

Fact Sheet 6

Heating and Cooling improvements



Residential Efficiency Scorecard

The Scorecard is a home energy rating program.

An accredited assessor will visit your home, look at the building features and fixed appliances, and generate a certificate showing an energy star rating, hot weather rating and appliance efficiency ratings.

Your Scorecard assessor will give you advice on how to make your home more comfortable and energy efficient, so you can keep energy costs down.

To find out more about the Scorecard or to request an assessment, visit www.victorianenergysaver.vic.gov.au/scorecard.

Heating and cooling in the Scorecard certificate

Heating and cooling systems often use a lot of energy and often form a significant portion of electricity or gas bills. Depending upon where you live, you are most likely using either heating or cooling for six months of the year. The efficiency of your appliances and how much of your home is heated and cooled impact upon the Scorecard ratings.

If the building shell achieves a poor rating, your heating and cooling is simply lost to the outside.

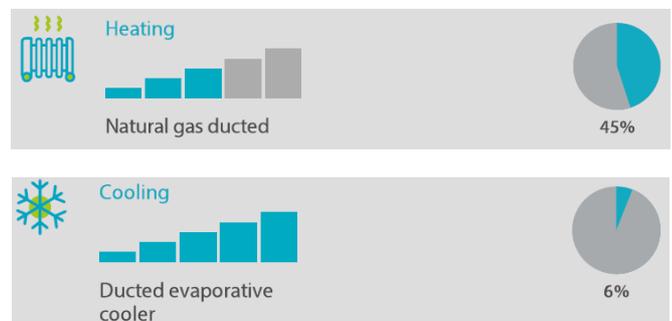
Refer to the Building shell improvements fact sheet to find out more. Many improvements are possible in most homes, and some can be done at very low cost.

In hot weather, fans are very cheap to run but, to be effective, you must be in the stream of air.

Using the Scorecard rating

When you have received your Scorecard certificate, look for the heating and cooling symbols on the second page.

These symbols show how well these features perform in comparison to the most efficient systems on the market. This picture shows the heating has a rating of three out of five and the cooling is very efficient with a rating of five out of five:



The percentage shown indicates how much these features contribute to the energy use of the fixed appliances for your house. This example shows a home where 45% per cent of energy use is for heating and only 6% for cooling.

Unless they are highly efficient, several options will be suggested on how to upgrade your system. The Scorecard Assessor can help you to understand the issues you should consider.

The Scorecard assumes that, if there is a fixed heater or cooler in a room, it is used. The Scorecard doesn't consider mobile plug in heaters or coolers or the behaviour of the occupants of the house.

Heating

Central and Space heating

Centrally heated homes generally have most of the home heated, for instance by gas ducted heating. Space heated homes often have only one or two rooms heated using an appliance like a wall furnace. Space heating usually costs less to run than central heating, but comfort levels in unheated rooms can be lower.

Reverse-cycle space heating

As well as providing cooling in summer, reverse-cycle air conditioners can be very effective and efficient space heaters.

Most reverse cycle space heaters have a star rating. When purchasing, look for an appliance with 4 stars or more. Using multiple reverse-cycle systems can actually be more efficient than installing central heating as there are no ducts through which heat can be lost.

See www.energyrating.gov.au for a list of models and their ratings.

Gas space heating



Gas space heaters can be very effective and efficient heaters. These can be in the form of floor-mounted console heaters, wall furnaces, gas faux fires and other designs.

These heaters have a star rating. When purchasing, look for an appliance with 5 stars or more. Again, installing multiple systems may be more efficient than central heating.

See the Australian Gas Association list of current models and their energy rating:
www.aga.asn.au/complete_product_directory

Ducted heating

Many houses have a large reverse-cycle air conditioner or gas heater to provide heating to the whole of the house. These produce hot air in a central module, which is pumped along ducts to either floor or ceiling vents. However, ducted heaters lose heat from the ducts while the warm air is on its way to where you want it. If you are considering this type of heating, choose a model that has zones so you can choose when you heat each area of your house.

If you're looking for a gas system, choose appliances with a rating of 5 or 6 stars.

Some electric ducted reverse cycle systems have star ratings. Choose the highest star rating possible. Ductwork should be regularly checked by a

tradesperson to ensure there are no leaks. If you have an older system, the ducting is unlikely to be insulated. Consider upgrading the ducting along with the heater.

Hydronic heating

Hydronic heating systems that circulate hot water or coolant through radiator panels or the floor can be very cheap to run if an efficient hot water system is used to heat the water. For efficient use of hydronic heating, all radiator room panels should have their own thermostat controls, so you can choose which rooms to heat.

Ensure that water circulation pipes are well insulated and that there is insulation behind the radiator panels. This could be in-wall insulation or a reflective surface behind the panel. This is particularly important for external walls.

Cooling

The main cooling appliances found in homes are reverse cycle air conditioning and evaporative cooling. Reverse cycle systems use a refrigeration cycle which can be reversed to provide heating as well. Evaporative systems use the evaporation of water to provide cool air.

All cooling appliances should only be used in the areas where they are needed, like the living areas during the day, and the bedrooms on particularly hot nights.

Reverse-cycle air conditioners (single room)

Reverse-cycle air conditioners are efficient coolers – with the added bonus they can also be used as a heater in winter.

When purchasing, look for an appliance with 4 stars or more. See energyrating.gov.au for a list of models and ratings.

Reverse-cycle ducted air conditioner

Large air conditioning modules can be installed centrally to provide ducted cooling. They have the same disadvantage as ducted heating, in that you will lose cool air from the ducts, and your system may not easily allow zoning to occur within the house.

Evaporative cooling

Evaporative coolers provide cooling using the evaporation of water rather than a refrigeration process. These can be single room units or a central system.

They can use much less energy than typical air conditioners, however, they are less effective in humid weather and require windows to be left open to allow air flow. These coolers do not have a star rating.