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**Installing Wood Fuelled Heating
Advice Note for Householders**



Introduction

4NW are keen to promote the use of wood for heating domestic dwellings. Not only because it is a renewable fuel and can aid in combating of climate change, but because using wood to heat your home could potentially reduce the proportion of your income that you spend on fuel.

You may well have experienced the beauty of an open log fire in the past. However they are very inefficient. Most of the heat is lost up the chimney. Modern wood stoves and boilers are far more effective at heating your home.

Before you set out on the journey of using wood as a fuel, you must realise that it will require more effort and more space if you currently use oil or gas. You will have to buy and store your fuel. You will have to load your stove or boiler with fuel and remove and dispose of the ash on a regular basis. If you cannot undertake this then read no further!

We hope you find this advice note useful and enjoy the benefits of heating your home with wood.



Which stove or boiler?

Stoves

Stoves are basically room heaters so they need to be located in a chimney place or against an external wall with a new flue fitted outside. They can also come with a back boiler which will provide all the hot water for washing and potentially some or all of the hot water for radiators. To get an idea of the price range, a fully fitted, small, simple log stove with few flue changes can cost from under £800. At the top end, a state of the art, automated pellet stove with back boiler, fitted with a new flue liner, may well set you back £7500*.

Boilers

Boilers provide all the hot water for washing and the central heating and are generally located in an outhouse, garage or cellar. Some older buildings with cellars are ideally suited for boilers as they may have the chimney, storage area and even an outside loading port associated with old coal boilers. A fully fitted boiler can cost from £7500* for a simple dedicated log boiler to £20,000* for an advanced pellet boiler with fuel hopper.

There are some initial technical considerations as well. If you have a heating system without a hot water tank i.e. you have a combination (combi) boiler then unless you swap this system the most you can have are individual room heating stoves.

Flues, chimneys and ventilation

With all these options, a sound flue or chimney is necessary. Even if you have a chimney you may require a flue liner and alterations to your chimney pot. Flues need to be cleaned (swept) at least one a year. Stoves and boilers draw in a considerable amount of air. Once over a certain size there is a requirement to provide a minimum amount of ventilation. This may require making a hole in an external wall to fit new airbricks. Extraction fans including cooker hoods should not be used in a room containing an operating stove. They can adversely effect the stove's performance or draw smoke back into the room.

Maintenance

Log stoves require the most attention in terms of lighting, controlling the heat and cleaning. Boilers will usually have some degree of automatic controls particularly with regards heat output but some loading and de-ashing is still required. The most automated systems are modern pellet stoves and boilers. They light and stop automatically and can be programmed just like a gas or oil boiler. All they need is periodic refuelling, ash removal and annual servicing.

*Radiators, water tanks and other plumbing not included.



Purchasing fuel and storing it

Woodfuel comes in four forms; logs, briquettes, pellets or woodchips. Woodchips are generally unsuitable for the size of boiler used in a domestic situation.

Logs

Logs may be the wood fuel you are most aware of. They are the cheapest of the fuels mentioned here but they are also the most variable and difficult to store.

You need dry logs to burn in your stove, with no more than 25% moisture content (you can buy log specific moisture meters online). This means you have to buy them dry and store them under cover. Or, dry them yourself (sometimes called seasoning). This can take over a year and take up a lot of space.

Dry logs can be purchased in net bags from garage forecourts or garden centres for around £3/bag. However it is cheaper to buy bulk loads from a local firewood merchant. As you become more used to using logs you will find out that some light easier than others and some burn for longer. As well as moisture content this variation can be down to the type of tree the logs come from.

Briquettes

Briquettes are log sized lumps of compressed, dry wood that can be burnt in log stoves. They are often supplied in sealed plastic bags so they can be stored outside under cover. Briquettes can be found on some garage forecourts, garden centres and specialist stove shops.

Pellets

Pellets are small cylinders of compressed sawdust looking similar to some animal feeds and the same as wood based cat litter pellets. Pellets are very dense, dry and require less storage space. However in terms of the energy they provide, they are more expensive than logs, mains gas and heating oil.

In a domestic situation you are best to buy a pallet load of small sealed plastic bags. The bags can be stored outside under cover and brought in to fill the stove or boiler when necessary. A pallet load (1 tonne) of pellets will cost around £250 to be delivered. Some pellet suppliers can be found in the [NW Biomass Fuel Supply Directory](http://www.merseyforest.org.uk/files/NW_biomass_fuel_supply.pdf)¹.

Storing fuel

Fuel storage space is a key consideration in determining what type of appliance you buy. The smaller the storage space, the less of your total heating requirements can be provided from wood. You can add wood heating to your home at a range of scales, from a small pellet stove for an urban dwelling with little storage, to a full heating system for a large rural residence with plenty and space for drying and storing logs. To fully heat a 3 bedroom house for a year might require around 16 cubic metres of logs. That's about the size of a Transit van.

¹ [www.merseyforest.org.uk/files/NW biomass fuel supply.pdf](http://www.merseyforest.org.uk/files/NW_biomass_fuel_supply.pdf)



A few regulations

Smoke control

Do you live in a Smoke Control Area sometime called a smokeless zone? If you live in an urban area you may well do. To find out you need to contact your local council and ask for an Environmental Health Officer dealing with air quality. If you are then you are only allowed to use a special clean burning appliance from an exempt list².

Building regulations

Building regulations also apply. Details can be found in Part J, Combustion Appliances and Fuel Storage Systems³. Don't be daunted by the technical nature of this.

What's important to know is you cannot install the stove or boiler yourself. It must be installed by a qualified person who will certify that it meets the building regulations. Just as approved gas engineers are accredited by CORGI, the solid fuel registration body is HETAS⁴.

Also if you live in a listed building, conservation area or a landscape designated area the planning authority may be interested in the appearance of any new flue or chimney.

² www.uksmokecontrolareas.co.uk/appliances.php?country=e

³ www.planningportal.gov.uk/england/professionals/en/4000000000503.html

⁴ www.hetas.co.uk



Case study

Chris and his partner live near to Chorley in a 2 bed end of terrace house. Prior to autumn 2004 the house was heated using a non-condensing gas combi boiler. The decision was taken to heat the whole house using wood.

Chris took the advice of a HETAS registered company. They checked the integrity of the existing chimney and found a flue liner would not be required, although some work would be necessary with the chimney, including a different pot on the roof.

They were also outside a smoke control area so the choice of equipment was greater. They settled on a Morsø Dove with a back boiler which was installed in the front downstairs room. This cost £1400. Because they previously had a combi boiler for the radiators and hot water, a hot water tank based system had to be installed.



The additional installation costs for the stove, chimney works, new plumbing and hot water tank was £2300. Chris and his partner are happy with this system. They de-ash it every 2-3 days when it is running and have the chimney sweep and stove checked once a year.



Despite having a small back yard, storage is not a problem and they have created a simple covered area in one corner. It stores about 2 months supply. They fill up the store in spring and summer with scavenged logs from friends and colleagues which lasts the first couple of months. The rest is brought as seasoned logs from a local tree surgeon. In the depth of winter they get through about 1 and a half netting sacks of logs a day. Averaged out across the whole year they are spending about £30/month on heating.

If they moved house would they do it again? The answer is a resounding yes, although if the house already had a modern gas condensing combi boiler they might only put in a room heating stove.



Useful information

Lancashire Boiler Case Studies

www.lancashire.gov.uk/corporate/web/view.asp?siteid=3681&pageid=17280&e=e

Logpile

www.nef.org.uk/logpile

Biomass Energy Centre

www.biomassenergycentre.org.uk

Low Carbon Building Programme⁵

www.lowcarbonbuildings.org.uk/about/hfaqs/
Financial support of up to £1,500 or 30% of the relevant eligible costs may be available.

North West Fuel Supply Directory

www.merseyforest.org.uk/files/NW_biomass_fuel_supply.pdf

Woodfuel Heating in the North of England a Practical Guide

www.creativeconcern.com/iwood/pdf/WoodfuelHeating.pdf

⁵ www.lowcarbonbuildingsphase2.org.uk/

This guidance note was written by
The Mersey Forest on behalf of **4NW**.

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