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Wood Pellet Stoves

Gregg Stewart, Wright's Hearth, Heat & Hone

More and more Americans are seeking environmentally friendly ways to heat their homes and propel their vehicles and biomass fuels are an efficient, cost-effective alternative. While not new, these fuels are beginning to hit the "big-time" as demonstrated by their inclusion in the 2005 Federal Energy Policy Act.

Wood pellets are a non-fossil, biomass fuel, an extremely efficient heating source and are manufactured from a fraction of the millions of tons of waste sawdust produced annually in North America. No additives are introduced to the sawdust during the manufacturing process, the pellets are held together by lignin, a substance naturally found in wood. This makes wood pellets the cleanest burning and environmentally safe solid fuel available today. Pellets are sold in clean, easy to store 40 pound bags that most people can easily pour into the storage hopper of their pellet stove.

Wood pellets have been in use as a heating fuel for more than 30 years in the much colder New England states and the Pacific Northwest. It's only recently that they have become popular in the southeastern United States. This increase in popularity was made most evident in western North Carolina during the winter of 2005-2006 when the soaring price of liquid propane and natural gas boosted sales of both wood pellets and pellet burning appliances

While the rapid shift to pellet heating in late 2005 caught both the pellet and pellet appliance manufacturers by surprise the industry has gone into high gear to ensure there are no repeats of last winter's shortages. The opening of a new pellet production facility near Galax, Virginia demonstrates the belief that wood pellets are a viable heating alternative for the future.

Pellets are burned in specially manufactured freestanding stoves, furnaces, and fireplace inserts and have consistently demonstrated their efficiency and convenience in residential, commercial and public applications. Significant technological improvements have been made in pellet burning appliances over the years. Modern pellet appliances are self-igniting and thermostatically controlled. This creates a level of convenience comparable to traditional central heating

systems but the similarity stops there. Unlike other central heating systems that rely on a variety of gases, oil or electricity, pellet appliances use only minimal electricity that costs the user only pennies a day. Modern pellet stoves, inserts or furnaces require only that the user keep the pellet hopper full and then give them a quick 15 minute cleaning once a week.

Currently more than 20 manufacturers produce a variety of pellet appliances in the U.S. and Canada. These appliances are extremely efficient averaging 80% efficiency across all brands and models. Some brands rank well above 90% efficient. This efficiency is achieved by forcing air into the appliance's burn chamber to create a mini-furnace. This ensures practically complete fuel combustion and a tremendous amount of heat that is transferred to the home through systems of heat exchangers and fans. The high level of combustion makes pellet appliances the lowest emission solid-fuel burning products available.

Clean and relatively low temperature exhaust coupled with "power venting" enable pellet appliances to be installed almost anywhere in the home. The only real limitation on placement of a pellet stove is proximity to an electrical outlet. Pellet appliances run on standard household power so you've got to be able to plug it in. Some manufacturers build battery backups into their appliances and others offer separate battery backups to enable eight to ten hours of heating in the event of a power outage. Of course a pellet stove can always be plugged into a portable generator with no loss of heat to the home.

Pellet appliances come in a wide variety of shapes, sizes and colors. They can be cast iron and look like a traditional wood stove or they can be steel and quite futuristic in appearance. Heat output from pellet appliances varies from about 30,000 BTUs in smaller stoves to 112,000 in large furnaces that can heat an entire home through installed ductwork. Heating capacity ranges from 1,4500 square feet to 3,000 square feet.

While there are many pellet success stories one of the most dramatic occurred in the winter of 2004 – 2005. After spending between \$500 and \$700 a month to heat their 100+ year old home with gas, and still being cold, an Asheville couple switched to pellet heat. A 68,000 BTU pellet stove was installed in their home and they immediately noticed the difference in temperature throughout their home. Soon they noticed a difference in their heating bill. The switch to pellet heat reduced their monthly fuel bill to about \$200 a month. As a result, their stove paid for itself in fuel savings the first winter they used it.

Pellet heat is clean, efficient and affordable. It is certainly worth consideration by those who are looking for an environmentally friendly way to heat their home or business. For more information on pellet fuel and appliances visit the Western North Carolina Green Building Council web site at www.wncgbc.org or call the hot line at 828-232-5080 or e-mail info@wncgbc.org