



## Woodfuel Factsheet 7

### Two homes heated by wood

Wood burning stoves are a great way to burn logs efficiently and sales are soaring as more people turn to heating with wood.

The choice available is broad, from basic room heaters and cast iron boiler stoves to enamelled cooking ranges and stylish designer burners.

The stove you choose will depend on what you want it to do. Modern wood burning stoves make excellent room heaters. They are controllable, burn efficiently at high temperatures and produce much less smoke and ash than open fires. Their heat output can also be harnessed to provide hot water and heating throughout the home.

#### A simple home heating system

Retired nurse Maggie Dove relies almost entirely on wood to heat her two-bedroom terraced house.

A multi-fuel stove in the lounge provides domestic hot water and heats five radiators as well as keeping the room at a comfortable temperature. Maggie also uses it to

boil a kettle and for some of her cooking.

She buys seasoned logs, cut to size and delivered by a local firewood merchant, and stores them in three purpose-built shelters in her garden. "I get through about three loads a year," she said. "There's a fair bit of work in dealing with the firewood - I have to barrow it up the garden and stack the logs in the shelters. I'm fairly fit and can cope but realise that it wouldn't be ideal for everyone."

Maggie has a another small wood burning stove which heats a second downstairs room, and electric storage heaters which she keeps use of to a minimum.

"I'm keen to get solar thermal panels to add to the system but at the moment I can't do that as the building is listed," she added. "I used to use coal but now burn only wood in the stove. I wanted to reduce my carbon footprint and became aware that burning coal released a lot of carbon dioxide."

#### Performance

"I'm really happy with the system, it's fine for me," she said. "However it can't do everything at once. If I want to have the radiators really hot I have to have quite a big fire on; if I want a hot bath in cold weather I'd need to turn the radiators off for a while. In reasonable weather a smaller fire is fine; it will keep the living room cosy and provide background heat in the other rooms."

### Find out more

This series of factsheets explores how households, businesses and communities are pioneering the use of woodfuel. They have been produced as part of the Cairngorms Woodfuel Action Plan and a partnership project run by the Cairngorms National Park Authority and the Clim-ATIC EU programme.

#### A combined wood burning system with oil back up

Highland forester Willie Beattie knows all about the advantages of heating with wood.

His self-built home is kept cosy by a combination of a wood burning stove with a back boiler in the living room, and a classic Rayburn in the kitchen.

Being a woodfuel officer for the Forestry Commission ensures Willie is well up to speed on using wood as fuel.

But his love of firewood - and cooking on wood - stretches way back, and his enthusiasm for wood-fuelled kitchen ranges is no flash in the pan.

"I've always had a Rayburn and used it for cooking all the time - I think they're great," he said. "I tend to light mine every evening; it gives a warm heart to the kitchen and feeds the underfloor heating system as well as being excellent to cook on."

### The Facts

Heat source	Balmoral multi-fuel stove
Cost of stove	£645
Hot water	86 litre cylinder
Number of radiators	5
Annual wood consumption	3 tonnes

A wood burning stove provides a focal point in the living room, as well as adding to the heat produced by the Rayburn.

And a conventional oil fired boiler, included in the system as a back up, has only had to be used once since Willie moved into the house seven years ago.

### The system

The spacious five-bedroom house has been designed so the Rayburn is back-to-back with the large wood burning stove in the lounge.

The plumbing leads directly up to a 100 litre cylinder with a fitted with a Dunsley heat exchanger; a device which enables multiple heat sources to be linked into the system.

"I got the stove fitted with an unusually large back boiler, which has an output of around seven kilowatts - more than twice that of a normal stove boiler," Willie said.

"This means that the stove doesn't kick that much heat out into the room, but that's not important as the heat is going into the underfloor heating throughout the downstairs."

The six kilowatt output of the Rayburn's boiler, combined with the heat from the stove in the lounge, is enough to keep the house warm in all but the most bitter of conditions. The underfloor heating and two towel rails act as a thermal store, ensuring the system doesn't overheat.

"The system heats the hot water up to 40C then everything after that goes into the underfloor heating and towel rails. The Rayburn and living room stove also heat five radiators upstairs without any problem.

"The only time I've had to resort to using oil to give it an extra boost was during the hardest winter we have had for years. I've probably only used a couple of hundred of litres in all the time I've lived here."

## Contacts

For details of suppliers see [www.usewoodfuel.co.uk/Suppliers.stm](http://www.usewoodfuel.co.uk/Suppliers.stm)

HM Revenue and Customs  
[www.hmrc.gov.uk](http://www.hmrc.gov.uk)



He stresses the importance of having the wood well seasoned. "The key thing for any wood burning system is to have the wood really dry - that's a point that can't be stressed enough.

"Firewood needs to be seasoned to below 25% moisture content. Burning wet wood is bad for the system and will cause tarry residues to build up and increase the risk of chimney fires. It also means you're wasting energy drying off logs rather than heating your house."

### Funding

Non-automated wood burners are not eligible for funding under any existing grant schemes. The supply and installation of wood-only boilers was eligible for a reduced rate of 5% VAT at the time of going to press (August 2010) and final details of the new Renewable Heat Incentive scheme were due to be announced in 2011.

## The Facts

<b>Wood heat sources</b>	Rayburn Heatranger 355M plus wood burning stove
<b>Total cost</b>	£5,000
<b>Combined output</b>	13 kilowatts (excluding back up oil boiler)
<b>Hot water</b>	250 litre cylinder fitted with Dunsley heat exchanger
<b>Number of radiators</b>	Five, plus underfloor heating and two towel rails.
<b>Annual log consumption</b>	12 tonnes (weight before seasoning)
<b>Estimated annual saving</b>	£1,000

### Fuel

Willie sources firewood in bulk at a price of £20 a tonne on average, and processes and seasons it himself.

"I'm always two years ahead of myself in terms of wood and I reckon I get through about 12 tonnes a year," he said.



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