



An introduction to Woodfuel

There has never been a better time to discover the benefits of burning wood for heat. Modern wood burning stoves and boilers offer an affordable and attractive way to heat your home, office or business and, as wood is a renewable source of energy, you are doing your bit towards fighting climate change. Using a local fuel supplier will help woodlands across Cumbria to thrive and adapt into the future, and have a positive impact on the local economy and employment.

Woodfuel types

There are three basic types of woodfuel and heating systems, each with different advantages:

- Logs - these are widely available and locally produced, but log systems cannot be automated and storage areas are needed.
- Chips - feed systems are automated and cheap to run, but chips are expensive to buy as they require care and specialist equipment in their production.
- Pellets - these are made from compressed sawdust, are a standard product, are energy dense and flow well. They are a good option if space and storage are an issue, but are more expensive to run.

Log and chip feed systems require care to ensure that the fuel is seasoned correctly, to a 25% moisture content or less. For softwoods seasoning takes around a year of storage, and for hardwoods two years. This is best done undercover with good air movement and preferably in the sun. You can check the moisture content of your logs using a cheap moisture meter. High moisture content will result in poor performance of the stove or boiler, greater carbon releases and the build up of potentially flammable tars and creosotes in the flue or chimney. Good pellets will conform to EN+ standards, will be made from virgin wood, be bark free and the bag should not contain too much dust. These are becoming increasingly widely available.

Why install the technology?

Woodfuel connects to existing heating systems very well and is generally very competitive with all current heat sources especially oil, electric and LPG fired systems.

The Government is encouraging installation of this technology through offering a Renewable Heat Incentive (RHI). This is only available for [Microgeneration Certification Scheme](#) (MCS) or [CEN Solar Keymark](#) accredited equipment, installed by an accredited MCS installer for schemes smaller than 45kW. The RHI is due to be introduced in 2011 along with the Renewable Heat Premium Scheme for domestic properties. Information regarding these schemes is available from the [Energy Saving Trust](#) and [Department for Energy and Climate Change](#) (DECC).

From 2012 the Government's proposed Green Deal will provide householders and businesses loans for energy efficiency works, repayable through savings on energy bills, with additional help available for vulnerable people and buildings requiring extensive works. For more information visit www.decc.gov.uk

What permissions are required?

Planning permission: Domestic System

The installation of domestic wood fuel heating systems do not require full planning permission, provided that the flue does not exceed the highest part of the roof by one metre or more; or unless the project

requires significant alterations to an existing chimney, or is in a mixed use building. In the case of land within a Conservation Area, National Park or World Heritage Site, consent would be required if the flue would be installed on a wall or roof slope forming the principal or side elevation of the dwellinghouse and would be visible from a highway. For the purposes of the planning regulations relating to micro renewables, a “dwellinghouse” includes a building which consists wholly of flats or which is used for the purposes of a dwellinghouse.

Should a new boiler house or wood store be required as an extension to the main dwelling, or as a curtilage building, this may constitute permitted development and would be required to be assessed against criteria contained within the Town and Country Planning (General Permitted Development) Order 2008

Permitted development rights in relation to flues do extend to Listed Buildings; however, Listed Building Consent is always required. Pre-application consultation with the Local Planning Authority (LPA) is advised.

Planning permission: Commercial

The installation of a wood fuel system would constitute an engineering operation depending upon the scale of the system to be installed. Any ancillary structures required for the storage of the timber would constitute a building operation, for which consent may also be required. In this regard, whilst elements of an installation may constitute permitted development, and not require full planning permission, it is advised that full details of the proposed scheme be forwarded to the LPA for their consideration in each instance due to the variability of any scheme.

Building Regulations

A newly installed wood burning stove also needs to comply with Building Regulations, this can be achieved in two ways, either directly through your local authority building control department or by using a [HETAS registered installer](#) who will notify the authority that the work has been completed to the required standard.

Smoke Control Areas

It is an offence to emit smoke from a chimney or boiler within a Smoke Control Area unless you are using a boiler or appliance that is exempt from these regulations. Currently there are no Smoke Control Areas within the Borough of Barrow, Eden District Council or South Lakeland District Council. Carlisle City Council, Allerdale Borough Council and Copeland Borough Council all contain some Smoke Control Areas. To find out where these areas are contact your local authority. If you live within a Smoke Control Area you can still fit a wood burning appliance but you must have the emissions tested and approved. Further information can be found at www.uksmokecontrolareas.co.uk.

What should I do next?

- Consider the space you have available for the boiler, internal and external fuel storage and internal and external fuel loading.
- Dig out your bills for energy sources that produce heat and hot water, this could be a mix of various fuel types. This will enable your installer to quote and size the right boiler.
- Discuss your likely wood fuel requirements with potential suppliers of fuel. A list of local suppliers can be found on the [Cumbria Woodlands](#) website.
- Shop around and get several quotes from installers. If you are installing a system of less than 45 kW and wish to apply for the RHI you will need a [Microgeneration Certification Scheme](#) registered supplier.

What should I ask my installer?

- How much fuel will I use per year, and how much storage do I need
- Whether ventilation is required and what ongoing maintenance will be required of the system
- What isn't included in their quote e.g. flues, connection to the existing heating system etc

Local Case Studies

Case study 1: Log burning stove with back boiler combined with solar thermal

A combination of heat provided from a log burning stove with a back boiler and a solar thermal array and a small amount of oil top up provide heat to this traditional three bedroom cottage in north Cumbria.

Cost of installation: £4,700

Income generated: Not eligible for RHI for two reasons, the first is that it's a log burning stove which are not MCS accredited and the second is that it is a single dwelling so would only be eligible to the first payment for one year from the Renewable Heat Premium Scheme.

Fuel used: 7 tonnes of timber per year which equates around £700, with the addition of 0.5 tonnes of solid fuel in the form of anthracite. This gives a carbon saving of 7 tonnes per year compared to if the property reverted back to oil. The comparative cost of oil heating for this property would be £1,600, so this system halves the heating bill for the household.



Case Study 2: Pellet Stove combined with solar thermal

This domestic system provides central heating and hot water for a 3 bedroom semi detached house. A pellet stove in the living room acts as both space heating and boiler and is combined with a solar thermal array and an electric immersion heater.

Fuel used: The hopper on the boiler used one 10 kilogram bag of pellets per day during the winter of 2011, except on the really cold days when 20 kilograms were used. This equates to approximately £500 for heating and hot water over the cold winter of 2010/11 plus additional electricity use which cannot yet be quantified.

Cost of installation: £7,500 for the pellet stove alone, excluding installation.

Income generated: Not eligible for RHI because it was not installed by an MCS accredited installer, although the pellet technology would be eligible for the Renewable Heat Premium Scheme which is likely to be a £950 one off payment.



Case Study 3: Log batch boiler

This exposed Cumbrian farm house is now heated by a 40kw log batch boiler, fuelled with timber harvested from the woodlands on the farm. Fuel used will be between 11 and 15 tonnes per year dependant on the amount of insulation retro fitted into the property.

Cost of installation: £15,000

Income generated: This boiler will eligible for the Renewable Heat Premium Scheme which will pay just under £1,000 in year one and then will link into phase two of the RHI as part of the Green Deal. Savings on oil are in the order of £3,350 per year. Carbon savings are in the region of 14 tonnes per annum.



Visit case studies like this during the annual [Cumbria Green Build Festival](#).

For case study information from across the North West visit the Climate Change North West online map.
<http://www.climatechangenorthwest.co.uk/northwest-map.html>

Where can I find out more information?

Energy Saving Trust 0800 512 012 www.energysavingtrust.org.uk	Microgeneration Certification Scheme www.microgenerationcertification.org	Department for Energy and Climate Change www.decc.gov.uk
Cumbria Woodlands 01539 822140 www.cumbriawoodlands.co.uk Local suppliers, info and training	Cumbria Action for Sustainability 01768 210276 www.cumbriagreenbuild.org.uk Events, site visits and training	HETAS www.hetas.co.uk Official approval body for installers and systems



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Please note: the information provided in this factsheet is guidance only, for use at the client's discretion. We in no way guarantee that should the information be acted upon, that planning permission would be granted or refused. It is recommended that you consult with your local planning authority to ensure that local planning requirements are fully addressed prior to any renewable energy installation.