

# Woodfuel for Domestic Properties



## Fact Sheet

**Many people have heard about using wood to provide heat and hot water in public buildings or commercial properties. However woodfuel can also be used at home. By using wood the heat created does not contribute to climate change if felled trees are replaced, the wood is renewable if sourced from a sustainably managed woodlands and the use of wood as a fuel could help the rural economy.**

### Open Fires

The most obvious way to use wood for heating in a house with a suitable chimney is an open fire. Though this is simple and often attractive it is a poor way of creating heat, at best open fires are about 20% efficient.



Open fires are attractive but inefficient

### Traditional stoves

Woodburning stoves, made from either cast iron or steel are up to 75% efficient when run properly on seasoned wood. This means that only 25% of the heat generated is lost up the chimney in comparison to 80% or more heat being lost in a traditional open fireplace. Therefore though there is a considerable investment in installing a stove the ongoing fuel costs should be less.

Stoves are generally used as space heaters but they can also be used to heat water via a back boiler to provide domestic hot water or even central heating. To keep a consistent supply of hot water this does require that a stove is lit regularly and the fire maintained. However a

back boiler can be designed to contribute to a conventional central heating system, negating the need to light the stove so often.

### Modern stoves and boilers

There are also modern stoves and boilers which run on a variety of woodfuels, these are very efficient and compare well with fossil fuel heaters or boilers, running at 90%+ efficiency. Those using the simplest fuel source run on logs but there is also the choice of using woodchips or wood pellets.

### Wood pellets

Wood pellets are made from compressed wood residues (sawdust) and contain no adhesives as the naturally occurring lignin in wood acts as a binding agent. Pellets are the most appropriate fuel for domestic stoves or boilers because they have a high calorific value compared to their volume; therefore there is less need for large storage areas. Stoves generally require that pellets be fed into a hopper manually while boilers can have automatic screw-feed systems but once delivered to the application both have automated feed systems which then trickle pellets into the burning chamber as required.

### Log boilers

Log boilers are the next most appropriate woodfuel system for domestic properties but as it is difficult to produce log boilers with automated feed systems they need regular feeding; however in comparison with woodburning stoves the periods between tending can be much greater. Because they

require considerable space and can create dust and dirt when being stoked log boilers are best located in an outhouse.

### Woodchip

Woodchip systems are fully automated but require far more storage space for the fuel than pellet boilers of a similar heating capacity. For this reason woodchip systems are not used in individual domestic settings though they are more appropriate if the intention is to heat a number of properties.

### Clean Air Act

Before you considering some form of woodfuel heating you must ensure that you do not live in a smokeless zone or smoke control area. If so you may only burn wood fuel on an "exempt" appliance which is permitted to burn "unauthorised" fuels under the regulations of the Clean Air Act. Even though many wood pellet stoves would meet these standards only a few have received this exemption as the licensing process is long and expensive. Your local authority can tell you if you live in a smokeless zone.

For free and impartial advice about woodfuel contact:

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