the power of eminent domain for projects providing service to the customers of its regulated service, and it clarifies that projects with a Montana Major Facility Siting Act certificate issued by the Department of Environmental Quality have the power of eminent domain for an interest in property for a public use authorized by law to construct a facility in accordance with the certificate.

The Supreme Court in June 2011 remanded the District Court decision to the judge in light of the passage of HB 198, and the case has since been dismissed. In May 2011, several plaintiffs in Pondera and Teton counties, however, filed a lawsuit in Teton County District Court contending that HB 198 is unconstitutional and will harm farming operations. The group is seeking to void the law and believes HB 198 was special legislation. In addition, Concerned Citizens of Montana, a group of landowners and others, organized to gather signatures to block HB 198 from taking effect. They gathered signatures to place a referendum on the state ballot, but did not gather enough signatures to void the law. At the time of this publication, the fate of HB 198 remains in the courts .

■ Taxation ■

Similar to generation, there are license taxes, property taxes, and income taxes paid by entities that are involved in the transmission and distribution of electricity.

The wholesale energy transaction tax discussed in Chapter 3 offers a snapshot of one tax paid by transmission service providers. The wholesale energy transaction tax is paid by the generator if the electricity is exported out of state and by the electricity distributor if the power is delivered in Montana.

A corporate "license" tax is set at a rate of 6.75% on net income earned in the state. (15-31-101, MCA) The property tax paid by those involved in the transmission and distribution of electricity largely depends on what type of energy is being transmitted. For example, a line that transmits electricity from a wind farm is considered Class fourteen property and it is taxed at 3% of market value. Transmission lines that transmit electricity, for example, from a natural gas-fired power plant would be taxed at a rate of 12%. (15-6-157, MCA) The 2005 Legislature developed the tiered rate structure, and the 2007 Legislature further amended the statute, as discussed in the incentives section of this chapter. The Department of Revenue centrally assesses the market value for transmission lines in Montana, and the market value in a specific county is based on the portion of the line in that county's jurisdiction.

Senate Joint Resolution No. 17, passed by the 2011 Legislature, requested an interim study of the system of valuing centrally assessed properties and industrial companies assessed annually by the Department of Revenue.

The preamble of the resolution states that:

- the Legislature has heard concerns about centrally assessed property and large industrial facility taxation; and
- predictability and stability of property valuation will improve the business investment climate for Montana businesses.

Centrally assessed property includes, among other types of property, electrical and natural gas utilities, telecommunications services, rural electric cooperatives and rural telephone cooperatives, oil and natural gas pipelines, airlines and railroads, net proceeds of mines, and coal gross proceeds, (15-23-101, MCA) The Revenue and Transportation Interim

Committee is conducting the study, which could result in legislation being brought to the 2013 Legislature for consideration.

■ Incentives ■

The PSC is required by statute to include in distribution rates a reasonable rate of return for public utilities. This rate of return gives the public utility an incentive to maintain and expand its services. Electric cooperatives are nonprofit, customer-owned entities that recoup their distribution costs in membership rates.

As mentioned in the taxation section of this chapter, during the May 2007 Special Session, the Legislature approved the Jobs and Energy Development Incentives Act, providing a variety of tax incentives for certain transmission lines as follows:

High-voltage, direct-current converter stations that direct power to two different regional power grids are taxed at 2.25% and are considered class sixteen property.

Land that is within 660 feet on either side of the midpoint of a transmission line right-of-way or easement beginning after December 31, 2007, is exempt from property taxes. An owner or operator of the line must apply for the exemption, and there are limits on where the exemption is allowed.

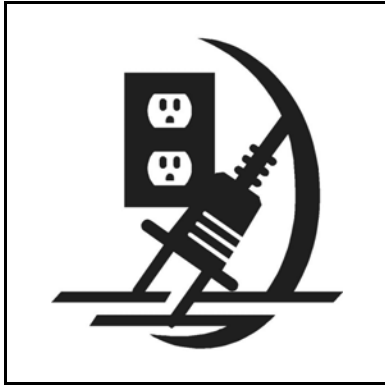
High-voltage, direct-current transmission lines and associated equipment and structures, other than those that direct power to two different regional grids, that are certified under the Montana Major Facility Siting Act are class fourteen property taxed at 3% of market value. The converter station must be located in Montana east of the Continental Divide and be constructed after June 1, 2007. Those lines also must provide access to energy markets for Montana generation facilities constructed after June 1, 2007. The facilities include wind, biodiesel, biomass, coal gasification, ethanol, geothermal, integrated gasification combined cycle, renewable energy manufacturing, and natural gas combined cycle. The portion of an

alternating current transmission line and associated equipment and structures that contract for electricity generated by the above facilities built after June 1, 2007, is also considered class fourteen property. All property of electric transmission lines that originate at the above-listed facilities with at least 90% of the electricity carried by the line originating at the facilities and terminating at an existing line also qualifies.

The 2009 and 2011 Legislatures approved additional incentives and took steps to address concerns raised about the siting of new transmission lines in Montana, including the following:

- **Senate Bill No. 360** (Chapter 469, Laws of 2009) altered the definition of "facility" in the Montana Major Facility Siting Act to exclude transmission upgrades, up to a certain voltage, in existing rights-of-way and easements.
- **Senate Bill No. 206** (Chapter 382, Laws of 2011) revises the Montana Major Facility Siting Act to require the Department of Environmental Quality to examine a 1-mile-wide facility siting corridor along the facility route when conducting a review in accordance with MEPA. It exempts siting modifications within the facility siting corridor from MEPA and requires facilities to be sited in federally designated energy corridors when compatible with other siting and reliability requirements.
- **Senate Bill No. 320** (Chapter 224, Laws of 2011) encourages the upgrading and construction of transmission lines within existing rights-of-way to avoid the proliferation of new transmission corridors and clarifies legislative findings and certain definitions under the Montana Major Facility Siting Act. Any new line of 230 kV or greater is exempt from that act if the developer gets agreement from more than 75% of the owners who collectively own more than 75% of the property along the centerline. A collection of new lines of less than 150 miles total length but not necessarily contiguous is exempt if the lines connect a facility to the regional grid or are needed to provide

firm transmission service. (Prior to enactment of SB 320, this was available only for individual new lines.)



Chapter 5: Usage

■ Physical ■

If you are a typical consumer, you receive a monthly bill that quantifies the amount of electricity that you use each month. The utility installs a meter at your home or business that measures your electricity use. Electricity is

measured in units of power called "watts", named after the inventor of the steam engine, James Watt. One watt is a small unit of power. One unit of HORSEPOWER is about 750 watts. The typical units of electricity measurement include:



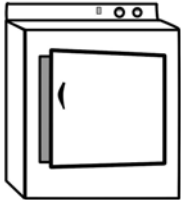
1 kilowatt (kW) = 1,000 watts

1 kilowatt hour (kWh) = the energy of 1,000 watts working for 1 hour

1 megawatt (MW) = 1,000,000 watts

1 megawatt hour (MWh) = the energy of 1,000,000 watts working for 1 hour

Figure 7: Typical Wattages for Common Household Appliances

		
<p>clock radio - 10 watts</p>	<p>microwave oven 750-1,100 watts</p>	<p>clothes dryer 1,800-5,000 watts</p>
<p>Source: Information from U.S. Department of Energy</p>		

In 2009, the average annual electricity consumption for a U.S. residential utility customer was 10,896 kilowatt hours (kWh), an average of 908 kWh per month. Louisiana had the highest annual consumption at 15,276 kWh and Maine the lowest at 6,252 kWh. Montana's annual consumption was at 10,272 kWh.

Montana electricity consumers come in all shapes and sizes. Typical Montana electricity consumers include residential, small commercial, and large industrial customers, local schools, cities, towns, hospitals, agricultural operations, large retail outlets, universities, and state and federal government operations and buildings. Montana consumers are divided into classes based on factors such as volume of electricity use, transformer and voltage needs, when and how the consumer uses electricity, the location of the consumer, and the timing of electricity consumption. Consumers in Montana are often divided into the following classes: residential, industrial, large commercial, small commercial, lighting, and irrigation.

The type of consumer that you are dictates your share of the electricity transmission, distribution, and supply costs that you pay.

A look at consumption and retail price in the Mountain West is included in Table 2.

Table 2: Residential Average Monthly Bill for 2009

Residential Average Monthly Bill for 2009				
State	Consumers	Average Monthly Consumption (kWh)	Average Retail Price (cents per kWh)	Average Monthly Bill
Arizona	2,544,383	1,076	10.73	\$115.42
Colorado	2,111,623	687	10.00	\$68.69
Idaho	659,776	1,080	7.80	\$84.27
Montana	464,517	856	8.93	\$76.48
Nevada	1,054,927	938	12.86	\$120.66
New Mexico	844,865	642	10.02	\$64.30
Utah	932,016	780	8.48	\$66.16
Wyoming	255,383	887	8.58	\$76.12

Source: U.S. Energy Information Administration

■ Regulation ■

Electricity has become one of modern life's basic necessities. Power outages not only can cause extensive economic damage, but can result in physical harm and death. Electricity prices can dramatically impact almost every facet of Montana's economy. Most of Montana's electricity consumers do not have a choice of who provides them with electricity or who transmits and distributes that electricity. Electricity potentially impacts the health, safety, and welfare of every single Montanan. For all of these reasons, electricity transmission, distribution, generation, reliability, metering, billing, etc., have traditionally been highly regulated activities in Montana and the United States generally. These regulations are designed to protect Montana consumers while ensuring that the entities that serve those customers recover their legitimately incurred costs or receive a reasonable rate of return for their electricity services. The type of consumer protection laws that apply to you depend on what type of entity you receive your electricity and electricity services from. If you are a member of a Montana electric cooperative, the elected board of the cooperative sets the rates for electricity supply. If you are a customer of Montana-Dakota Utilities Co., the PSC sets the rates for electricity supply. If you are a small customer served by NorthWestern Energy who did not choose an alternative electricity supplier prior to the enactment of the Electric Utility Industry Generation Reintegration Act in 2007, then you are part of the electricity supply load that is regulated by the PSC. Because NorthWestern Energy is a public utility that does not currently own sufficient generation assets to cover the electricity supply load, NorthWestern must purchase electricity from the market. The PSC must determine whether the costs for those purchases were prudently incurred. If you are a large or small NorthWestern customer who has chosen an alternative electricity supplier, the price of your electricity supply is negotiated between you and your electricity supplier.

Public Utility Customers

If you are a customer of a Montana public utility, such as NorthWestern Energy or Montana-Dakota Utilities Co., you can look to the Montana

Public Service Commission (PSC) as the state agency that is statutorily charged with ensuring that Montana public utilities provide adequate service at reasonable rates. The Montana Consumer Counsel is the constitutional entity that is responsible for representing residential and small business interests in matters before the PSC.

The PSC has very broad regulatory, supervisory, and investigative powers over public utilities. The PSC can investigate the management of the business of all public utilities. It can investigate and inspect the books, accounts, papers, records, and memoranda of any public utility and can examine under oath any officer or employee of a public utility. The PSC is charged with investigating accidents at public utilities. It may formally investigate complaints filed against a public utility. The PSC sets standards for electricity products and services, including discontinuation and reestablishment of service. The PSC is charged with encouraging efficient utility operations, effective use of utility services, and efficient rates. It ensures that every public utility furnishes reasonably adequate electricity services and facilities at reasonable and just prices.

When the PSC sets electricity rates, it must provide public notice of the proposed changes and conduct a hearing on those proposed changes. Electricity customers affected by the proposed change in rates may formally intervene and participate in the rate case proceeding or participate more informally by submitting comments to the PSC either in writing or in person at the public hearing.

Electric Cooperative Customers

If you are a customer of a Montana electric cooperative, you are considered a part owner of that cooperative. Electric cooperatives are not-for-profit entities that are democratically controlled (one person/one vote) by the members of the cooperative. Electric cooperatives are not regulated by the PSC. The electric cooperatives are self-regulated by their members. Cooperative members democratically elect a board of directors that sets customer protection policies and establishes the rates for electricity distribution and supply.

Municipal Utility Customers

A municipal electric utility has the power and authority to regulate, establish, and change, as it considers proper, rates, charges, and classifications imposed for electricity services to its citizens. Rates and charges must be reasonable and just. If a municipality proposes a change in electricity rates, it must hold a public hearing. A municipal electric utility is required to adopt rules for the operation of the utility, with the concurrence of the governing body of the municipality, that protect municipal customers.

■ Incentives ■

Energy conservation refers to activities that reduce the amount of electricity used by a consumer -- such as turning a light off when you leave the room. Energy efficiency results from technologies that are more efficient or use less energy -- such as a compact fluorescent light bulb. The two are often linked. Montana's energy policy, as stated in 90-4-1001, MCA, promotes energy conservation, energy efficiency, and demand-side management.

Conservation is really a very simple concept -- if you use less electricity, you lower your electricity bill. If a large block of customers uses less electricity, it reduces the overall DEMAND on the transmission and generation system, it reduces customer exposure to volatile fuel and electric market prices, and it eliminates the need to purchase or construct new and very expensive generation and transmission facilities. Conservation saves money and conserves natural resources.

There are a variety of state law incentives for electricity conservation:

→ **Universal system benefits programs (USBP):** Among other things, provides for the continued funding of and new expenditures for cost-effective local energy conservation and low-income weatherization. When Montana restructured its electric industry, it created a USBP charge and fund to ensure funding for these types of electricity conservation. Public utilities, cooperatives, and large customers can

self-direct and receive credit for cost-effective local energy conservation and low-income weatherization. (69-8-402, MCA)

- **Tax deduction:** Allows a deduction from gross corporate income for computation of net income for expenditures for capital investments in buildings for energy conservation purposes in accordance with a specific schedule set forth in the statute. (15-32-103, MCA)
- **Tax credit:** Provides a resident individual taxpayer with a credit not to exceed \$500 against state income tax for expenditures for capital investments in a building for energy conservation purposes. (15-32-109, MCA)
- **Montana In-State Investment Act of 1983:** Expresses legislative policy and purposes of the permanent coal tax trust fund, which are to: (1) compensate future generations for the depletion of resources caused by coal development; and (2) develop a strong economy for Montana. The Act states that the Board of Investments shall endeavor to invest 25% of the fund in the Montana economy, with special emphasis on local enterprises. Title 17, chapter 6, part 3, MCA, also sets forth authorized investments, limitations on investments, and preferences for investments of revenue from the coal tax trust fund, which, under 17-6-309(1)(d), MCA, expressly includes energy efficiency investments.
- **Montana state building code:** Designed to accomplish several objectives, including the following: encourages, to the fullest extent feasible, the use of modern technical methods, devices, and improvements for the purpose of reducing the cost of construction, consistent with the conservation of energy and the efficient use of energy; encourages efficient design and installation that will result in consumption of the least possible quantities of energy and reduce the need for heating in the winter and air conditioning in the summer; encourages efficient design of building envelopes with high thermal resistance and low air leakage; and requires design and selection

practices that will promote the efficient use of energy. The Department of Labor and Industry is responsible for adopting rules relating to the construction of, installation of equipment in, and standards for materials to be used in all buildings subject to the code. Cities, counties, or towns with building enforcement programs may adopt incentive-based energy conservation standards for new construction. The conservation standards may exceed state building code standards. (Title 50, chapter 60, parts 1 and 2, MCA)

- **Incentive-based codes:** Allows cities, counties, or towns with building enforcement programs to adopt incentive-based energy conservation standards for new construction. The conservation standards may exceed state building code standards. (50-60-102, MCA)

- **Purchase of conservation:** Authorizes utilities to purchase conservation or directly engage in conservation investments that have been approved by the PSC, with the cost-effective conservation measures to be at the customer's discretion, installed by either a private firm, the customer, or the utility. The statutes also authorize the PSC to make onsite audits to ensure compliance with the criteria set out in Title 69, chapter 3, part 7, MCA, and prohibit a utility that has placed the conservation in its rate base from claiming a conservation tax credit. (Title 69, chapter 3, part 7, MCA)

- **Low-income weatherization:** Appropriates to the Department of Public Health and Human Services (DPHHS) all federal funds and grants available under the U.S. Department of Energy low-income weatherization assistance program, U.S. Department of Health and Human Services low-income home energy assistance program, or any similar federal program designed to increase the energy efficiency of dwellings inhabited by low-income individuals. The DPHHS is directed to allocate at least 5% of funds received from the U.S. Department of Health and Human Services low-income home energy assistance program if federal law allows. (90-4-201, MCA)

- **Energy supply emergency powers:** Establishes the necessary planning, information gathering, and energy emergency powers for the Governor and defines the conditions under which these powers are to be exercised. The regular monitoring of energy supplies and demand is provided for. Title 90, chapter 4, part 3, MCA, is intended to enable the Governor and other state agencies to deal with possible energy shortage or energy price emergency situations. The Governor is granted emergency powers that are intended to enable the Governor's Office to gather information, to regularly monitor energy supplies and demand, to formulate plans, and to institute appropriate emergency measures designed to reduce or allocate the use of energy. (Title 90, chapter 4, part 3, MCA)

- **Participation in the Pacific Northwest Electric Power and Conservation Planning Council:** Expresses legislative agreement to participate in the Pacific Northwest Electric Power Planning and Conservation Act and the Pacific Northwest Electric Power and Conservation Planning Council. The Governor is authorized to appoint two members to the Council. (Title 90, chapter 4, part 4, MCA)

- **State Building Energy Conservation Act:** Requires DEQ to work with state agencies to identify buildings that have potential for energy savings, based on age, energy use, function, and condition of the building. DEQ is required to compile a report to be submitted to the Governor before September 1 of each even-numbered year. The Governor is required to submit proposed projects to be funded as a part of the budget. If two-thirds of the Legislature approves, energy conservation bonds may be issued to finance energy conservation projects. (Title 90, chapter 4, part 6, 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. Loans up to a maximum of \$40,000 must be repaid within 10 years. The rate for 2011 is 4%. (75-25-101, MCA)

- **Energy performance contracts:** Allows state agencies and local governments such as counties, cities, school districts, and community colleges to enter into energy performance contracts that conserve energy for buildings and vehicles that those local government units operate. (Title 90, chapter 4, part 11, MCA)
- **High-performance buildings:** Requires the Department of Administration to establish high-performance building standards for state-owned buildings and new state-leased buildings. The standards must exceed the International Energy Conservation Code by 20% to the extent it is cost-effective. (17-7-213, MCA)
- **Conservation in schools:** The 2011 Legislature approved House Bill No. 182 (Chapter 25, Laws of 2011) allowing school districts to issue bonds for conservation measures without a public vote. The bonds are paid back with cost savings from conservation investment.

For local conservation programs, contact your public utility or local electric cooperative. If you have questions about state building energy conservation programs, contact DEQ at (406) 444-6778 or visit the Energize Montana website at <http://www.deq.mt.gov/Energy/>.



Chapter 6: Customer Protection and Assistance

■ Consumer Counsel ■

The Montana Consumer Counsel is a state office created by the Montana Constitution. Under Article XIII, section 2, of the Constitution, the Consumer Counsel is charged with the duty of representing consumer interests in hearings before the PSC or any other successor agency. The Consumer Counsel office is made up of five individuals. There is a Legislative Consumer Committee made up of four legislators that appoints and advises the Consumer Counsel. The goals of the Consumer Counsel are to:

- represent Montana consumers in public utility and transportation proceedings before the PSC;
- represent Montana consumers in appropriate proceedings before the Federal Energy Regulatory Commission, Federal Communications Commission, and other federal administrative agencies;
- represent Montana consumers in appropriate state and federal court proceedings;
- monitor proposed legislation and participate in the legislative process on behalf of Montana consumers before the Montana Legislature and U.S. Congress; and
- participate in activities that will help develop competitive markets in restructured utility industries.

If you have any questions or concerns regarding the activities that the Consumer Counsel is involved in or should be involved in, contact the

Consumer Counsel by telephone at (406) 444-2771 or by e-mail at robnelson@mt.gov.

■ Low-Income Assistance ■

There are private and governmental programs in Montana that assist low-income electricity consumers. Mechanisms for assisting low-income consumers include bill discounts, deferred or delayed payment, direct financial assistance, and home weatherization programs. Many of the low-income electricity programs are funded either through federal money allocated to the state or through a universal system benefits program (USBP) charge assessed to electricity and gas consumers. The entities that provide these low-income electricity assistance services are described below.



Low-Income Energy Assistance Program (LIEAP)

LIEAP is a federal program administered by the State of Montana that pays a portion of eligible households' winter heating costs. In most cases, payments are made directly to utility companies and fuel vendors. The DPHHS administers LIEAP throughout Montana. LIEAP is operated by 10 private, nonprofit Human Resource Development Councils (HRDCs) and one Area Agency on Aging. Eligibility for LIEAP aid is limited to those making no more than 60% of the state's median income. The maximum amount that a family of four can earn in order to be eligible for LIEAP in 2012 is \$39,647.

LIEAP also provides funding for low-income household weatherization. Weatherization includes heating system tuneups, air infiltration reduction, and attic, wall, and floor insulation. The weatherization program is operated statewide by 10 private, nonprofit HRDCs and one tribal government.

For LIEAP contact information, see **Appendix B**.



Energy Share of Montana

Energy Share of Montana is a nonprofit organization funded by USBP dollars and private and corporate donations. Energy Share helps Montanans faced with energy emergencies meet their needs by providing bill assistance, furnace safety, weatherization, and refrigerator replacements. Energy Share also has an endowment designed to assist with energy emergency needs of future generations.

Energy Share works with HRDCs to determine eligibility. Energy Share's private funds have no income eligibility restrictions. In order to receive USB assistance from Energy Share, an individual or family must have an annualized income that is at or below industry-recognized levels for low-income energy assistance programs or have a documented exception. For any of Energy Share's funds, successful bill assistance applicants must meet the following guidelines:

- An external force damages the home, causing it to be difficult to heat.
- Hazardous or potentially hazardous conditions exist in the household's heating system.
- The household's source of heating is threatened.

The recommended maximum amount of financial assistance from Energy Share is \$700. Assistance from Energy Share is provided only once in a lifetime unless there are unusual or extreme circumstances or a portion of assistance is repaid.

From time to time, Energy Share also does other pilot projects that benefit low-income families. For Energy Share contact information, see **Appendix B.**

Local Human Resource Development Councils

Local HRDCs are private, nonprofit local organizations that play a critical role in operating LIEAP programs and determining LIEAP and Energy Share eligibility. The HRDCs also operate the low-income weatherization programs across the state.

For HRDC contact information, see **Appendix B**.

Public Utilities and Electric Cooperatives

Public utilities and some electric cooperatives assist low-income Montanans by providing their LIEAP customers with an additional discount on their electric bills. Discounts range from 15% to 30%, depending on the utility and the fuel source. Some utilities and cooperatives also provide flexible payment options and make every effort to avoid discontinuing electric service. Public utilities and electric cooperatives also help fund low-income weatherization.

For public utility and electric cooperative contact information, see **Appendix B**.

Appendix A

Laws that Regulate, Tax, and Provide Incentives by Fuel Source

COAL

Regulatory State Laws Impacting Coal Extraction and Development

- **Article II, section 3, of the Montana Constitution:** Provides that all persons are born free and have certain inalienable rights, including, among other rights, the right to a clean and healthful environment.
- **Article IX, section 1, of the Montana Constitution:** Requires that the state and each person maintain and improve a clean and healthful environment in Montana for present and future generations, requires the Legislature to administer and enforce this duty, and requires the Legislature to provide adequate remedies for the protection of the environmental life support system from degradation and provide adequate remedies to prevent unreasonable depletion and degradation of natural resources.
- **Article IX, section 2, of the Montana Constitution:** Requires that all lands that are disturbed by the taking of natural resources be reclaimed and requires the Legislature to provide effective requirements and standards for reclamation of these disturbed lands.
- **Montana Coal Mining Code:** Imposes certain duties regarding safety requirements to be administered by the Department of Labor and Industry. (Title 50, chapter 73, MCA)
- **Clean Air Act of Montana:** Provides for a permitting process administered by the Department of Environmental Quality (DEQ) to ensure compliance with air emission standards that may apply to coal mining operations. (Title 75, chapter 2, parts 1 through 4, MCA)
- Statutes known as the "**Montana Water Quality Act**": Implement a policy of conserving water resources and protecting water quality,

establish a permitting process administered by DEQ for discharge of mining and industrial wastewater, and provide for enforcement, appeals, and penalties for violation of standards. (Title 75, chapter 5, MCA)

- **The Strip and Underground Mine Siting Act:** Authorizes DEQ to review and regulate new strip-mine and underground-mine site location and reclamation plans, imposes permit requirements for strip and underground mines, and provides for the termination and suspension of permits for noncompliance. (Title 82, chapter 4, part 1, MCA)
- **The Montana Strip and Underground Mine Reclamation Act:** Creates a permitting process for strip and underground coal mining administered by DEQ, requires permit applications to contain comprehensive reclamation plans for all affected lands, and gives investigative and enforcement powers to DEQ. (Title 82, chapter 4, part 2, MCA)
- **Coal impact abatement funding for local governments:** Establishes a special fund to provide grants and loans to assist local governments in dealing with the impacts of large-scale development of coal mines and coal-burning energy facilities. (Title 90, chapter 6, part 2, MCA)
- **Montana Environmental Policy Act (MEPA):** Is not a regulatory act but requires the State of Montana to conduct an environmental review of the impacts of permitting a coal mine. An environmental review document is required before an agency may issue a permit. (Title 75, chapter 1, parts 1 through 3, MCA)

Taxation of Coal

- **Article IX, section 5, of the Montana Constitution:** Provides for the creation of the coal severance tax trust fund and requires the

Legislature to dedicate not less than one-fourth of the coal severance tax to the trust, from which interest and income may be appropriated. This provision also requires that the trust principal remain intact unless appropriated by three-fourths of the members of each house of the Legislature. One-half (50%) of the severance tax has been dedicated to the coal severance tax trust fund since December 31, 1979.

- **Coal severance tax:** Imposes a severance tax on coal mine operators that is computed on each quarter year's worth of production as shown on forms provided by the Department of Revenue. Statutes contain the formula by which the tax is to be computed, with rates based on the heating quality of the coal and the amount of coal produced. The 2009 Legislature revised when the Department of Revenue can impute the value of coal and provided that the cost of washing and cleaning coal mined from an underground mine is not included in the contract sales price. The 2009 changes sunset in 2017. (Title 15, chapter 35, MCA)
- **The Montana Resource Indemnity Trust and Ground Water Assessment Act:** Indemnifies the citizens of Montana for the loss of long-term value resulting from the depletion of Montana's mineral resource base and for environmental damage caused by mineral development. This Act establishes a permanent resource indemnity trust, funded through revenue generated from a tax levied on mineral extraction. Proceeds from the trust are to be expended for the purpose of protecting and restoring the environment from damages resulting from mineral development and for supporting a variety of economic development programs to benefit Montana and its citizens. The Act contains provisions that specify the amount of tax to be paid on different types of mineral production. (Title 15, chapter 38, MCA)
- **Coal gross proceeds tax:** Provides for a system of reporting by producers and allocation of the tax by the Department of Revenue to local governments and directs the Department of Revenue to tax coal

gross proceeds at 5% of reported value. (See 2011 changes under "Incentives" below.) (Title 15, chapter 23, part 7, MCA)

Incentives for Coal Production

- **Property tax exemption:** Provides an exemption from property taxation of one-half the contract sales price of coal sold by a coal producer who extracts less than 50,000 tons of coal each year. (15-6-208, MCA)
- **Reclamation and Development Grants Program Act:** Authorizes the Department of Natural Resources and Conservation (DNRC) to fund projects that will indemnify the people of Montana against the effects of coal and other mineral development. The purposes of the program are to repair and mitigate environmental damage resulting from the extraction of nonrenewable resources. (Title 90, chapter 2, part 11, MCA)
- **Severance tax reduction:** The severance tax rate on coal recovered from a strip mine using auger mining is reduced based on legislation approved by the 2009 Legislature. The reduced rate applies to coal recovered from mining operations that would otherwise be uneconomical to recover by strip-mining methods. (15-35-103, MCA)
- **Local tax abatement:** Approved in 2011, provides that the tax abatement may be 50% or less for an underground mine taxed at 5% of the value of coal and provides an initial coal gross proceeds tax of 2.5% on coal produced from a new or existing underground mine for an initial 10-year period. Allows local government to set the local tax abatement on other mines at 50% or less. (15-23-703 and 15-23-715, MCA)

NATURAL GAS

Regulatory State Laws Impacting Natural Gas Extraction and Development

- **As with coal, the following laws (discussed above) apply to natural gas extraction and development:** Article II, section 3, and Article IX, sections 1 and 2, of the Montana Constitution, the Clean Air Act of Montana, statutes known as the Montana Water Quality Act, and the Montana Environmental Policy Act.
- **Montana Major Facility Siting Act:** Administered by DEQ, requires that any new natural gas pipeline that is greater than 25 inches in diameter and 50 miles in length go through a siting certification process. (Title 75, chapter 20, MCA)
- **Underground gas storage reservoirs:** Provides that it is the policy of the state that the conservation of natural gas by means of underground storage and the creation of reserves of stored natural gas are in the public interest, gives natural gas public utilities the power of eminent domain in order to develop underground reservoirs, and outlines a certification procedure administered by the Board of Oil and Gas Conservation. (Title 82, chapter 10, part 3, MCA)
- **Abandoned gas wells and reclamation:** Requires that notice be given to the surface owner before any oil or gas well can be plugged or abandoned and requires the Board of Oil and Gas Conservation to maintain a record of plugged and abandoned oil and gas wells in the state. (Title 82, chapter 10, part 4, MCA)
- **Surface owner damage and disruption compensation:** Establishes a procedure for the compensation by means of "surface damage disruption payments" to the surface owner of lands disturbed by gas drilling operations, establishes notice requirements for drilling operations, imposes liability on the part of the oil and gas developer or operator for damages to property, and provides a procedure for

the settlement of surface damage claims. (Title 82, chapter 10, part 5, MCA)

- **Regulation of gas wells by the Board of Oil and Gas Conservation:** Provides for the regulation of oil and gas development by the Board of Oil and Gas Conservation, sets forth the powers and duties of the Board, establishes requirements for oil and gas operations, and authorizes the Board to establish well spacing units and plans for unit operations. The State of Montana is directed to become a member of the Interstate Compact to Conserve Oil and Gas, and provisions of the Compact are set forth. (Title 82, chapter 11, MCA)
- **Montana Water Use Act:** Establishes an application and permitting process administered by DNRC for the appropriation of water. (Title 85, chapter 2, parts 3 and 4, MCA)

Taxation of Natural Gas

- **See discussion of Article IX, section 2, of the Montana Constitution** and the Montana Resource Indemnity Trust and Ground Water Assessment Act above.
- **Montana Oil and Natural Gas Production Tax Act:** Provides for state and local government production taxes on the gross value of petroleum and other mineral or crude oil and natural gas and for the allocation of tax revenue to state and local governments with certain exemptions and incentives for new production. (Title 15, chapter 36, part 3, MCA)
- **Oil and gas privilege and license tax:** Authorizes the imposition of a privilege and license tax for the purpose of funding the operations of the Board of Oil and Gas Conservation. The tax is to be collected by the Department of Revenue in the same manner as the Department collects the oil and gas production tax under Title 15,

chapter 36, part 3, MCA. The tax may not exceed 3/10 of 1% of the market value of each barrel of crude petroleum or each 10,000 cubic feet of natural gas produced. (82-11-131, MCA)

Regulation and Incentives for Advanced Fossil Fuel Technologies

- **Geologic carbon sequestration:** Provides a potential regulatory framework for the permitting of geologic carbon sequestration projects. The Board of Oil and Gas Conservation has regulatory oversight and is required to seek primacy over carbon dioxide injection wells regulated pursuant to the Underground Injection Control Program. The surface owner is established as the owner of geologic storage reservoirs unless documentation, such as deeds, shows otherwise. The state accepts liability for a storage reservoir and the stored carbon after 30 years if certain conditions are met. (Title 82, chapter 11, part 1, MCA)
- **Common carrier pipelines:** Grants common carrier status to pipelines that move carbon dioxide produced in the combustion or gasification of fossil fuels. The right of eminent domain, established in Title 70, chapter 30, MCA, may be exercised for public uses, including common carrier pipelines. (Title 69, chapter 13, MCA)
- **In situ coal:** Defines "in situ coal gasification" and directs the Board of Environmental Review to adopt rules for in situ coal gasification. (Title 82, chapter 4, part 2, MCA)
- **Microbial conversion:** Grants the Board of Oil and Gas Conservation rulemaking authority to regulate well injections to restore or enhance the microbial conversion of hydrocarbon substrates to methane gas as Class II injection wells. (Title 82, chapter 11, part 1, MCA)
- **Property tax abatement for equipment:** Provides an abatement from property taxation of clean advanced coal research and

development equipment, up to the first \$1 million of the value of the equipment, of 50% of the taxable value for the first 15 years after the equipment is purchased. Equipment placed into service after June 30, 2007, is eligible. The total time may not exceed 19 years, and there are additional conditions. The equipment must be certified by the Department of Environmental Quality. (Title 15, chapter 24, part 31, MCA)

- **Property tax abatement for facilities:** Provides an abatement from property taxation on coal gasification facilities that sequester at least 65% of the carbon dioxide produced at the operation of 50% of the taxable value for the first 15 years after the facility commences operation. Construction of the facility must have commenced after June 1, 2007. The total time may not exceed 19 years, and there are additional conditions. Integrated gasification combined cycle facilities that apply for a permit after December 31, 2014, do not qualify. (Title 15, chapter 24, part 31, MCA)
- **Property tax abatement for facilities:** Provides an abatement from property taxation of natural gas combined cycle facilities that offset a portion of the carbon dioxide produced through carbon offsets of 50% of the taxable value for the first 15 years after the facility commences operation. Construction of the facility must have commenced after June 1, 2007. The total time may not exceed 19 years, and there are additional conditions. (Title 15, chapter 24, part 31, MCA)

GEOHERMAL

Regulatory State Laws Impacting Geothermal Development

- **As with coal and natural gas, the following laws (discussed above) apply to geothermal development:** Article II, section 3, and Article IX, sections 1 and 2, of the Montana Constitution, the Clean Air Act of Montana, statutes known as the Montana Water Quality Act, and the Montana Environmental Policy Act.

- **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. (Title 75, chapter 20, MCA)
- **Geothermal exploration:** Directs the Board of Environmental Review to regulate geothermal exploration. (75-20-1001, MCA)
- **Montana Water Use Act:** Establishes an application and permitting process administered by DNRC for the appropriation of water. (Title 85, chapter 2, parts 3 and 4, MCA)

Taxation of Geothermal

- **All property of a geothermal facility is class fourteen property** taxed at 3% of its market value. (15-6-157, MCA)

Incentives for Geothermal Development

- **Tax credit:** Provides for a credit against individual income tax liability for a taxpayer constructing a new residence who installs 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. (15-32-115, MCA)
- **Tax credit:** Provides an income tax credit for an individual taxpayer who installs 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)
- **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% 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. (15-32-402, MCA)

- **Reclamation and Development Grants Program Act:** Implements a legislative policy of funding projects designed to indemnify Montana citizens for the impact of mineral development. (Title 90, chapter 2, part 11, 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 the start of operation. (15-6-225, MCA)
- **Property tax reduction:** Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50% of taxable value during the first 5 years after the construction permit is issued. (Title 15, chapter 24, part 14, 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. Loans up to a maximum of \$40,000 must be repaid within 10 years. The rate for 2011 is 4%. (75-25-101, MCA)
- **Property tax abatement for facilities:** Provides an abatement from property taxation of geothermal facilities of 50% of taxable value for the first 15 years after the facility commences operation. Construction of the facility must have commenced after June 1, 2007. The total

time may not exceed 19 years, and there are additional conditions. (Title 15, chapter 24, part 31, 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 for a single-family residential dwelling or \$100,000 for a multifamily residential dwelling or nonresidential structure. (15-6-224, MCA)
- **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. (90-3-1301, MCA)

WIND

Regulatory State Laws Impacting Wind Development

- **Easements:** Establishes parameters for wind easements and wind energy rights. Wind energy rights are defined as property rights and are appurtenant to the surface estate. Provides for wind easements, wind option agreements, and wind energy agreements and establishes their minimum requirements. (Title 70, chapter 17, MCA)
- **Associated activities surrounding wind development** that affect air or water quality may require permits from DEQ. MEPA may apply. The federal endangered species and migratory bird acts may be triggered with commercial wind development. The DEQ hosts a website with information about permitting for wind in Montana: <http://www.deq.mt.gov/energy/renewable/windweb/WindPermits.mcp>

Taxation of Wind

- **Wind generation facilities with a nameplate capacity greater than 1 megawatt** are generally class fourteen property taxed at 3% of market value. (15-6-157, MCA)
- **Impact fee:** 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 0.5% of the total construction cost. (15-24-3004, MCA)

Incentives for Wind Development

- **Tax credit:** Provides an income tax credit for an individual taxpayer who installs 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)
- **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 for a single-family residential dwelling or \$100,000 for a multifamily residential dwelling or nonresidential structure. (15-6-224, 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% 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. (15-32-402, 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 the start of operation. (15-6-225, MCA)
- **Property tax reduction:** Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50% of taxable value during the first 5 years after the construction permit is issued. (Title 15, chapter 24, part 14, 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. Loans up to a maximum of \$40,000 must be repaid within 10 years. The rate for 2011 is 4%. (75-25-101, MCA)
- **Net metering:** NorthWestern Energy 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. Electric cooperatives also offer net metering. (Title 69, chapter 8, MCA)
- **Research grants:** An Energy Development and Demonstration Grant Program established by the 2009 Legislature provides grants in amounts up to \$500,000 to entities that advance the development and utilization of energy storage systems, including fuel cells and compressed air energy storage systems. The DEQ administers the program. (90-4-1005, MCA)

SOLAR

Regulatory State Laws Impacting Solar Development

- **Easements:** Imposes certain conditions on easements created for the purpose of ensuring the unencumbered exposure of solar energy devices across real property in connection with the generation of solar energy. Solar energy easements are required to be in writing and must include, among other things, the vertical and horizontal angles, expressed in degrees, at which the solar easement extends over the servient tenement and any terms or conditions under which the solar easement is granted or may be terminated. (Title 70, chapter 17, part 3, MCA)

Incentives for Solar Development

- **Tax credit:** Provides an income tax credit for an individual taxpayer who installs 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)
- **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 for a single-family residential dwelling or \$100,000 for a multifamily residential dwelling or nonresidential structure. (15-6-224, 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% 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. (15-32-402, 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 the start of operation. (15-6-225, MCA)
- **Property tax reduction:** Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50% of taxable value during the first 5 years after the construction permit is issued. (Title 15, chapter 24, part 14, 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. Loans up to a maximum of \$40,000 must be repaid within 10 years. The rate for 2011 is 4%. (75-25-101, MCA)
- **Net metering:** NorthWestern Energy 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. Electric cooperatives also offer net metering. (Title 69, chapter 8, MCA)
- **Research grants:** An Energy Development and Demonstration Grant program established by the 2009 Legislature provides grants in amounts up to \$500,000 to entities that advance the development and utilization of energy storage systems, including fuel cells and compressed air energy storage systems. The DEQ administers the program. (90-4-1005, MCA)

FALLING WATER (HYDROELECTRIC FACILITIES)

Regulatory State and Federal Laws Impacting Hydroelectric Development

- **Nonfederal HYDROELECTRIC POWER PLANTS on navigable waters** of the United States, those that occupy federal land or use water power from a government dam, or those that, under certain circumstances, affect the interest of interstate or foreign commerce must be licensed by the Federal Energy Regulatory Commission (FERC). Navigable waters of the United States include virtually all waters in Montana and the other 49 states. As a result, FERC is the lead agency in the licensing of new hydropower facilities and in the relicensing of existing facilities. FERC, acting under federal statutory authority, processes and evaluates the federal applications required for all hydropower dams, diversions, and other hydropower developments, reviews and analyzes environmental impacts of hydropower projects and determines appropriate mitigation and enhancement measures, and sets requirements governing the sale of the hydropower generation at the wholesale level.
- **There are five primary subject areas** in which state regulation of hydroelectric power must be considered in addition to the federal requirements established by FERC. These areas are:
 - (1) water rights permits;
 - (2) 310 permit for altering a perennial stream;
 - (3) water quality certification under Section 401 of the federal Clean Water Act;
 - (4) fish and wildlife impact evaluation (no permit required); and
 - (5) Montana Major Facility Siting Act state filing with FERC for hydrofacilities over 50 megawatts.
- **In addition, a 404 permit** is required from the U.S. Department of the Army, Corps of Engineers, for any dredge and fill activity or other work affecting United States waters or wetlands.

Incentives for Hydroelectric Facility Development

- **Net metering:** NorthWestern Energy 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. The generating capacity can't be greater than 50 kilowatts. Electric cooperatives also offer net metering. (Title 69, chapter 8, 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 the start of operation. (15-6-225, MCA)
- **Study and development:** Requires the Department of Natural Resources and Conservation to report to the Energy and Telecommunications Interim Committee on feasibility studies to assess water projects owned or controlled by the state for electricity generation potential. (85-1-501, MCA)

BIOMASS

Regulatory State Laws Impacting Biomass Development

- **Associated activities surrounding biomass** development that affect air or water quality may require permits from DEQ. (See 2011 changes under "Incentives" below.)

Taxation of Biomass

- **All property of a biomass gasification facility and biomass generation** facilities up to 25 megawatts are class fourteen property taxed at 3% of its market value. (15-6-157, MCA)

Incentives for Biomass Development

- **Tax exemption:** Provides for the appraised value of a capital investment in biomass combustion devices to be exempt from taxation for 10 years on \$20,000 for a single-family residential dwelling or \$100,000 for a multifamily residential dwelling or nonresidential structure. (15-6-224, 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 the start of operation. (15-6-225, MCA)
- **Tax credit:** Provides an income tax credit for an individual taxpayer who installs 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)
- **Property tax abatement for facilities:** Provides an abatement from property taxation of biomass gasification facilities of 50% of its taxable value for the first 15 years after the facility commences operation. Construction of the facility must have commenced after June 1, 2007. The total time may not exceed 19 years, and there are additional conditions. (Title 15, chapter 24, part 31, 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. Loans up to a maximum of \$40,000 must be repaid within 10 years. The rate for 2011 is 4%. (75-25-101, 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% 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. (15-32-402, MCA)
- **Property tax reduction:** Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50% of taxable value during the first 5 years after the construction permit is issued. (Title 15, chapter 24, part 14, MCA)
- **Air quality exemption:** Clarifies the powers of the Board of Environmental Review related to air quality permitting and rulemaking for forestry equipment and excludes most equipment from permitting requirements. (75-2-111, MCA)

ETHANOL AND BIODIESEL

Regulatory State Laws Impacting Ethanol and Biodiesel Development

- **Associated activities surrounding ethanol and biodiesel development** that affect air or water quality may require permits from DEQ. Licensing requirements for suppliers also are established.

Taxation of Ethanol and Biodiesel

- **All property of a biodiesel production** or ethanol production facility that commences construction after June 1, 2007, is class fourteen property taxed at 3% of its market value. (15-6-157, MCA)

- **The 2009 Legislature eliminated** the license tax rate reduction for ethanol, which previously was 85% of the 27-cent-per-gallon tax. (15-70-204, MCA)

Incentives for Ethanol and Biodiesel Development

- **Property tax abatement:** Provides for the classification of personal or real property used in the production of ethanol-blended fuel, during construction and for the first 3 years of operation, as class five property taxable at 3% of market value. (15-6-135, MCA)
- **Property tax exemption:** Provides a property tax exemption for all property used in the production of ethanol from grain during the course of construction of an ethanol manufacturing facility and for 10 years after initial production of ethanol from the facility. (15-6-220, MCA)
- **Fuel use:** All branches of state government and state institutions of higher education owning or operating a motor vehicle capable of burning ethanol-blended fuel must take reasonable steps to ensure that ethanol-blended fuel is used when commercially available. (2-17-414, MCA)
- **Tax incentives:** (Ethanol Tax Incentive and Administration Act of 1983) Establishes various tax incentives for the production of ethanol to be blended for ethanol-blended gasoline and provides for a system of recordkeeping. (Title 15, chapter 70, part 5, MCA) Establishes various tax incentives for biodiesel producers. (Title 15, chapter 70, part 6, MCA)
- **Exemption:** Exempts from the special fuel tax a fuel user who produces less than 2,500 gallons annually of biodiesel using waste from vegetable oil feedstock and reports the production to the Department of Transportation. (15-70-320, MCA)

- **Tax credit:** Establishes various tax credits for biodiesel production, blending, and storage. (Title 15, chapter 32, part 7, MCA)
- **Tax refund:** Ethanol distributors may see a refund of the gasoline license tax. (15-70-221, MCA) A biodiesel distributor may see a refund equal to 2 cents a gallon of the fuel tax on biodiesel made from Montana ingredients. The owner or operator of a retail motor fuel outlet may claim a refund of 1 cent a gallon. (15-70-369, MCA)
- **Required use:** Requires use of gasoline blended with ethanol once Montana produces 40 million gallons of denatured ethanol. (82-15-121, MCA)
- **Tax credit:** Income tax credit for an individual or business (up to \$500 for vehicle weight of 10,000 pounds or \$1,000 for heavier vehicles) for conversion of a vehicle to use alternative fuels, including E-85. (15-30-2320, MCA)
- **Property tax abatement for facilities:** Provides an abatement from property taxation of ethanol and biodiesel production facilities of 50% of its taxable value for the first 15 years after the facility commences operation. Construction of the facility must have commenced after June 1, 2007. The total time may not exceed 19 years, and there are additional conditions. (Title 15, chapter 24, part 31, MCA)

COGENERATION

Regulatory State Laws Impacting Cogeneration Development

- **The PSC regulates** "qualifying small power production facilities" and authorizes COGENERATION by qualifying small power production facilities and the sale of the electricity produced under rates and conditions prescribed by the PSC. (Title 69, chapter 3, part 6, MCA)
- **The 2011 Legislature changed** aspects of the regulation of "qualifying small power production facilities" by enacting HB 233

(Chapter 69, Laws of 2011) requiring certain qualifying small facilities to accept a rate schedule approved by the PSC and extending the time within which the PSC is required to render a decision. HB 92 (Chapter 60, Laws of 2011) requires the PSC to set rates for qualifying small facilities using avoided costs over the term of a contract.

- **Associated activities surrounding** cogeneration development that affect air or water quality may require permits from DEQ. MEPA may apply.

Incentives for Cogeneration Development

- **Federal Public Utility Regulatory Policies Act of 1978 or "PURPA", 16 U.S.C. 824a-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)

HYDROGEN

Regulatory State Laws Impacting Hydrogen Development

- Associated activities surrounding hydrogen development that affect air or water quality may require permits from DEQ. MEPA may apply.

Incentives for Hydrogen Development

- **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, including fuel cells that do not require hydrocarbon fuel, 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 rate for 2011 is 4%. (75-25-101, 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, including fuel cells that don't use hydrocarbons, are exempt from property taxes for 5 years after the start of operation. (15-6-225, MCA)
- **Property tax reduction:** Generating plants using alternative fuels that produce at least 1 megawatt are taxed at 50% of taxable value during the first 5 years after the construction permit is issued. (Title 15, chapter 24, part 14, MCA)
- **Tax exemption:** Provides for the appraised value of a capital investment in a nonfossil form of energy generation, including fuel cells that don't require hydrocarbon fuel, to be exempt from taxation for 10 years on \$20,000 for a single-family residential dwelling or \$100,000 for a multifamily residential dwelling or nonresidential structure. (15-6-224, MCA)
- **Tax credit:** Provides an income tax credit for an individual taxpayer who installs in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation, including fuel cells that don't require hydrocarbon fuel. The credit may not exceed \$500. (15-32-201, MCA)
- **Tax credit:** Income tax credit for an individual or business (up to \$500 for vehicle weight of 10,000 pounds or \$1,000 for heavier vehicles) for conversion of a vehicle to use alternative fuels, including hydrogen. (15-30-2320, MCA)

Appendix B

State Energy Information Resources

Consumer Counsel http://leg.mt.gov/css/committees/administration/consumer_counsel/default.asp	(406) 444-2771
Department of Commerce, Board of Investments http://www.investmentmt.com/	(406) 444-0001
Department of Commerce, Energy Promotion and Development Division http://commerce.mt.gov/energy/default.mcp	(406) 841-2030
Department of Environmental Quality Planning, Prevention, and Assistance Division http://www.deq.mt.gov	(406) 444-6697
Legislative Services Division http://leg.mt.gov/css/default.asp	(406) 444-3064
Department of Public Health and Human Services Low-Income Energy Assistance Program http://www.dphhs.mt.gov/programsservices/energyassistance/index.shtml	(406) 447-4260
Northwest Power and Conservation Council http://www.nwcouncil.org/	(406) 444-3952
Public Service Commission http://www.psc.mt.gov	(406) 444-6199
Energy Share of Montana http://www.energysharemt.com/	(406) 442-4900 888-779-7589

Human Resource Development Councils (406) 447-4260
<http://www.dphhs.mt.gov/programsservices/energyassistance/eligibilityoffices.shtml>

Montana-Dakota Utilities Co. (800) 638-3278
<http://www.montana-dakota.com/>

NorthWestern Energy (888) 467-2669
<http://www.northwesternenergy.com/>

Montana Electric Cooperatives' Association (406) 761-8333
<http://www.mtco-ops.com/>

Glossary of Electricity Terms

Amperage: The amount of electrical energy flowing through an appliance at any given time. This measurement is expressed in units called AMPERES, often shortened to amps.

Ampere: The unit of measurement of electrical current produced in a CIRCUIT by 1 volt acting through a resistance of 1 OHM.

Capacity: The amount of electric power that a generator, turbine, transformer, transmission circuit, station, or system is capable of producing or delivering.

Circuit: A conductor or a system of conductors through which electric current flows.

Coal: A black or brownish-black solid combustible substance formed by the partial decomposition of vegetable matter without free access to air and under the influence of moisture and, often, increased pressure and temperature. The rank of coal (anthracite, bituminous, subbituminous, and lignite) is determined by its heating value.

Cogeneration: A process that sequentially produces useful energy (thermal or mechanical) and electricity from the same energy sources.

Contract Path: A path across portions of the interconnected grid, owned by two or more different owners, for which a transaction has gained contractual permission from the owners or other rights holders with transferable rights.

Current (Electric): A flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes.

Demand: The rate at which electric energy is delivered to a system, part of a system, or a piece of equipment at a given instant or during a designated period of time (see Load).

Distribution: Relatively small, low-voltage wires used for delivering power from the transmission system to the local electric substation and to electric consumers.

Federal Energy Regulatory Commission (FERC): The federal agency that regulates interstate and wholesale power transactions, including power sales and transmission services, as well as licensing of dams on rivers under federal jurisdiction (formerly the Federal Power Commission).

Fossil Fuel: Any naturally occurring fuel of an organic nature, such as coal, crude oil, and natural gas.

Fuel: Any substance that, for the purpose of producing energy, can be burned, otherwise chemically combined, or split or fused in a nuclear reaction.

Generation (Electric): The production of electric energy from other forms of energy; also, the amount of electric energy produced, expressed in kilowatt-hours (kWh).

High voltage: Voltage levels generally at or above 69 kV. Some utilities also count 50 kV and 69 kV lines as transmission lines. Transmission lines in Montana are built at voltage levels of 100 kV, 115 kV, 161 kV, 230 kV, and 500 kV. In other states, lines have also been built at 345 kV and 765 kV. Canadian utilities build at still other voltage levels. Direct current transmission lines have been built at +/- 400 kV, which may sometimes be described as 800 kV.

Horsepower: A unit of power equal to 746 watts.

Hydroelectric Power Plant: A plant in which the turbine generators are driven by falling water.

Inadvertent Flows: Portions of power transactions that flow over portions of the interconnected grid and that are not on the contract path for the transaction.

Integrated Gasification Combined Cycle Facility: An electrical generation facility that uses a coal gasification process and routes gas to a combustion turbine to generate electricity and captures the heat from the combustion to drive a steam turbine to produce more electricity. The facility may also use incidental amounts of natural gas or other fuels in the combustion turbine.

Load (Electric): The amount of electric power delivered or required at any specific point or points on a system. The requirement originates at the energy-consuming equipment of the consumers.

Natural Gas: A mixture of hydrocarbon compounds and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in natural underground reservoirs at reservoir conditions. The principal hydrocarbons usually contained in the mixture are methane, ethane, propane, butane, and pentanes.

Ohm: The unit of measurement of electrical resistance. The resistance of a circuit in which a potential difference of 1 volt produces a current of 1 ampere.

Power: The rate at which energy is transferred. Electrical energy is usually measured in watts. Also used for a measurement of capacity.

Public Utility Regulatory Policies Act of 1978 (PURPA): This act first required utilities to buy power from qualifying independent power producers.

Public Utility: Any investor-owned utility that is regulated by the Montana Public Service Commission.

Qualifying Facilities: Small-scale renewable power producers or cogenerators that meet the capacity, fuel source, and operational criteria set forth by the Public Utility Regulatory Policies Act (PURPA), its implementing regulations, and state law corollaries.

Renewable Energy: Energy obtained from sources that are essentially sustainable (unlike, for example, the fossil fuels, of which there is a finite supply). Renewable sources of energy include wood, waste, solar radiation, falling water, wind, and geothermal heat.

Transmission: High-voltage electric wires used for bulk movement of large volumes of power across relatively long distances. Compare this with distribution, which is composed of relatively smaller, lower-voltage wires used for delivering power from the transmission system to the local electric substation and to electric consumers.

Volt: A unit of electromotive force. It is the amount of force required to drive a steady current of 1 ampere through a resistance of 1 ohm. Electrical systems of most homes and offices have 120 volts.

Voltage: An electromotive force or potential difference expressed in VOLTS.

Watt: The electrical unit of power or rate of doing work. A watt is the rate of energy transfer equivalent to 1 ampere flowing under pressure of 1 volt. It is analogous to horsepower or foot-pound-per-minute of mechanical power. One horsepower is equivalent to approximately 746 watts.

Western Interconnection: The interconnected, synchronous transmission grid extending from British Columbia and Alberta in the north to the U.S.-Mexican border in the south and from the Pacific Coast to a line extending from the Alberta-Manitoba border through eastern Montana, eastern Wyoming, western Nebraska, and the extreme west part of Texas.

