



BIOMASS



GEOTHERMAL



HYDROPOWER

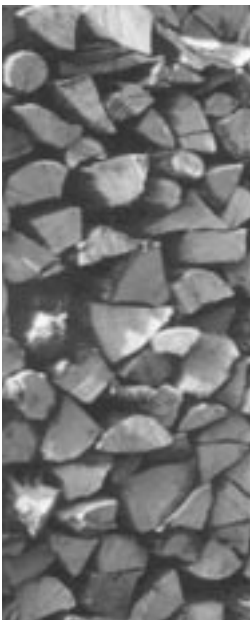


SOLAR



WIND

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CHRISTOPHER ST. CLAIR

With today's efficient stoves, wood can be more economical than propane for heating a home.

Since people first learned to control fire, we have used wood for heating. Today, many people find that wood is still a superior way to heat their homes. Since 1990, when the U.S. Environmental Protection Agency issued woodstove standards, heating with wood has become even cleaner, safer and more efficient than before.

There are a number of reasons people prefer wood heating. Wood fires are cozy and produce comfortable radiant heat. Stoves and fireplaces are designed to be attractive as well as functional. Burning wood is also an environmentally friendly option. When used properly, today's wood-burning stoves burn wood efficiently, producing little pollution and wasted energy. The cycle of burning and regrowth produces no net increase of carbon dioxide in the atmosphere.

In some locations wood is cheaper than traditional heating fuels, such as propane and heating oil. Many people like the self-sufficiency that burning wood gives them. Wood can also serve as a reliable back-up heating source during winter power outages or fuel supply disruptions.

TYPES OF WOODSTOVES

One of the most important issues in burning wood is how to burn all the gases that the wood releases. Besides containing over 50 percent of the available energy, these gases are dangerous if left unburned because they contribute to both pollution and flammable creosote build-up in your chimney. These gases only burn at temperatures in excess of 1,100°F, a difficult temperature to achieve in unaided wood fires.

Three types of stoves are available today that allow you to maintain a hot, efficient fire that will burn escaping gases: catalytic stoves, high-tech non-catalytic stoves and pellet stoves.

Catalytic stoves

These stoves burn wood gases by employing a catalytic combustor—similar to those used in cars



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Recently developed stoves, certified as "clean burning" by the U.S. Environmental Protection Agency, use 33 percent less fuel and emit 90 percent less smoke than stoves made a decade ago.

to reduce pollution. The special design of the combustor reduces the required temperature for burning gases to 600°F. As smoke passes through the combustor it is burned, which provides complete combustion and produces less air pollution. A well-designed catalytic stove costs from \$900 to \$1,700 (uninstalled).

High-tech non-catalytic stoves

Non-catalytic stoves burn the gases by maintaining a hot fire in a heavily insulated firebox with a secondary combustion chamber hot enough to burn gases. These non-catalytic (or "recirculating") stoves require less maintenance but more attention because the smaller, hotter fires need to be replenished more frequently. A non-catalytic stove costs from \$500 to \$2,000 (uninstalled) depending on the size and style.



CHRISTOPHER ST. CLAIR

This stove adds to its efficiency with a convection chamber that recirculates and heats cold air from the room without using a blower.

Catalytic and non-catalytic stoves are available as freestanding units, fireplace inserts and fireplaces.

Pellet stoves

This type of stove burns densified wood pellets. These highly efficient stoves have controlled air-to-fuel ratios that burn escaping gases. Wood pellet fuel is purchased in 40-pound bags from local hardware and specialty stores and requires only daily loading. The fuel is automatically fed into the fire by an auger and can be controlled by a thermostat. Pellet stoves are available as freestanding units, fireplace inserts and furnaces. These stoves range in price from \$1,300 to \$2,600 (uninstalled). For more information about wood pellet stoves, see the fact sheet *Heat your home with wood pellets*.

CONSIDERATIONS

It is important to realize that burning wood requires a *system*, not just a stove. Systems include the stove as well as stovepipe, chimney, floor protection, proper clearance and a host of other components. Like all systems, they require care and maintenance. While well-designed stoves greatly improve the efficiency and safety of burning wood, woodstove users must be educated on the proper methods of starting and maintaining a fire and caring for their stove and chimney.

Before purchasing a wood-burning stove, also consider the following:

- Before purchasing a stove, make your home as energy efficient as possible. The size of your stove and the time it takes for operation can be minimized by a well-insulated and weatherized home.
- Without proper use and maintenance, a wood-burning system becomes a fire hazard. To

prevent fires, the stove must be properly installed and operated. Have your system installed by a professional, or carefully follow the manufacturer's directions and code requirements. For instance, code requirements say that the stovepipe and chimney must be kept away from combustible materials, such as furniture, flooring and walls. Constant exposure to heat may cause these items to catch fire.

- In 1990, the U.S. Environmental Protection Agency mandated strict particle emissions standards for stove manufacturers. These standards mean that the latest stoves are safer for your family, more efficient and environmentally benign. If you purchase a used stove, make sure it is certified to meet these standards.
- Woodstoves come in many sizes but most cannot heat an entire home. Usually an additional form of heating will be necessary. In addition, do not oversize your stove. This common mistake increases the risk of creosote build-up.
- Wood takes up space for storage and must be kept dry. Use only well-dried and seasoned wood. If the wood you purchase is freshly cut, store it for at least six months to dry.
- Check with your insurance agent before making a purchase. Some insurance companies will not insure homes with wood-burning stoves.
- Consult a chimney sweep. Chimney sweeps (listed in the phone book under "Chimneys") may be one of your best sources of reliable information.

FOR MORE INFORMATION

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Focus on Energy

Focus on Energy is a public-private partnership offering energy information and services to energy utility customers throughout Wisconsin. The goals of this program are to encourage energy efficiency and use of renewable energy, enhance the environment, and ensure the future supply of energy for Wisconsin. For information about the Focus on Energy services and programs, call 1.800.762.7077 or visit www.focusonenergy.com.