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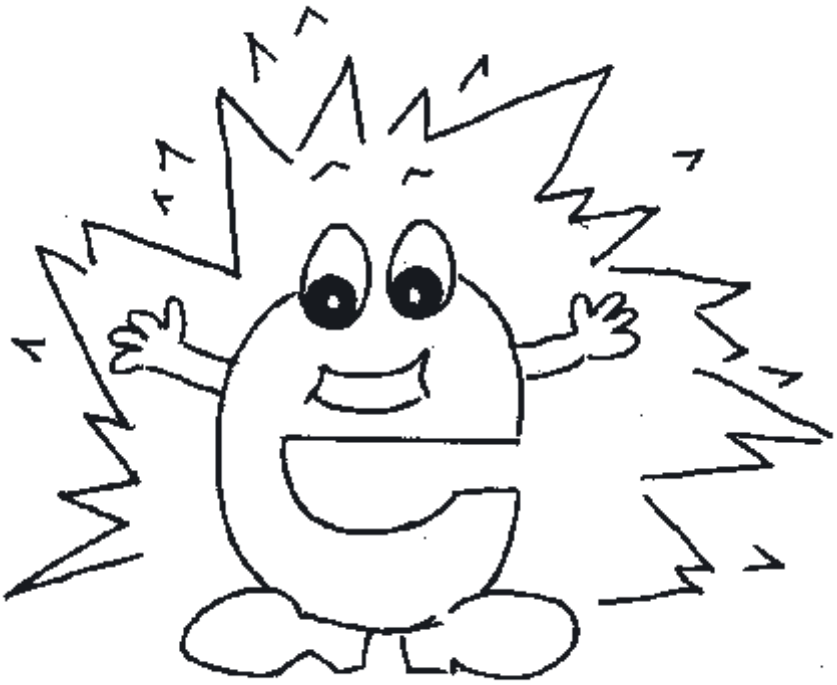
The Electricity Law Handbook: A Montanan's Guide to Understanding Electricity Law



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Cover and other artwork by Chelly Hasquet

The Electricity Law Handbook: A Montanan's Guide to Understanding Electricity Law

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ACKNOWLEDGMENTS

This Electricity Law Handbook was developed by the legislative Environmental Quality Council in an effort to help Montana citizens better understand our electricity laws. The information contained in this handbook is a result of input and review from legislators, consumers, public interest groups, industry representatives, state regulators, and interested citizens.

DISCLAIMER

The Electricity Law Handbook should not be used as a legal reference. This handbook 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. The only time that we seem to stand up and take notice is if the price of electricity rises. However, Montana's electricity laws, especially those concerning deregulation of our energy supply prices and environmental considerations regarding electricity generation, have evoked a lot of public attention and scrutiny over the past several years.

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 handbook is to explain in a straightforward, easy to understand manner how electricity law works in Montana and, more importantly, how those laws impact Montana's consumers. Our goal is to encourage thoughtful, effective involvement in Montana's electricity law development and implementation.

The Legislative Environmental Quality Council, 2002.

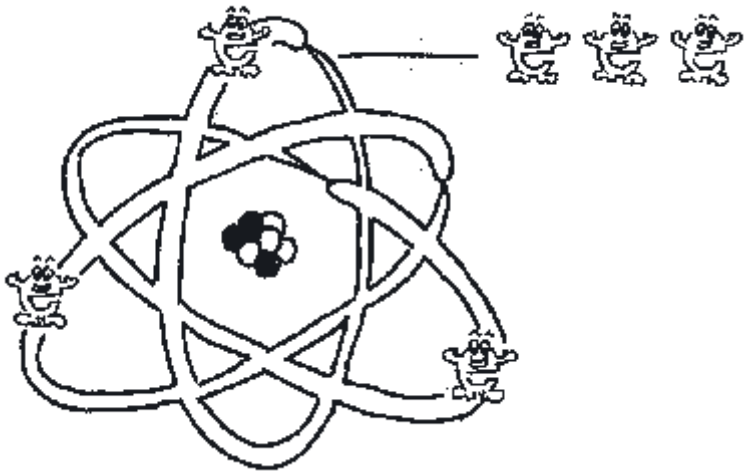
Chapter 1: Introduction. Electricity and Montanans--How Does It All Work?

A simplified primer on electricity: What is electricity? How is it generated, transmitted, and measured?

What is electricity?

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? 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 (see figure 1). 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.

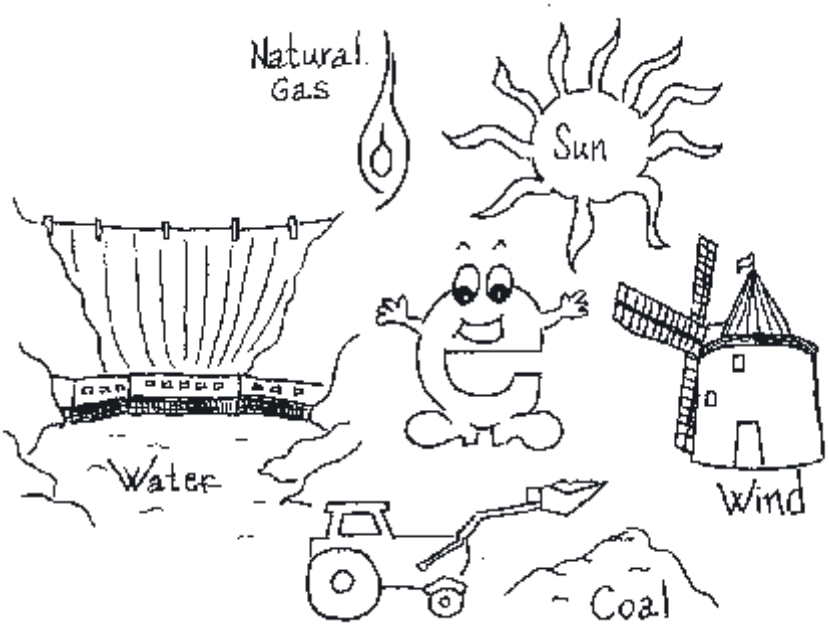
Figure 1. Electricity is the flow of charged particles



How is electricity generated?

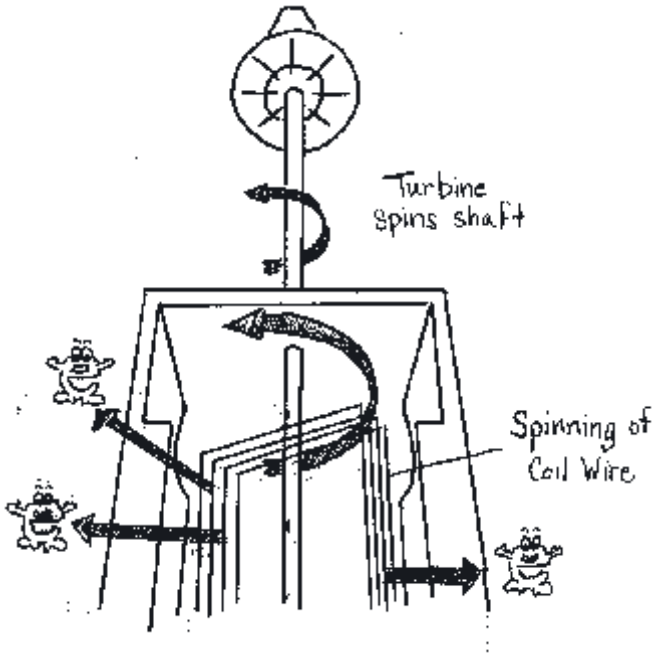
Electricity is considered a secondary source of energy. In order to produce electricity, we need to convert other sources of energy, like water, coal, oil, natural gas, geothermal heat and steam, biomass, wind, and solar, called primary sources, into electricity (see figure 2). The process of converting primary sources of energy to electricity is called electricity generation.

Figure 2. Electricity is produced by converting other sources of energy



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. This workhorse energy drives a generator that converts chemical or mechanical energy to electricity by forcing electrons to separate from atoms and begin flowing over wires (see figure 3). Electric generators include steam turbines, wind turbines, water turbines, gas combustion turbines, photovoltaics, fuel cells, and internal combustion engines.

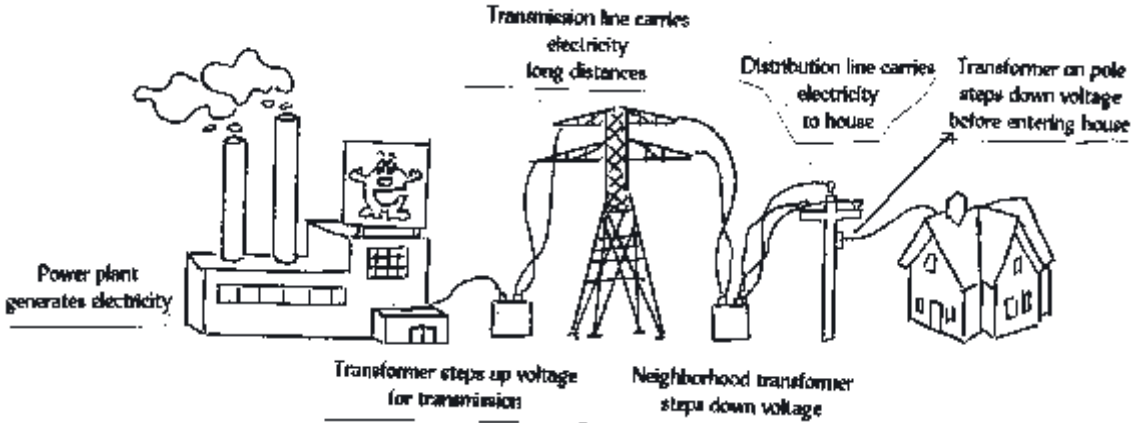
Figure 3. A generator converts chemical or mechanical energy to electricity



Once electricity is generated, how does it get to my house or business?

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. 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 (see figure 4).

Figure 4. Distribution lines carry electricity 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.

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 (see figure 5). The key point here is that we don't produce, consume, or transmit electricity in Montana in isolation of 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.

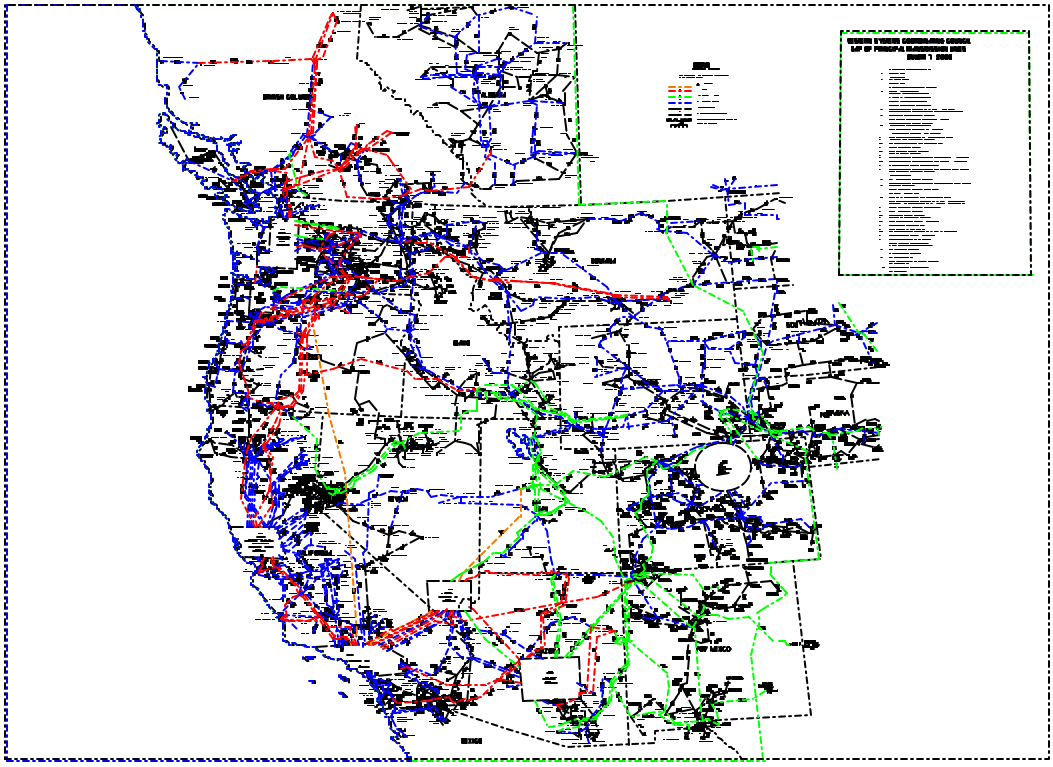
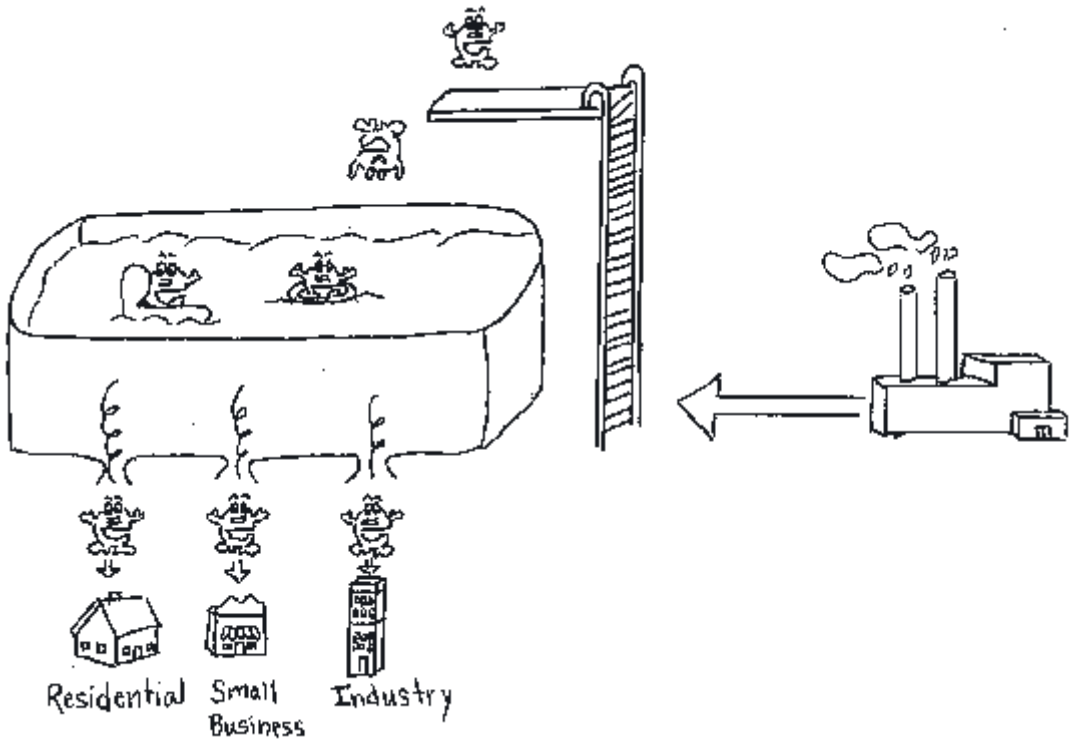


Figure 5. Western Interconnection Transmission System

How does electricity flow over this spider web network of transmission and distribution lines? 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 resistence (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 big 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 (see figure 6).

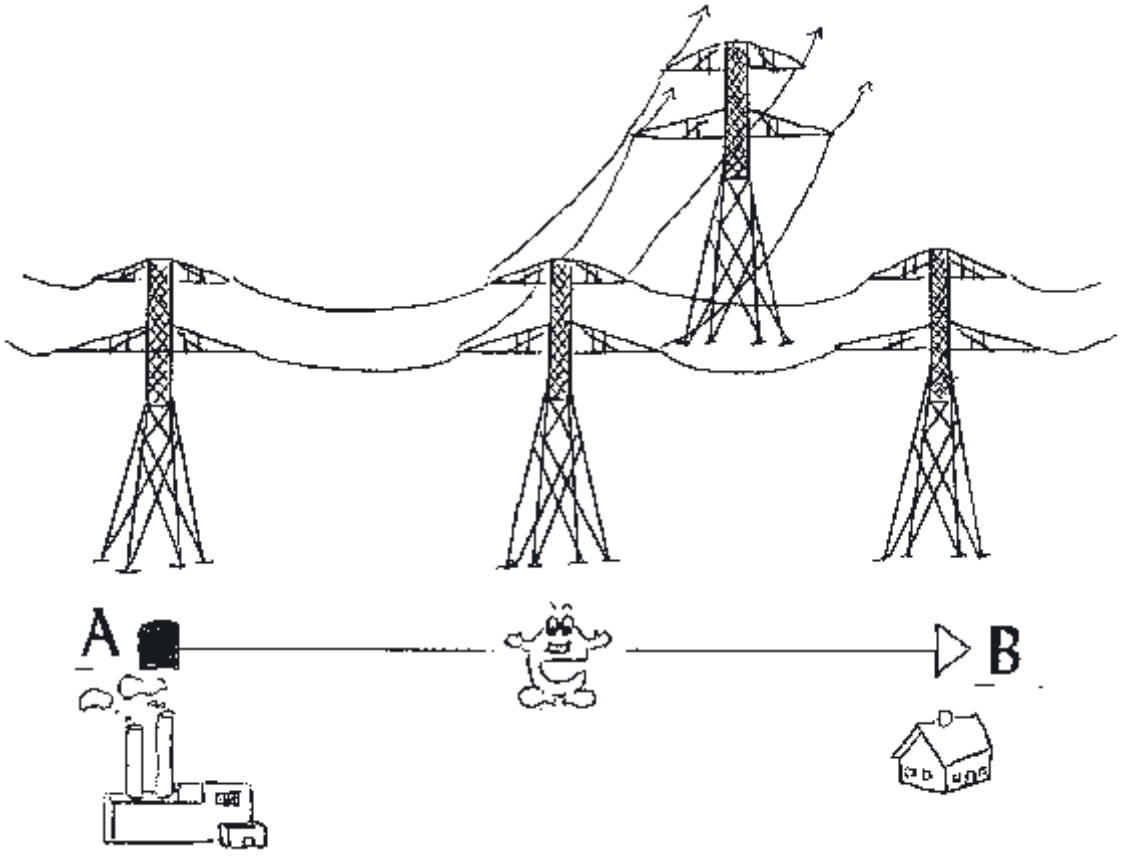
Figure 6. The entire transmission and distribution network is like a giant swimming pool of electricity produced from thousands of generators



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 (see figure 7). 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 (see figure 7). The contract must account for inadvertent flows.

Figure 7. It is necessary to purchase capacity to transmit electricity on a transmission or distribution line



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.

How is electricity measured?

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

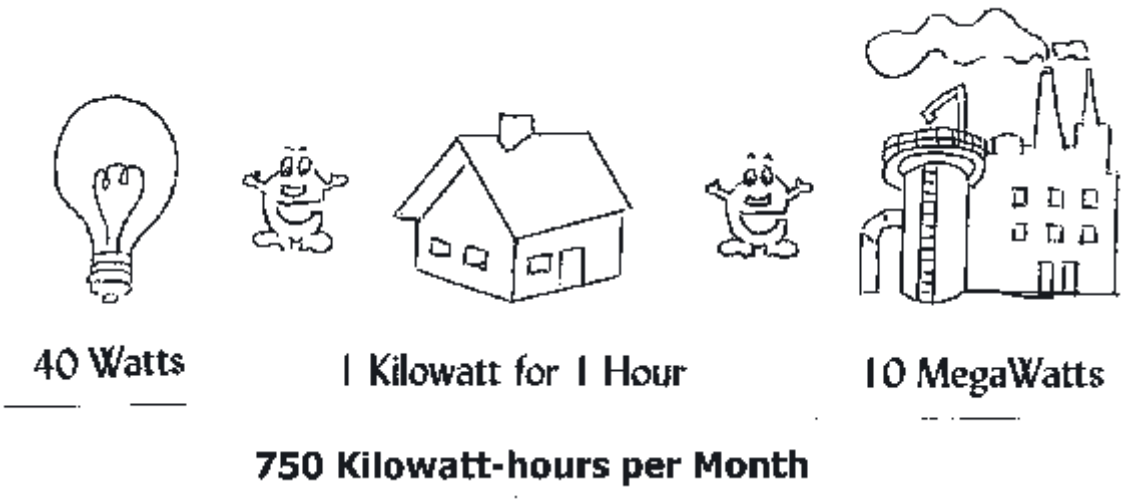


Figure 8. Illustration of Kilowatt usage

What is electricity law?

As discussed above, there are the physical laws governing electricity, but 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, electricity law can be organized into four areas:

- statutes that articulate state energy policy;
- statutes, rules, orders, or local ordinances that regulate or tax primary fuels, electrical generation, service, service territories, transmission, and price;
- statutes, rules, orders, or local ordinances that provide incentives for primary fuels, electrical generation, service, transmission, and price; and
- court cases that provide legal opinions on the regulation and taxation of primary fuels, electrical generation, service, service territories, transmission, and price.

In addition to these four organizational electricity law areas, there are three governmental sources of energy law:

- the federal government;
- Montana state government; and
- local governments in Montana.

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

Who are the electricity players in Montana? What role do they play?

Some of the chapters of this handbook explain 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 legislative Environmental Quality Council has general energy policy statutory authority. The Transition Advisory Committee on Electric Utility Industry Restructuring has statutory policy duties related to electric industry restructuring.
Montana Public Service Commission	Regulates public electric utility service, transmission, and default supply; licenses competitive suppliers.
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 transmission facilities; provides assistance with energy efficiency projects; maintains an energy library facility.
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 Power Authority	Is authorized to purchase, construct, and operate electrical generation facilities or electrical transmission or distribution facilities. The Authority is authorized to have the Board of Examiners issue up to $500 million dollars in revenue bonds to finance electricity projects.
Montana District Courts and Supreme Court	If initiated through a lawsuit, judicially reviews and provides legal opinions on state law electricity issues in Montana.
Federal Government:	
United States Congress	Sets federal electricity policy by passing federal legislation.
Federal Energy Regulatory Commission (FERC)	Regulates transmission and wholesale sales of electricity in interstate commerce and licenses hydroelectric projects.
Bonneville Power Administration (BPA)	Is a federal agency headquartered in Portland, Ore., that markets wholesale electricity and transmission to the Pacific Northwest's public and private utilities as well as to some large industries. BPA provides about half the electricity used in the Northwest and operates over three-fourths of the region's high-voltage transmission.
Northwest Power Planning 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 fish and wildlife affected by the Columbia River Basin hydroelectric dams.
Regional Transmission Organizations (RTO)	Currently being formed under a FERC order to manage the transmission of

	electricity in a specific region 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 review and provide legal opinions on federal electricity law issues.
Local Government:	
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 public utility.
ELECTRIC UTILITIES	
Montana Electric Cooperative Utilities	There are 26 nonprofit distribution electric cooperatives in the State of Montana that are locally owned and operated by their cooperative members and serve approximately 400,000 people in Montana. 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 Utility	An investor-owned, nonvertically integrated public utility that provides electricity transmission, distribution, and default supply services to over 285,000 customers in Montana. This utility is regulated by the Public Service Commission.
Montana-Dakota Utility	An investor-owned, vertically integrated public utility that provides electricity

	supply, transmission, and distribution services to 23,555 customers 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.

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 an average water year, these (PPL) dams have 474 megawatts of generating capacity. 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 Montana is regulated by FERC.
Qualifying Facilities	Federal legislation facilitated the emergence of small, nonutility electricity generating companies called qualifying facilities. In Montana, we have 13 qualifying facilities that produce about 100 megawatts of electricity.
Montana Electric Buying Cooperative	A statewide cooperative created under state law to act as an electrical energy supplier and promoter of renewable energy and conservation. This cooperative is not currently supplying electricity to Montanans.
Montana Electric Cooperative Utilities	There are three nonprofit electric cooperatives in the State of Montana that generate electricity for their customers.
Federal Agencies	BPA, Mission Valley Power, and Western Area Power Administration account for 16% 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. For a list of other competitive energy suppliers, see the Montana Public Service Commission website.
MONTANA CONSUMERS (End Users)	
Residential Consumers	Montana residential consumers are private households.
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.

Chapter 2: The Montana Electricity Consumer

Who and what is a "Montana electricity consumer"?

Montana electricity consumers come in all shapes and sizes. Typical Montana electricity consumers include residential, small commercial, large industrial, 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, the timing of electricity consumption, etc. Consumers in Montana are typically divided into the following classes (see figure 9):

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

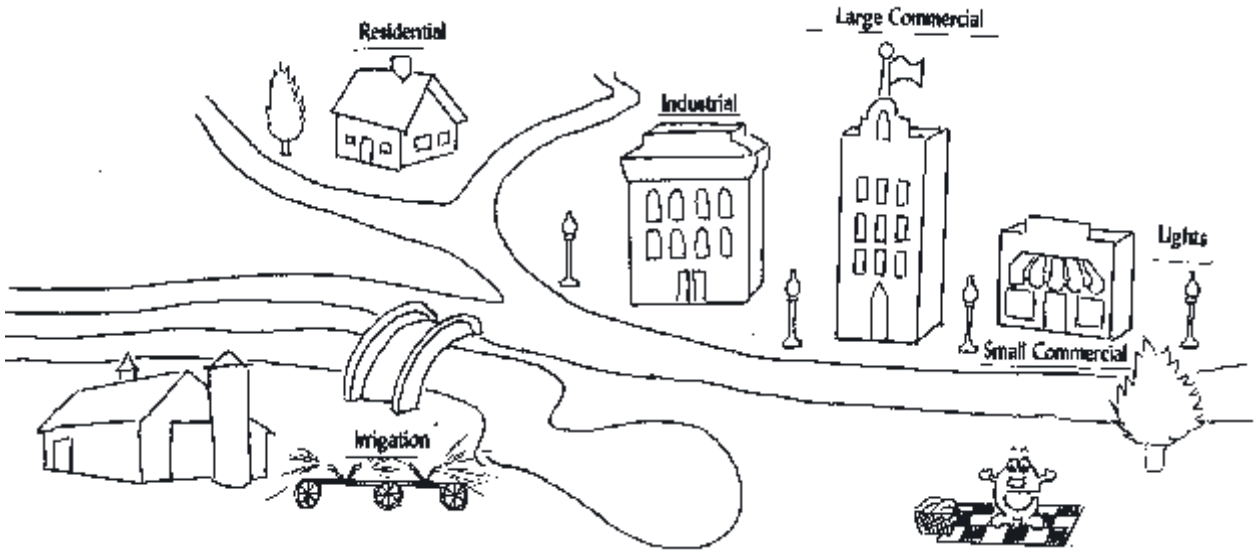


Figure 9. Consumers in Montana are divided into several classes

Which electricity laws protect you as a Montana consumer? How do they work?

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.

Public Utility Customers

If you are a customer of a Montana public utility, such as NorthWestern Energy or Montana-Dakota Utility, you can look to the Montana Public Service Commission (PSC) and the Montana Consumer Counsel as the state statutory and constitutional entities that are charged with ensuring that Montana public utility electricity customers are adequately protected.

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. The PSC sets the rates that public utilities charge for distribution of electricity. For public utilities like NorthWestern Energy and Energy Northwest that have opted for deregulating energy supply, the PSC still regulates the cost recovery and to some extent the price of electricity supplied to default customers (customers that have not chosen an alternative electricity supplier). The PSC still sets electricity supply rates for Montana-Dakota Utility customers.

When the PSC sets rates for electricity distribution and electricity supply, it must provide public notice of the proposed changes and conduct a hearing on those proposed changes. This allows those electricity customers affected by the proposed change in rates to petition the PSC and testify on the rate change. The Montana Consumer Counsel (an entity of state government created by the Montana Constitution) may also represent Montana consumers' interests in front of the PSC.

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 nonprofit 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. Electric cooperative members 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 with the concurrence of the governing body of the municipality for the operation of the utility that protects municipal customers.

Who is the Montana Consumer Counsel? What is the Montana Consumer Counsel's Role?

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 public service commission or any other successor agency". The Consumer Council office is made up of five individuals. There is a Consumer Counsel 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 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 for 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.

Are there laws and programs that help low-income Montana electricity consumers?

There are private and governmental programs in Montana that assist low-ncome 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 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. With the exception of Montana's seven Indian reservations, the state Department of Public Health and Human Services (DPHHS) administers LIEAP throughout Montana. LIEAP is administered by DPHHS and operated by 10 private, nonprofit Human Resource Development Councils (HRDCs) and one Area Agency on Aging. Eligibility for LIEAP funds is limited to those at or below 150% of the federally defined poverty level. For a family of four to be eligible for LIEAP funds in 2002, it cannot earn more than $26,475.

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 two tribal governments.

For LIEAP contact information, see Appendix A.

Energy Share of Montana

Energy Share of Montana is a nonprofit organization funded by USBP dollars and private donations. Energy Share helps Montanans faced with energy emergencies to meet their needs by providing bill assistance and furnace safety services. Energy Share works with HRDCs to determine eligibility. In order to receive assistance from Energy Share, an individual or family must meet the following guidelines:

- Annual income must be at 150% of the defined poverty level or less, or exceptions must be documented.
- The household's source of heating is threatened.

The recommended maximum amount of financial assistance from Energy Share is $500. 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.

For Energy Share contact information, see Appendix A.

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 A.

Public Utilities and Electric Cooperatives

Public utilities and electric cooperatives assist low-income Montanans by providing their LIEAP customers with an additional discount on their electric bills. Discounts range from 13% to 15%. 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 A.

Chapter 3: The Fuels That Feed Montana's Electric Energy Engine

What are the fuels or processes that produce electricity in Montana?

As explained in Chapter 1, electricity is considered a secondary source of energy. It takes another source of energy to produce electricity. 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 useable 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 are 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 119,919 million tons, roughly 25.2% 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 fuels that can and do feed Montana's electric energy engines.

What are the laws that regulate, tax, and provide incentives for electricity production fuel sources?

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 in this handbook. 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. Set out below 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.

COAL

Regulatory State Laws Impacting Coal Extraction and Development:

1. **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.

2. **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.

3. **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.

4. **"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)

5. **"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)

6. 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 waste water, and provide for enforcement,

appeals, and penalties for violation of standards. (Title 75, chapter 5, MCA)

7. **"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)

8. **"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)

8. **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)

9. **"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:

1. **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.

2. **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. (Title 15, chapter 35, MCA)

3. **"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)

4. **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. (Title 15, chapter 23, part 7, MCA)

Incentives for Coal Production:

1. **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).

2. **"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)

Regulatory State Laws Impacting Natural Gas Extraction and Development:

1. Like 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.

2. **"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)

3. **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)

4. **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)

5. **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, 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)

6. **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)

7. Statutes known as the **"Montana Water Use Act":** Establish 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:

1. See discussion of Article IX, section 2, of the Montana Constitution and the Montana Resource Indemnity Trust and Ground Water Assessment Act above.

2. **"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 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)

3. **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)

GEOTHERMAL

Regulatory State Laws Impacting Geothermal Development:

1. Like 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.

2. **"Montana Major Facility Siting Act":** Administered by DEQ, requires that any use of geothermal resources capable of producing power equivalent to 25 million Btu's per hour or more go through a siting certification process. (Title 75, chapter 20, MCA)

3. **Geothermal exploration:** Directs the Board of Environmental Review to regulate geothermal exploration. (75-20-1001, MCA)

4. Statutes known as the **"Montana Water Use Act":** Establish an application and permitting process administered by DNRC for the appropriation of water. (Title 85, chapter 2, parts 3 and 4, MCA)

Incentives for Geothermal Development:

1. **Tax credit:** Provides for a credit against individual income tax liability for taxpayers who install in their principal residence a geothermal energy generation system. A credit of up to $1,500 against the taxpayer's income tax liability is authorized. (15-32-115, MCA)

2. **Tax credit**: Provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed $500. (15-32-201, MCA)

3. **"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)

4. **Research and development:** Implements a program administered by DEQ designed to promote research and development of energy conservation and renewable energy sources and provides funding to meet this objective. DEQ must allocate the funds to five statutory loan and grant categories, but has the discretion to reallocate to ensure that the program offers the greatest possible benefits during a particular fiscal year. (Title 90, chapter 4, part 1, MCA)

Regulatory State Laws Impacting Wind Development:

1. **Easements:** Imposes certain conditions on easements created for the purpose of ensuring the flow of wind across real property in connection with the generation of wind energy. Wind energy easements are required to be in writing and must include, among other things, a description of both the servient and dominant tenements and a description of the dimensions of the easement, both horizontally and vertically. The easements must specify the restrictions imposed on the servient tenement and the terms, if any, under which the easement may be modified or terminated. (70-17-303, MCA)

2. 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.

Incentives for Wind Development:

1. **Tax credit**: Provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed $500. (15-32-201, MCA)

2. **Wind 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 that generates electricity by means of wind power. 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 wind energy. (15-32-402, MCA)

3. See the research and development incentives under geothermal resources.

SOLAR

Regulatory State Laws Impacting Solar Development:

1. **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:

1. **Tax credit**: Provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed $500. (15-32-201, MCA)

2. **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)

3. **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)

4. See the research and development incentives under geothermal resources.

FALLING WATER (HYDROELECTRIC FACILITIES)

Regulatory State and Federal Laws Impacting Hydroelectric Development:

1. 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.

2. There are five primary subject areas in which state regulation of hydroelectric power must be considered in addition to the federal requirements under FERC. These areas are:

   (a) water rights permits;
   (b) 310 permit for altering a perennial stream;
   (c) water quality certification under Section 401 of the federal Clean Water Act;
   (d) fish and wildlife impact evaluation (no permit required); and
   (e) Montana Major Facility Siting Act state filing with FERC for hydrofacilities over 50 megawatts.

3. 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:

1. See incentives in Chapter 4.

BIOMASS

Regulatory State Laws Impacting Biomass Development:

1. Associated activities surrounding biomass development that affect air or water quality may require permits from DEQ.

Incentives for Biomass Development:

1. **Property tax abatement:** Provides for the classification of gasohol production facilities, during construction and for the first 3 years of operation, as class five property, taxable at 3% of market value. (15-6-135, MCA)

2. **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. (15-6-201, MCA)

3. **Tax credit**: Provides an income tax credit for individual taxpayers who install in the taxpayer's principal dwelling an energy system using a recognized nonfossil form of energy generation. The credit may not exceed $500. (15-32-201, MCA)

4. **Tax incentive:** ("Alcohol Tax Incentive and Administration Act of 1983") Establishes various tax incentives for the production of alcohol to be blended for gasohol and provides for a system of recordkeeping. (Title 15, chapter 70, part 5, MCA)

5. See the research and development incentives under geothermal resources.

COGENERATION:

Regulatory State Laws Impacting Cogeneration Development:

1. 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)

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

Incentives for Cogeneration:

1. **"Federal Public Utility Regulatory Policies Act of 1978",** Pub. L. 95-617: Establishes requirements for the participation by qualifying small power production facilities and arrangements for purchases and sales of electric power with electric utilities under the regulation of the PSC. See also state laws concerning small power production facilities. (Title 69, chapter 3, part 6, MCA)

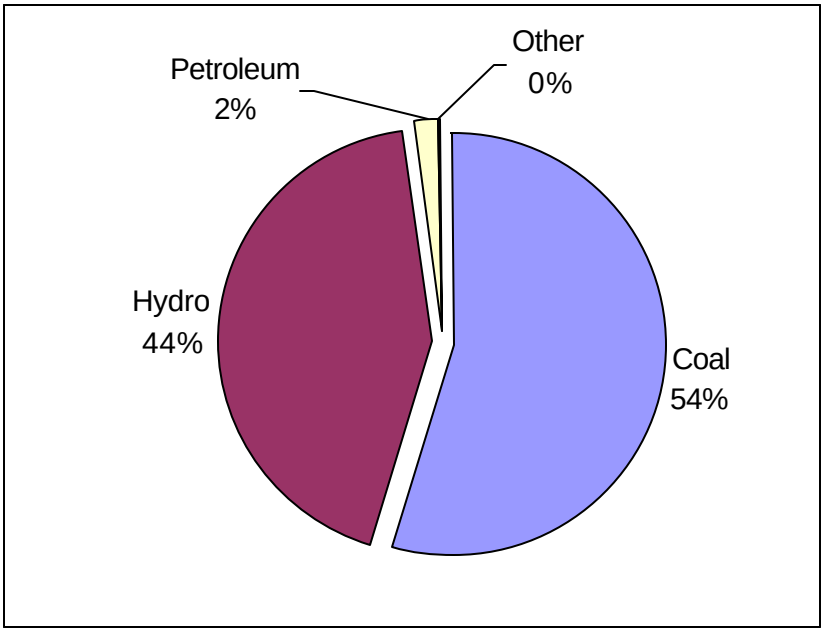
2. See incentives in Chapter 4.

Chapter 4: Generating Electricity in Montana

How is electricity generated in Montana?

Montana currently has 45 generating facilities located across the state with an average generating capacity of 3,178 megawatts (DEQ, 2002). Coal-fired generation makes up 54% of Montana's generation capacity. Hydrofacilities account for 44%, petroleum coke makes up less than 2%, and natural gas and wind account for the remainder (DEQ, 2002). See figure 10.

Figure 10. Generation by fuel



Who generates electricity in Montana?

Electricity is generated by a variety of companies and governmental entities in Montana (see table 2). Montanans use an amount equivalent to 56% of the electricity generated in the state, making Montana a net exporter of electricity. Obviously, the policy question arises that if Montana is a net exporter, why should additional generation facilities be built in the state? 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 33% of Montana's power production. The Bonneville Power Administration (BPA) and the Western Area Power Administration (WAPA) own plants that generate 25% of Montana's power production, some of which goes to electric cooperatives in state, and the rest is moved out

of state. Seven percent of NorthWestern Energy electricity production is committed to out-of-state customers. The bulk of the remaining power in the state (25%) is owned by PPL Montana. The 2001 Legislature opted for creating statutory incentives to build additional electricity generation in the state, but the debate continues.

Table 2. Average generation by company or governmental entity in Montana 1995-1999

Average Generation by Company, 1995-1999

Company	aMW	Percent
PPL Montana[1,2]	940	29.6%
Puget Sound Power & Light[2]	509	16.0
Avista (WPP)[2]	403	12.7
Bonneville Power Administration[3]	382	12.0
Western Area Power Administration[3]	323	10.2
Portland General Electric[2]	223	7.0
NorthWestern Energy[2,4]	169	5.3
PacificCorp[2]	114	3.6
Yellowstone Energy Partnership	48	1.5
Other	69	2.2
TOTAL	3178	100.0%

[1] PPL Montana plants were owned by MPC until mid-December, 1999.
[2] Public data on output for Colstrip 1-4 are reported for the entire facility, not individual units. In this table, the output was allocated among the partners on the basis of their ownership percentages.
[3] Distributes power generated at U.S. Corps of Engineers and U.S. Bureau of Reclamation dams.
[4] NorthWestern Energy plants were owned by MPC until February 2002.
Source: Table E2.

What laws regulate the generation of electricity in Montana?

Chapter 3 inventories those laws that regulate primary fuel sources for electricity in Montana. Many of those regulatory laws in Chapter 3 apply to the operation of electrical generation facilities. Generation facilities typically require air and water quality permits from DEQ. Some facilities may require a water use permit from DNRC. Those permits trigger 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. Local governments may regulate the siting of a generation facility through land use and zoning restrictions.

For a public utility in Montana that has not restructured and 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. The PSC must also determine whether a nonrestructured utility's generation facility 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 Title 69, chapter 3, part 12, MCA, and 69-3-109 and 69-3-201, MCA.

What laws tax the generation of electricity in Montana?

There are a variety of property taxes, corporate licence and income taxes, and equipment taxes that the state and local governments assess 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, 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)

What laws provide incentives for the generation of electricity in Montana?

In addition to the incentives identified in Chapter 3, the following incentives for electrical generation facilities also apply:

1. **Property tax exemption for electrical generation facilities:** With certain exceptions, exempted an electrical generation facility and related facilities constructed after May 5, 2001, from property taxation. In order to qualify for the exemption, the owner of the facility must offer contracts to sell at least 50% of the facility's net generating output to Montana customers at a cost-based rate plus a rate of return not to exceed 12% for a 20-year period from the date of the completion of the facility. The property tax exemption is limited to 5 years for a generation facility powered by oil or natural gas turbines. (Title 15, chapter 24, part 30, MCA)

2. **Qualifying facility tax exemptions:** The machinery and equipment used in qualifying facilities built and operated after July 1, 2001, are exempt from taxation. A generation facility that has a capacity of less than 1 megawatt of electrical energy is exempt from taxation for 5 years after generation of electricity begins. (Title 15, chapter 6, part 2, MCA)

3. **Noncommercial electrical generation machinery and equipment tax exemption:** Subject to certain conditions, noncommercial electrical generation machinery and equipment that are owned or leased by a person and that are used for the production of electrical energy for use by the person in the person's business are exempt from taxation. (Title 15, chapter 6, part 2, MCA)

4. Exempted electrical generation facilities from the Montana Major Facility Siting Act.

5. **Revenue bonds:** Allowed electrical energy generation facilities, regardless of size or fuel source, to be eligible for county or municipal revenue bonds issued to finance economic development projects. (Title 90, chapter 5, part 1, MCA)

6. **Tax credit:** A new or expanding corporation manufacturing energy by means of an alternative renewable energy source may be eligible for a license tax credit. (Title 15, chapter 31, part 1, MCA)

7. **Commercial or net metering investment tax credit for alternative energy systems:** An individual, corporation, partnership, or small business corporation that makes an investment of $5,000 or more for property qualifying as a commercial system or a net metering system that is located in Montana and that generates energy by means of an alternative renewable energy source is entitled to a tax credit. (Title 15, chapter 32, part 4, MCA)

8. **"Federal Public Utility Regulatory Policies Act of 1978",** Pub. L. 95-617: Establishes requirements for the participation by qualifying small power production facilities and arrangements for purchases and sales of electric power with electric utilities under the regulation of the PSC. See also state laws concerning small power production facilities. (Title 69, chapter 3, part 6, MCA)

Chapter 5: Transmitting and Distributing Electricity in Montana

Who transmits and distributes electricity in Montana?

Chapter 1 provided an overview of how electricity is transmitted and distributed in Montana. Under Montana law, an entity that transmits or distributes electricity is called a distribution services provider (69-8-103, MCA). Transmission and distribution wires seem to criss-cross the state in a haphazard manner, but there is an imposed organization scheme for distribution placement. The State of Montana is divided up into service territories (see figures 11 and 12). As a Montana customer of electricity, you are assigned to a distribution company by virtue of your geographic location. All 26 electric cooperatives, Montana-Dakota Utility, city of Troy, and NorthWestern Energy have their own distribution service territories. State law strictly protects the territorial integrity of each service territory (Title 69, chapter 5, part 1, MCA). NorthWestern Energy, PacificCorp, BPA, and WAPA all own transmission lines in Montana.

Figure 11. Electricity distribution utilities not regulated by the Public Service Commission

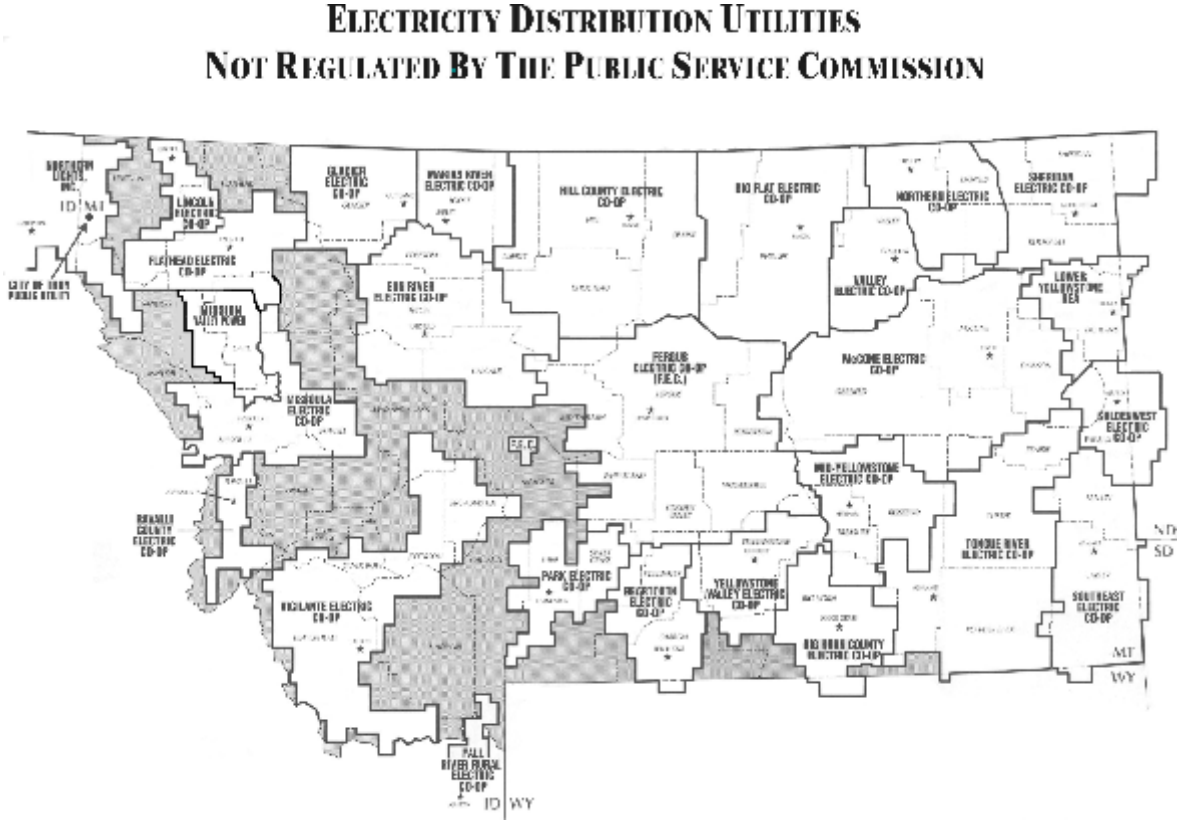
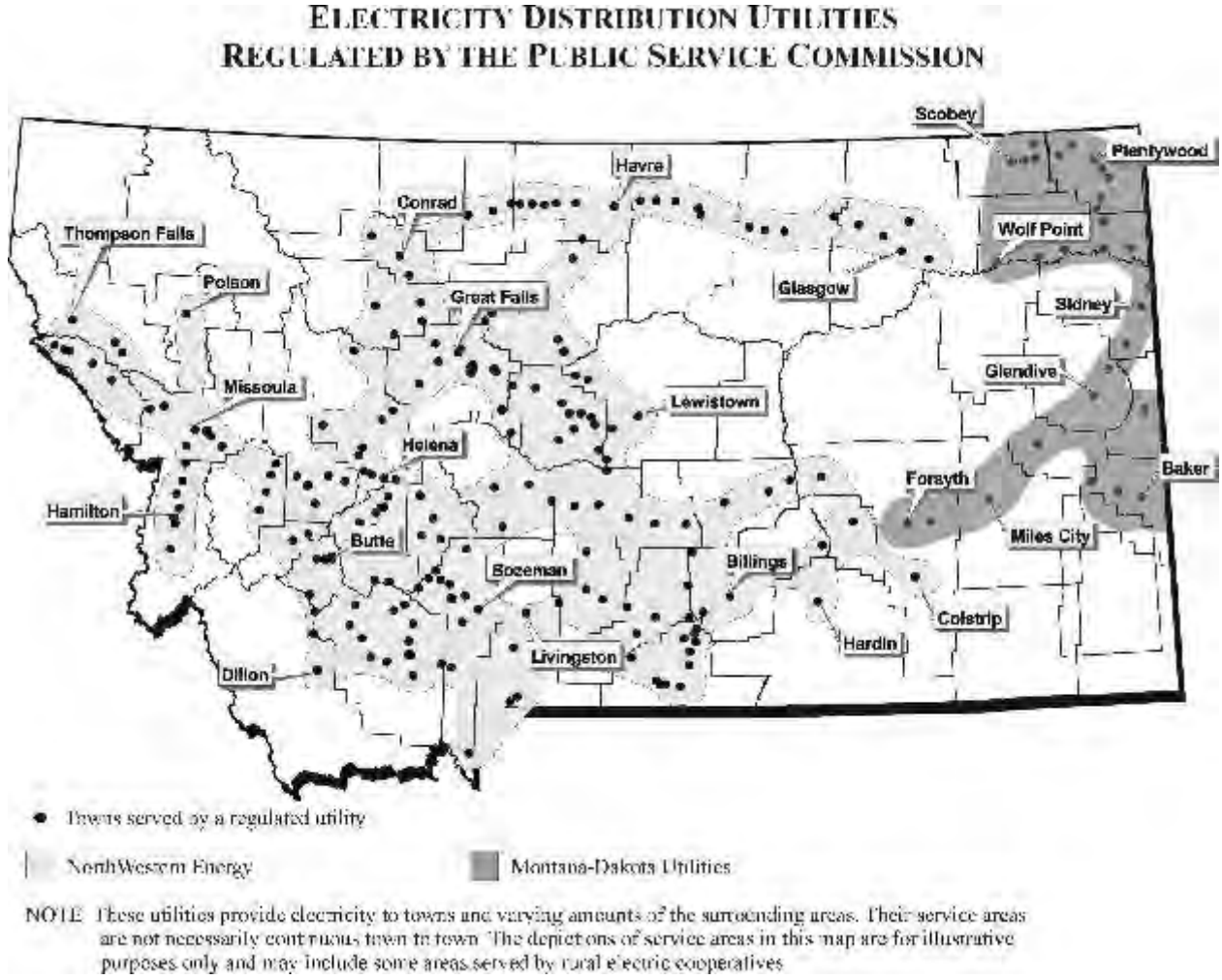


Figure 12. Electricity distribution utilities regulated by the Public Service Commission



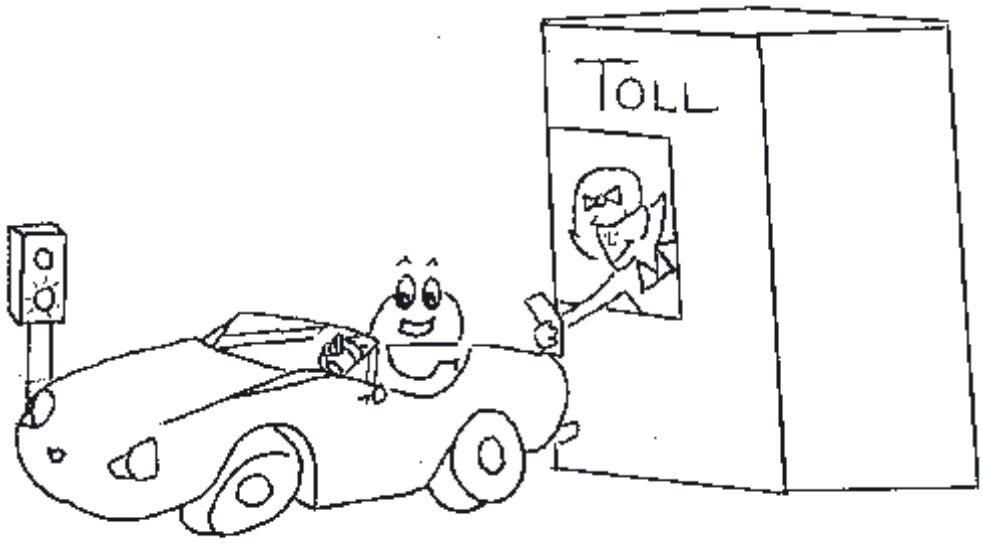
How do our neighboring states and the federal government impact our electricity transmission?

As discussed in Chapter 1, Montana's transmission 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. We do not transmit electricity in Montana in isolation of our neighboring western states. Because Montana is interconnected, we are interdependent with our neighboring western states.

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 establishes transmission rates for transmission customers. 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 (see figure 13). 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. 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 888 requiring transmission owners to functionally separate their power marketing operations. Under Order 888, the transmission owners must allow open access to their systems that does not discriminate against other parties that use their systems. In addition, FERC issued Order 2000 requiring that an independent regional transmission organization (RTO) take over operation and control of the transmission system. The transmission owners and various stakeholders are currently in the process of formulating an organizational and operational structure for RTO West and made a filing with FERC in March 2002.

Figure 13. The interstate transmission system is made up of multiple owners that control access to their piece of transmission wire



What state laws regulate the transmission and distribution of electricity in Montana?

Although FERC has primary jurisdiction over transmission pricing and policy, Montana regulates transmission siting through the Montana Major Facility Siting Act (MMFSA) (Title 75, chapter 20, MCA). MMFSA requires that any proposed transmission line receive siting certification before it is constructed. MMFSA 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 broad regulatory authority over public utility distribution services providers (see Chapter 2 for a complete discussion of the PSC's authority). The PSC not only has the ability to set distribution rates for customers, but also approves the acquisition or construction of new distribution facilities and regulates reliability and facility maintenance. Montana electric cooperatives self-regulate their distribution services. State law protects the territorial integrity of each service territory (Title 68, chapter 5, part 1, MCA) and prohibits duplication of distribution services.

What laws provide incentives for the transmission and distribution of electricity in Montana?

The PSC is required by statute to include in distribution rates a reasonable rate of return for the public utility distribution services provider. 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.

Chapter 6: Conserving Electric Energy

What is electric energy conservation?

Energy conservation refers to activities that reduce the amount of electricity used by a consumer. Examples of energy conservation include efficient appliances and lighting fixtures, high efficiency heating and cooling systems, efficient building design, weatherization of buildings, and the use of advanced electric motors and heat recovery systems.

How can conserving electricity save Montanans money?

Conservation is really a very simple concept--if you use less electricity, you lower your electricity bill. If a large block of customers use 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 consumers money, and it conserves natural resources.

What laws provide incentives for electricity conservation in Montana?

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

1. **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)

2. **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)

3. **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)

4. **"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 up to 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 section 17-6-309(1)(d), expressly includes energy efficiency investments.

5. **Montana state building code:** Designed to accomplish several objectives, including the following: encourage, 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; encourage 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; encourage efficient design of building envelopes with high thermal resistance and low air leakage; and require 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. (Title 50, chapter 60, part 2, MCA)

6. 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)

7. **Research and development of energy conservation:** Implements a program administered by DEQ designed to promote research and development of energy conservation and renewable energy sources and provides funding to meet this objective. DEQ must allocate the funds to five statutory loan and grant categories, but has the discretion to reallocate to ensure that the program offers the greatest possible benefits during a particular fiscal year. (Title 90, chapter 4, part 1, MCA)

8. **Low-income weatherization:** Appropriates to 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. 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)

9. **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 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 usage of energy. (Title 90, chapter 4, part 3, MCA)

10. **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)

11. "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)

Who can you contact about energy conservation in your home, school, or business?

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.

Chapter 7: Pricing Electricity Supply, Transmission, and Distribution

Who sets our retail electricity supply prices in Montana? How is this done?

The process for determining retail electricity supply prices in Montana depends on whom you receive utility services from and, in some circumstances, what type of customer you are. If you are a member of most Montana electric cooperatives, the elected board of the cooperative sets the rates for electricity supply. If you are a member of the Flathead or Mission Electric Cooperative, your electricity supply prices are market-based and approved by the elected board. If you are a customer of Montana-Dakota Utility, the PSC sets the rates for electricity supply. If you are a small customer served by NorthWestern Energy who has not chosen an alternative electricity supplier, then you are part of the default supply load that is regulated by the PSC. Because NorthWestern Energy is a distribution services provider that does not currently own sufficient generation assets to cover the default supply load, NorthWestern must purchase electricity from the market. The PSC must determine whether those purchases were prudently incurred. Small NorthWestern customers will pay market-based rates for their electricity supply starting July 1, 2002. 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.

Who sets our transmission and distribution costs in Montana? How is this done?

FERC sets transmission rates that transmission owners can charge, and those charges are passed on to customers. For NorthWestern and Montana-Dakota Utility 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. If you are a Montana electric cooperative member, distribution costs are set by an elected governing board for that particular cooperative .

Chapter 8: Montana's Electric Industry Restructuring Laws

What is electric industry restructuring?

Montana's electricity laws and polices have received significant public attention and scrutiny since 1997 when Montana decided to deregulate electricity supply and eventually allow all Montana consumers to choose, given a competitive market, their own electricity supplier. This was, and continues to be, a fundamental policy shift for the State of Montana from regulating the price of electricity supply to allowing competitive markets to set the price of electricity supply. Competitive choice has not yet developed for small residential and commercial customers in the state.

Specifically, if you are a NorthWestern customer or a member of an electric cooperative that has opened itself up to competition, electricity industry restructuring is the mechanism that allows a competitive market to determine electricity prices and allows the customer to choose an electricity supplier that gives the best service. If you are member of a cooperative that has not opened up to competition or a Montana-Dakota Utility customer, the price of your retail electricity supply is set by either the cooperative board or the 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.

Why did Montana decide to restructure its electric industries?

The fundamental premise of Montana's restructuring law is that competition will provide greater benefits to consumers than they would otherwise have received under a historically regulated environment. One of the driving forces behind restructuring was FERC's decision in 1996 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 Montana Power Company (now NorthWestern Energy) 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.
>
> 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, 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. (69-8-102, MCA)[1]

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

What is the status of electric restructuring today?

Market volatility and the lack of significant small-customer retail competition forced the 2001 Montana Legislature to effectively put full customer choice on hold until July 1, 2007. If you are a small customer of NorthWestern who has not chosen an alternative electricity supplier, you are part of the default electricity supply load that is regulated by the PSC. Because NorthWestern Energy is a distribution services provider that does not currently own sufficient generation assets to cover the default supply load, NorthWestern must purchase electricity from the competitive wholesale market. The PSC must approve those purchases. For the most part, competitive markets have developed to serve large industrial electricity customers, and most of those customers have chosen alternative electricity suppliers. Small NorthWestern Energy customers also have the opportunity to purchase a separately marketed product composed of electricity from renewable resources.

GLOSSARY OF ELECTRICITY TERMS

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

Average Megawatt: A unit of energy output over a specified time period. It is equivalent to the total energy in megawatt-hours divided by 8,760 (the number of hours in a year).

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.

Class of Service: A group of customers with similar characteristics (e.g., residential, commercial, industrial, sales for resale, etc.) identified for the purpose of setting an electric rate structure.

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 piece of equipment at a given instant or during a designated period of time (see Load).

Demand-Side Management: Electric utility activities designed to reduce customer use of electricity or change the time pattern of use in ways that will produce desired changes in the utility load.

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

End-Use Sectors: Energy use assigned to the major end-use sectors according to the following guidelines as closely as possible:

Residential sector:	Energy consumed by private household establishments primarily for space heating, water heating, air conditioning, cooking, and clothes drying.
Commercial sector:	Energy consumed by nonmanufacturing business establishments, including motels, restaurants, wholesale businesses, retail stores, laundries, and other service enterprises; by health, social, and educational institutions; and by federal, state, and local governments.
Industrial sector:	Energy consumed by manufacturing, construction, mining, agriculture, fishing, and forestry establishments.
Transportation sector:	Energy consumed to move people and commodities in both the public and private sectors, including military, railroad, vessel bunkering, and marine uses, as well as the pipeline transmission of natural gas.

Electric utility sector: Energy consumed by privately and publicly owned establishments that generate electricity primarily for resale.

FERC: Federal Energy Regulatory Commission (formerly the Federal Power Commission). 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.

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).

Gross: The total amount of electric energy produced by the generating units in a generating station or stations, measured at the generator terminals.

Net: Gross generation less the electric energy consumed at the generating station for station use. (Energy required for pumping at pumped-storage plants is regarded as plant use and is subtracted from the gross generation and from hydroelectric generation.)

Gigawatt (GW): One billion watts.

Gigawatthour (GWh): One billion watthours.

High voltage: Voltage levels generally at above 69 kV. Some utilities also count 50 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 that are not on the contract path for the transaction.

Kilowatt (kW): One thousand watts.

Kilowatthour (kWh): One thousand watthours.

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.

Megawatt (MW): One million watts.

Megawatthour (MWh): One million watthours.

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.

PURPA: Public Utility Regulatory Policies Act of 1978. 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 power producers or cogenerators that meet the Federal Energy Regulatory Commission's or the Montana Public Service Commission's size, fuel source, and operational criteria as authorized by PURPA.

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.

Steam-Electric (Conventional) Plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler by heat from burning fossil fuels.

Transmission: High-voltage electric wires used for bulk movement of large volumes of power across relatively long distances. Compare 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.

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.

Watthour (Wh): An electrical energy unit of measure equal to 1 watt of power supplied to, or taken from, an electric circuit steadily for 1 hour.

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.

Appendix A: State Energy Information Resources

Consumer Counsel	(406) 444-2771
Department of Commerce, Board of Investments	(406) 444-0001
Department of Environmental Quality, Technical and Financial Assistance Bureau	(406) 444-6697
Legislative Services Division	(406) 444-3064
Department of Public Health and Human Services Low Income Energy Assistance Program	(406) 447-4260
Northwest Power Planning Council	(406) 444-3952
Public Service Commission	(406) 444-6199
Energy Share of Montana	(406) 442-4900
Human Resource Development Councils	(406) 586-1572
Montana-Dakota Utility	(800) 638-3278
NorthWestern Energy	(888) 467-2669
Montana Electric Cooperatives' Association	(406) 761-8333