

# Wood-fuelled stoves with back boilers

A wood-fuelled (biomass) stove with a back boiler is a stove that provides heat not only into the room (like a conventional stove) but hot water to run one or more radiators as well. In some instances biomass stoves with back boilers are used to provide domestic hot water as well.

## Types of stoves with back boilers

Biomass stoves with back boilers can be fuelled using either wood pellets or logs. Wood-pellet stoves with back boilers tend to be more expensive than those fuelled by logs. You may be eligible for the domestic Renewable Heat Incentive (RHI) if the stove is solely fuelled using wood pellets.

A wood-pellet stove with back boiler also offers greater convenience and control than a log stove with a back boiler, as wood-pellet stoves:

- ✔ have automatic ignition
- ✔ require less storage space to store the fuel
- ✔ need loading with fuel less often as they have an integral hopper that can hold one to two days' fuel
- ✔ produce less ash
- ✔ can have temperature sensors.

Some models also:

- ✔ can be programmed to come on automatically like a conventional boiler
- ✔ have the facility to be operated by remote control

## Choosing a wood-fuelled stove with a back boiler

When choosing a stove with a back boiler, consider:

- ✔ how much heat will be needed in the room
- ✔ how much heat is needed to run the radiators
- ✔ whether you need domestic hot water as well
- ✔ whether the stove will be part of a larger heating system or work alone.

The answers to these questions are best made in conjunction with a qualified heating engineer who should be able to advise you on system design and sizing.

A large number of different makes and models of log burning stoves with back boilers are available. [Find more information and costs of log stoves with back boilers at the Stoves Online website.](#)

When choosing a stove with a back boiler is it worth taking note of how the back boiler has been constructed. Back boilers lined with glass are likely to last longer than those made from steel. Stainless steel will last longer than steel, but it is likely to cost a bit more.

Back boilers can be bought separately from stoves and in some cases retrofitted to an existing stove, although the overall efficiency of the stove and boiler is not likely to be as efficient as a factory-fitted stove and back boiler.

Some pellet stoves with back boilers are MCS certified – [find them by doing a product search on the MCS website.](#) There are also other pellet stoves with back boilers which are not MCS accredited which might be better suited to your needs although they will not be eligible under the domestic Renewable Heat Incentive.

A wood-burning stove with a back boiler may be suitable for your home if you:

- ✔ are off the gas network
- ✔ have an existing chimney that that can be lined or an external wall through which a flue can exit
- ✔ have an existing cylinder or thermal store or space for one as this will improve the efficiency of your heating system and enable a number of different heating appliances to be linked together
- ✔ have room to store the fuel – wood fuel is cheaper if you can buy in bulk
- ✔ have one or more local fuel suppliers – search for a local supplier of logs or pellets at the [LogPile website](#) or the [National Biofuel Supply Database](#).

For a pellet stove, you'll also need an electrical connection near where the stove will be located, as a pellet stove uses electricity to run the fan and auger.

You'll also need to have the time and energy to load the stove (pellets for loading into a stove usually come in 10kg to 15kg bags) and maintain the stove by (for example) removing the ash (although this is not an onerous task for a pellet stove).

Your home may not be suitable for a stove with a back boiler if:

- ✔ you have small rooms with insufficient space for a stove with a back boiler – pellet stoves with back boilers in particular tend to be larger than wood burning stoves and cannot easily be recessed into an existing chimney breast as they are quite tall (around 1600mm with the hopper lid open) and have to be loaded with fuel from the top
- ✔ you have insufficient room to store the fuel
- ✔ you do not have a reliable, local supply of fuel, especially if you are using logs – pellets, being denser and packaged in bags, are easier to transport.

### Stoves with back boilers compared with fossil-fuel central heating systems

#### Advantages

- ✔ Substantial carbon dioxide savings compared with using a conventional fossil fuel.
- ✔ Can be a large financial saving compared with using some fossil fuels, particularly oil or LPG.
- ✔ MCS-certified pellet (but not log) stoves with back boilers may be eligible for domestic RHI Payments.
- ✔ It is possible to be self-sufficient if you have your own source of wood.
- ✔ You will have heat even if there is a power cut.
- ✔ Some biomass stoves with back boilers have one or more hot plates so that they can be used additionally for cooking as well.

#### Disadvantages

- ✔ A log stove with a back boiler cannot be programmed to come on while you are out; some pellet stoves with back boilers can be.
- ✔ You have to manually feed the stove with fuel, although pellet stoves with back boilers do have an integral hopper which reduces the number of times the stove has to be refuelled.
- ✔ You need space to store logs or bags of pellets.
- ✔ It may be difficult to control the temperature output of the stove although some pellet stoves with back boilers have temperature sensors.
- ✔ There is a time lag between lighting the stove and getting hot water. For this reason stoves with back boilers are

often coupled with a thermal store.

- ✔ Another way of heating hot water is likely to be needed in the summer months as you are unlikely to want heat from the stove.
- ✔ You may get more heat into the room where the stove is situated than you want before all the radiators in the system are heated. This is particularly so for log stoves with back boilers. The proportion of heat that goes into the room can be reduced if an inset stove is used.

### Connecting to other renewables

By connecting a biomass stove with back boiler to a thermal store, it is also possible to link up with a conventional boiler which will run your central heating at times when the stove is not on or to link the stove to another renewable energy heat source such as a solar water heating system. A biomass stove with a back boiler and a solar thermal heating system are a particularly good combination as the stove can provide the majority of the heat demand in winter and the solar can provide most of the hot water demand in summer when no central heating is required.

Linking a log stove with a back boiler to a thermal store is also very useful if there are times when you want hot water and the stove is not lit. It can also reduce the time lag between lighting the stove and having hot water available if your stove is not linked to any additional heat source.

### Next steps

Start by finding an installer who can advise you on the most suitable stove for your home and how the system can be designed.

Installers of wood-burning stoves fuelled by logs will not be MCS certified unless they also install MCS-certified biomass products such as pellet stoves or biomass boilers (log-burning stoves are not included within MCS), so it's important that you choose an installer who is a member of a Competent Person Scheme.

