

Build Back Smarter Info Sheet

Wood and pellet burners

The opportunity to build back smarter

Earthquake repairs: Replacement of heaters (older wood burners, heat pumps), chimney removals

Opportunity to upgrade: Install better performing, appropriate sized, and ideally located heating systems such as low emission wood or pellet burners.

burners here <http://ecan.govt.nz/services/online-services/Pages/authorised-solid-fuel-burners.aspx>

Combined water and space heating

Both wood burners and pellet burners are able to have wetback water heaters installed with them to heat your hot water. This generally works best where your hot water cylinder is close to the burner (within about 5 metres); otherwise plumbing costs can get high. If you live in an urban area, make sure that your burner will still meet the clean air standards set out by the Ministry for the Environment – visit <http://www.mfe.govt.nz> to find a list of authorised wood and pellet burners which meet National Environmental Standards.

Build Back Smarter recommendations

In a well-insulated house, you will need less heating than in a poorly insulated house, so prioritise ensuring insulation levels throughout the house are good.

If you currently do not have a main heat source or your current heating is inadequate or being replaced, consider the capacity you will need either to heat just the main living area or to produce excess heat to transfer to the bedrooms. Typically, a pellet burner, a modern low emission wood burner or a heat pump are good options.



Wood burners

Modern, enclosed wood burners are much more efficient than open fires, and with a wide range of models available (8kW – 30 kW), most houses can be heated by a wood burner. Models can be freestanding or inset into an existing chimney. Generally inset burners are less efficient, and while using an existing chimney can save space, they're often poorly located to enable your whole house to be heated. It's often better to install a freestanding wood burner.

Some models can have a wetback attached, and still meet current emissions standards, however it's important to check this. A wetback uses 6-9% of the energy produced, so you may need a larger burner to compensate.

The Ministry for the Environment's website www.mfe.govt.nz/laws/standards/woodburners/ lists wood burners and pellet burners that comply with emission requirements. Check also for local bylaws on air emissions; Canterbury, for example, has rules for the types of heating you can use (see Environment Canterbury authorised solid fuel burners here <http://ecan.govt.nz/services/online-services/Pages/authorised-solid-fuel-burners.aspx>)

Wood is a renewable fuel and, so long as wood that's burned is replaced with growing trees, it's carbon neutral. If you have a free supply of dry, untreated timber, wood burners are the cheapest heating option.

Good for:

- Heating large areas.
- Where wood is cheap or freely available, or in areas with poor electricity security.
- Houses with poor insulation – we recommend that you insulate, but if you can't, this is the cheapest way to heat your home.

Pros:

- Are a relatively cheap heater to run and can be combined with a wetback to provide hot water heating.
- Generally can provide whole house heating
- Near-carbon neutral and renewable heating.
- Works even in a power cut.

Cons:

- Generally are large heaters – at least 8kW - which can result in hot spots if the heat is not moved around through open doors or through a heat transfer system.
- Does require a dry space for storing wood. Stacking, chopping and moving wood are required.
- Older models and those burning damp wood can contribute to air pollution. Wood burners emit tiny particles of smoke which, if inhaled a lot, can cause respiratory disease. All wood burners sold since September 2005 for non-rural use have to comply with national environmental standards.



Pellet burners

Pellet burners are a cleaner option than wood burners. They burn compressed wood pellets which are made from sawmill waste - so burning wood pellets is a form of recycling. The pellets contain nothing but wood.

Pellet burners start with an electric lighter and many come with a thermostat and timer.

Good for:

- Heating larger, well-insulated spaces.

Pros:

- Pellet burners produce very little smoke and burn more efficiently than wood burners.
- Carbon neutral and a renewable heating type.
- Bags of pellets are easy to handle and control, and can help to manage heating costs on a weekly budget.
- Are a fairly low cost way to heat and can be combined with a wetback to provide hot water heating also.
- Are controlled by thermostat - some models have timers and remote controls to tailor operation.

Cons:

- Requires electricity to run.
- A limited range of wood pellet suppliers – this has led to price increases in recent years.
- Convective heat rather than the radiant heat of a wood burner – you can't sit in front of it for that toasty warm feeling.
- To warm the whole house, heat needs to be moved around through open doors or a heat transfer system.
- Smaller output than wood burners (mostly 8kW -15kW) means large houses may need more than one pellet burner.
- The cheapest way of getting pellets is in large quantities – which requires pre-purchase and dry storage.

