

Build Back Smarter Info Sheet

Heat pump heaters

The opportunity to build back smarter

Disaster repairs: Replacement of heaters (older wood burners, heat pumps) and resiting of poorly located heat pumps

Opportunity to upgrade: Install better performing, appropriate sized, and ideally located heating systems such as Energy Star rated heat pumps or low emission wood or pellet burners. Poorly located and sized heat pumps are common. Improving size, location and performance will reduce heating bills and lead to more efficient heating.

Build Back Smarter recommendations

The opportunity to upgrade your heating will depend on:

- Your existing insulation levels
- Your existing heating and where you are heating
- Your experience of how cold your house is
- The size of the areas to be heated
- The amount of window area you have (windows lose the most heat)

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, you have several options – typically a pellet burner, wood burner or heat pump – depending on the capacity you will need either to heat just the main living area or to produce excess heat to transfer to the bedrooms.

More about heat pumps

Other than passive solar, heat pumps are among the most energy-efficient forms of heating available.

They work by taking heat from the air outside your home and using it to warm the air inside, using a process that's a bit like a refrigerator working in reverse. They can do this even when the temperature is cold outside.

Heat pumps are controlled using a thermostat, so you can set them to keep your home within a set temperature range. It's important to understand how the controls work – a common problem is not having the heat pump on the right setting (cooling or heating depending on the season).

Heat pumps come in various sizes, from single room heaters to ducted whole-house systems. It is important to get a pump that is the right size for the area to be heated. If the heat pump is too small for



the area it will have to work harder and will be less energy efficient. In colder locations, two or more large heat pumps may be required to heat a whole house.

Location is also important – like all heaters, they are best located where you want the heat. Because it's easiest to install a heat pump on an external wall, some installations are poor performers. If located in a hallway, it's important the outlet points towards the bedrooms where the heat is needed.

In theory, you can make significant savings on your heating costs by using a heat pump, particularly if you are replacing other electric heaters. However, in practice, many people who install heat pumps keep their homes significantly warmer than before and they end up getting increased comfort rather than lower power bills. Additionally, there is the temptation to use your heat pump for summer cooling - heat pumps can increase your summer power bills, cancelling out any winter energy savings.

Good for:

- Room-specific heating.
- Areas (such as Christchurch) where there are severe air pollution problems.
- A good money saving option for people who are currently heating a lot with electric heaters.

Pros:

- Heat pumps are more efficient than other electric heaters, especially Energy Star models.
- Depending on your electricity prices, heat pumps are one of the cheapest ways to heat.
- Highly controllable with a thermostat setting and, in most models, a timer for switching on and off to suit needs.
- Some heat pumps also incorporate air filters that remove dust and pollen, which can be helpful for people with asthma and allergies.

Cons:

- Less efficient when outside temperatures drop below 7°C and can stop working completely in deep snow or in very cold, humid conditions.
- Given they are essentially a one room heater, they are expensive to install.
- Can be noisy (particularly for neighbours).
- Heating costs can be higher than expected if used for cooling in summer or for those who have increased the amount that they heat.
- Must be installed by a qualified installer.
- Completely reliant on electricity supply



In addition all heat pumps are required to show energy rating labels for both heating and cooling. Some models are a lot more efficient at heating than cooling and vice versa.

