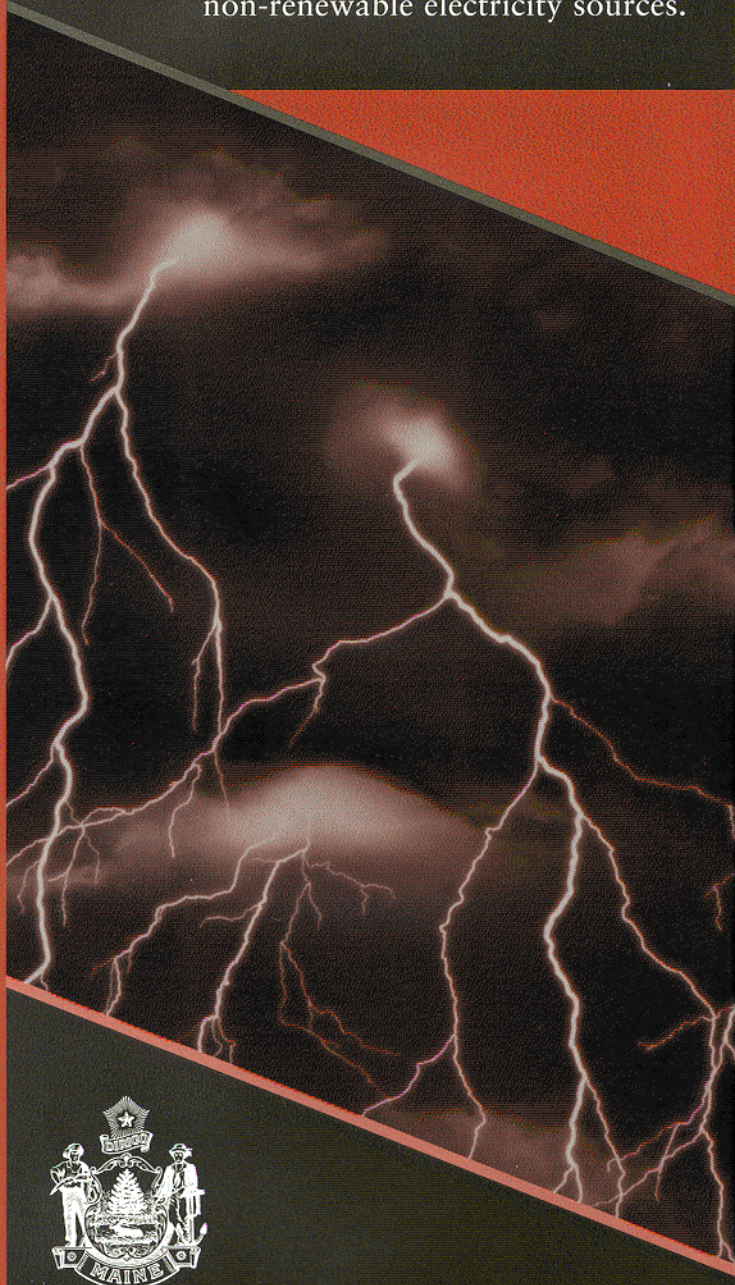


# POWER SOURCES

A guide to renewable and  
non-renewable electricity sources.



Maine Public Utilities Commission

# POWER SOURCES

## ELECTRIC CHOICE

Changes in Maine's electric utility industry are offering consumers some important new choices. As of March 2000, the supply portion of your electric service is open to a competitive market. That means you can choose the company that produces your electricity. The delivery of power to your home or business will continue to be provided by your current electric company, now known as your Distribution Company. Depending on where you live in Maine, your Distribution Company will continue to be Central Maine Power (CMP), Bangor Hydro Electric (BHE), Maine Public Service (MPS), or one of Maine's consumer-owned utilities.

Electric Choice means you can shop around for the best price and terms for your electricity supply -- while still enjoying the same reliable service. It also offers you more control over how your energy dollars are being spent. You can select sources of power based on your preferences regarding their environmental impact.

## POWER SOURCES

All power sources impact the natural environment in one way or another. Some are sources of air pollution, others present waste storage issues. However, with Electric Choice, a change in the way you buy electricity can have a direct, positive environmental effect. That's because you have the option to choose Suppliers with power plans that include more renewable energy in their power mix.

### WHAT IS RENEWABLE ENERGY?

Renewable energy, sometimes called "green power," is generated from a source that either doesn't run out, or is quickly renewed through natural processes, including:

- Wind
- Water (hydroelectric)
- Sun (solar)
- Wood (biomass)
- Trash-to-energy plants
- Tides
- Fuel Cells
- Geothermal (internal heat of the earth)

### WHAT IS NON-RENEWABLE ENERGY?

Non-Renewable energy is power generated from a source that can only be used once, including:

- Nuclear
- Oil
- Coal
- Natural gas



## ENERGY & THE ENVIRONMENT

Environmental impacts differ among power sources. The air emissions from polluting electric generating plants are a vital environmental concern for Maine. For the most part, renewable energy is produced without a large amount of air emissions. However, the construction and maintenance of both renewable and non-renewable power plants may impact land, water and biological resources. Nuclear plants have low air emissions, but long-term waste storage issues.

Non-renewable energy, such as coal, oil and gas, usually has a greater impact on air quality. Carbon dioxide (CO<sub>2</sub>) is released when fuel is burned, and is one of the pollutants that is of greatest concern. Other air pollutants include nitrogen oxide (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>), which contribute to acid rain, and aggravate some health conditions, including asthma and cardiovascular disease.

## MAINE'S ENERGY LEGACY

Renewable resources have been part of Maine's energy policy for many years. We have a history of encouraging the use of electricity from renewable and indigenous (Maine-based) resources, and currently about 50% of our electricity comes from renewable sources. In a competitive market, consumer choice will influence whether Maine's future electricity mix includes more or less renewable energy than the current system. When you purchase electricity from renewable sources, you are helping to decrease the amount of non-renewable electricity that would otherwise be produced.

## HOW CAN I MAKE A DIFFERENCE?

Renewable energy typically costs more to produce, but with more consumer support, the cost of these technologies should go down. You can affect the availability - and affordability - of renewable energy over the long term by encouraging power marketers to develop and offer more "green energy" options. As you and many of your neighbors select Suppliers whose energy is more environmentally responsible, the price of producing power from renewable sources should begin to decrease. This could help attract even more customers, encouraging Suppliers to provide more environmentally-friendly options and lowering prices further.

Whatever Supplier you choose, make sure you confirm which of its plans you have selected to be sure the power mix you receive reflects the choice you want. Suppliers may offer several plans with different fees, terms and power sources.

## HOW DO I GET "CLEAN" ENERGY?

Electricity Suppliers located throughout New England and beyond get their power from a variety of sources. Electricity is distributed on a regional grid system, with Suppliers pooling their power together before distributing it to consumers. When you increase the amount of renewable energy by exercising your choice, you increase the amount of renewable energy that is supplied to the power pool. The electricity that is actually delivered to your home or business is produced from the combination of all resources in the pool, since it is not possible to segregate the source of the power that is delivered to each individual purchaser. When you choose a renewable source of energy, a greater amount of "clean" energy is added to the power pool. This replaces some of the non-renewable, pollution-emitting power in the pool.



By Maine law, all competitive Electricity Suppliers must include a minimum of 30% renewable and efficient energy in their power mix. "Efficient" power is generated from plants that capture much of the heat or steam produced during electricity generation and use it in heating or industrial purposes. As Electric Choice is implemented, you may find that some Suppliers offer one or several "environmentally-friendly" options, which allows you to increase the amount of renewable energy you buy. When you purchase power under a plan that is more than 30% renewable, the Supplier must increase the amount of renewable power in its supply beyond the 30% minimum requirement. The Supplier can't just average your request with that of other customers who do not pick renewable sources in order to meet the minimum requirement. The more renewable energy you buy, the more you're helping reduce air pollution.

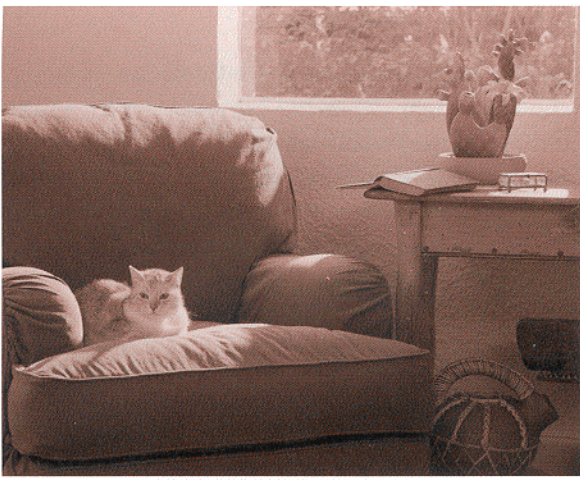
## HOW DO I KNOW WHAT MY POWER SOURCES ARE?

By Maine law, Electricity Suppliers must provide consumers with a Uniform Disclosure Label—much like the nutrition labels on food. This standardized form includes average price and pricing variability, as well as the percentage of your power that comes from each source and the air pollution levels they generate.

You'll automatically receive this information when you choose a new Supplier, or you can request a copy from any current or potential Supplier. Additionally, the information will be reported quarterly with your electric bill. If your Supplier offers only one plan, the label shows its company-wide resource mix. If they offer several plans, a label is printed for each plan.

### SAMPLE UNIFORM DISCLOSURE LABEL

<p>GENERATION PRICE Average price per kWh at different levels of use. Prices do not include regulated charges for customer services and delivery.</p>	<p>Average Use    250 kWh</p>	<p>500 kWh</p>	<p>1000 kWh</p>	<p>2000 kWh</p>
	<p>Average price per kWh</p> <p>Average          4.5 cents</p>	<p>4.5 cents</p>	<p>4.5 cents</p>	<p>4 cents</p>
<p>Your average generation price will vary according to when and how much electricity you consume.</p>		<p>See your most recent bill for your monthly use and your Terms of Service for the actual prices.</p>		
<p>CONTRACT</p>	<ul style="list-style-type: none"> <li>• <b>Minimum Length:</b> 3 years (30-day notice required for termination. Penalties may apply.)</li> </ul>		<ul style="list-style-type: none"> <li>• <b>Contract Terms:</b> Fixed price over contract period.</li> </ul>	
<p>POWER SOURCES This electricity product was assigned generation from the following sources.</p>	<p>Power Sources    %</p> <p>Biomass            8</p> <p>Hydro                18</p> <p>Natural Gas        5</p> <p>Oil                    24</p> <p>Wind                 2</p>	<p>Power Sources    %</p> <p>Coal                 10</p> <p>Nuclear             6</p> <p>Solar                8</p> <p>Other Renewables 4</p> <p>Municipal          15</p>		
<p>AIR EMISSIONS Carbon dioxide (CO<sub>2</sub>), nitrogen oxide (NO<sub>x</sub>), and sulfur dioxide (SO<sub>2</sub>) emission rates from these sources, relative to the regional average.</p>	<p style="text-align: center;">Regional Average</p> <p style="text-align: center;">↓</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>CO<sub>2</sub></p> </div> <div style="text-align: center;"> <p>NO<sub>x</sub></p> </div> <div style="text-align: center;"> <p>SO<sub>2</sub></p> </div> </div> <p style="display: flex; justify-content: space-between; margin-top: 10px;"> <span>lower emissions</span> <span>higher emissions</span> </p>			



## WHAT CAN I DO AT HOME?

You can also help the environment by adopting some simple energy efficiencies around your home. The use of energy-efficient appliances can greatly reduce your power usage. When shopping for new appliances, look for the Energy Star® label, which indicates that the appliance has been rated as highly efficient under standards developed by the U.S. Environmental Protection Agency (EPA). By caulking window frames and doors you can reduce the amount of heat that escapes in winter. It also helps to wrap your electric water heater with insulation and set the thermostat on the water heater to 120 degrees—a service usually provided by your Distribution Company.

Energy efficiency investments are one of the best choices you can make to help the environment. When you invest in energy efficiency, you reduce the amount of energy that is needed, thereby reducing emissions. These efficiency investments will increase the efficiency of your home, office or manufacturing facility and reduce your monthly cost of electricity. Investments in energy efficiency allow you to permanently reduce the amount of energy you use, and that reduces both the energy and the delivery costs of your bill—permanently.

## WHAT ELSE CAN I DO TO PROTECT OUR FUTURE?

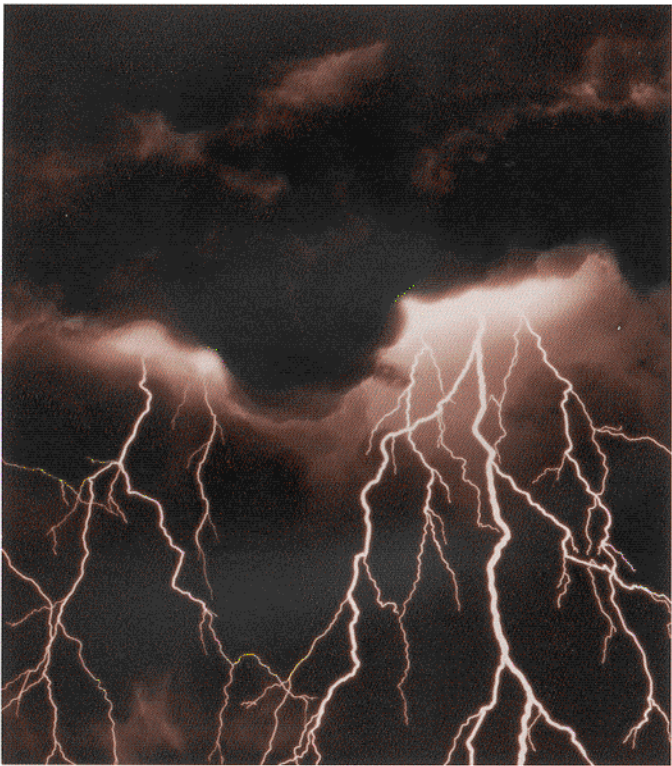
Maine has developed a Renewable Resource Research & Development Fund to help establish cleaner, more efficient ways of producing electricity. This grant program is administered by the Maine State Planning Office, and funds R&D efforts at public higher education institutions in Maine. These institutions include the Maine Technical College System, University of Maine System and Maine Maritime Academy.

You may make a one-time or regular voluntary contribution to this fund. This can be done through your Distribution Company, the company that delivers your power and maintains the wires and poles. Look for information from your Distribution Company on this opportunity. You can contribute a dollar, five dollars, ten dollars or any other amount you wish. Once you notify your Distribution Company that you want to contribute, it will add the amount you have indicated to your bill each month. Should you ever want to stop making this contribution, simply notify your Distribution Company, and they will remove the charge from future bills.

For more information on contributing to the Renewable Resource Research and Development Fund, contact your Distribution Company.

For additional information on your power supply options or any other issues regarding Electric Restructuring, call the PUC's toll-free Electric Choice Information Line, **1-877-PUC-FACT** (1-877-782-3228), visit our Electric Choice Website at [www.pucfact.com](http://www.pucfact.com), or write to us at:

PUC/Electric Choice  
242 State Street  
Augusta, Maine 04333-0018



Other information on renewable resources can be found at the following websites:

- U.S. Department of Energy, Energy Efficiency and Renewable Energy Network (EREN) at [www.eren.doe.gov](http://www.eren.doe.gov)
- U.S. Department of Energy, Center of Excellence for Sustainable Development at [www.sustainable.doe.gov](http://www.sustainable.doe.gov)

## ELECTRIC CHOICE

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TTY 1-800-437-1220

## RENEWABLE SOURCES

**BIOMASS** - Energy produced from organic matter that is available on a renewable basis, including wood and wood wastes and agricultural crops and wastes.

**FUEL CELLS** - Devices that convert chemical energy directly into electricity.

**GEOTHERMAL** - Energy converted from the internal heat of the earth.

**HYDROELECTRIC** - Energy produced by the force of falling water.

**MUNICIPAL SOLID WASTE** - Energy produced from household and business waste that is collected in conjunction with a recycling program and burned in a Waste-to-Energy plant.

**SOLAR** - Energy transmitted from the sun (solar radiation).

**WIND** - Energy converted by windmills captured from the movement of wind across a landscape.

ADDITIONAL RESOURCES ON  
ELECTRIC RESTRUCTURING

- **GROUP POWER** - A guide to group buying and aggregation.
- **POWER GUIDE**- A comprehensive guide to electric restructuring.
- **SMALL BUSINESS POWER GUIDE**  
A comprehensive guide to electric restructuring for small businesses.
- **ELECTRIC CHOICE WEBSITE**  
[www.pucfact.com](http://www.pucfact.com)
- **VIDEO**  
“Electric Restructuring in Maine”



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If you would like to request any materials, call the toll-free PUC Electric Choice Information Line at 1-877-PUC-FACT (1-877-782-3228) TTY 1-800-437-1220