

Think  
Green

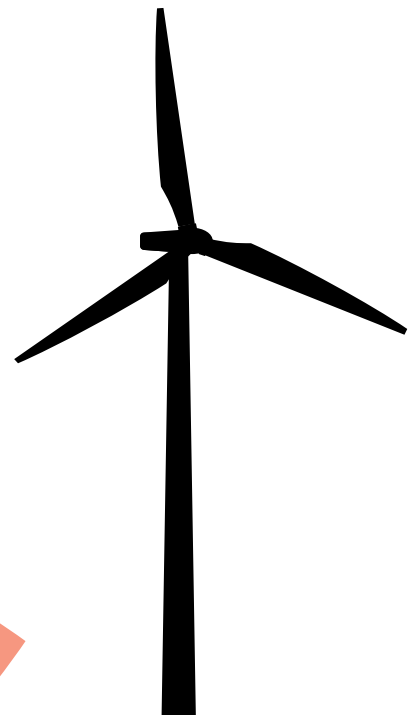
ENERGY



# DIY Home Energy Audit



Do you want to reduce your energy bills?  
Find out how you use energy in the home  
and what you can do to start saving.

[joondalup.wa.gov.au](http://joondalup.wa.gov.au)

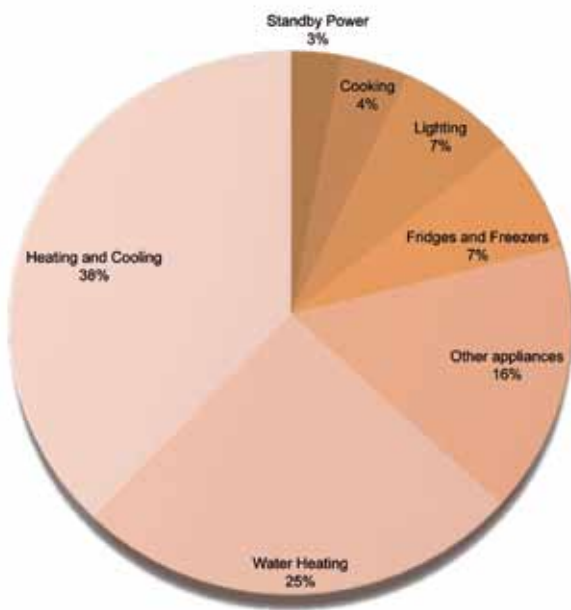


## How to complete your home energy audit

Completing the audit is easy and takes just 10 minutes. Read the questions in the 'What do you do at home?' column and tick off your answers in the YES or NO arrow boxes. If you answer NO, follow the advice in the 'What can you do to save energy' column. Everyone in your household can help to save energy. If you live with family members or house mates, include them when you complete your audit.

What do you do at home?	Most efficient	Least efficient	What you can do to save energy
Ask yourself, is this what I normally do at home? If the answer is YES, you're already 'Thinking Green'. If the answer is NO, you could make savings by following the advice in the 'What you can do to save energy' column.	<b>YES</b> 	<b>NO</b> 	Follow the advice in this column to help you save energy at home and minimise your energy bills.

Tick off your answers to each question or skip questions that are not applicable. When you're finished, you have a handy checklist of energy saving actions for your home.

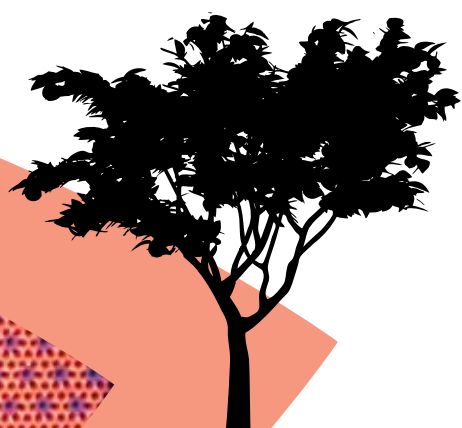
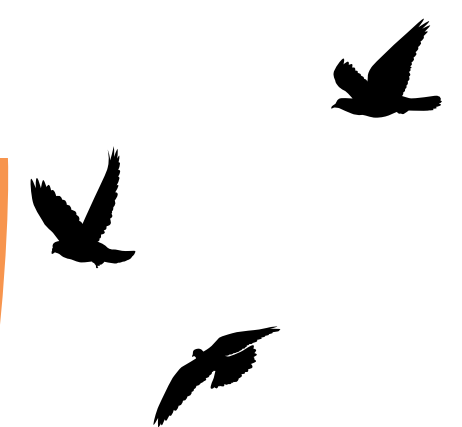


Source: Your Home Technical Manual

## What uses energy in the home?

The pie chart shows the average energy use in an Australian home. When saving energy start by focussing on the largest energy users. Changing your behaviour is often the most effective and lowest cost way to reduce energy use. Use the DIY Home Audit to see what routines, as well as physical changes, you can adopt in your home to make it more energy efficient.

Source: Your Home Technical Manual



## Heating and cooling

Heating and cooling can account for over a third of your energy use.

What do you do at home?			What you can do to save energy
Do you only heat and cool rooms that are being used?	YES ↓	NO →	Consider closing doors to unused rooms so you only heat or cool the smallest possible area. If you have a ducted system it may already be divided into zones eg living areas and bedrooms. Make use of zones to only heat or cool occupied areas.
In winter, do you open curtains, blinds and external shades so the sun can heat your home?	YES ↓	NO →	Use the sun as free heating in cooler months. Sunlight shining directly onto north, east and west facing windows can produce the same amount of heat per square metre as a one bar radiator. Use a compass to determine which direction your windows face.
When heating, do you set the temperature as low as you feel comfortable with?	YES ↓	NO →	Most people will find a temperature between 18°C and 21°C comfortable for heating. Every 1°C higher adds 10% to the running costs of your heating system.
Do you maintain your heating and cooling systems to ensure they operate efficiently?	YES ↓	NO →	Follow the manufacturer's maintenance instructions and have your systems serviced regularly.
When cooling, do you set the temperature as high as you feel comfortable with?	YES ↓	NO →	Most people will find a temperature between 24°C and 27°C comfortable for cooling. Every 1°C lower adds 10% to the running costs of your cooling system.
In summer, do you shade windows to keep your home cool?	YES ↓	NO →	In summer, close curtains and shade windows to prevent heat from entering your home. External shading of windows is the most effective way to keep the heat out. Sunlight shining directly onto north, east and west facing windows can produce the same amount of heat per square metre as a one bar radiator. Use a compass to determine the direction your windows face.
Do you open windows on summer afternoons to let the breeze cool the house?	YES ↓	NO →	In summer, when the cool sea breeze arrives in the late afternoon (from the South-West) open windows on both sides of the house to get the breeze through the whole house.
When you purchase a heating or cooling system do you seek advice about: <ul style="list-style-type: none"> <li>• the most appropriate system</li> <li>• the right size system</li> <li>• the energy rating label or, if there is no label, the running costs?</li> </ul>	YES ↓	NO →	The most efficient heating or cooling system is one that is suitable for the area it is heating or cooling and, where relevant, has been sized appropriately. Choose a system with a high Energy Star Energy Rating: <a href="http://www.energyrating.gov.au">www.energyrating.gov.au</a>
Do you use reversible ceiling fans to assist your heating and cooling systems?	YES ↓	NO →	Reversible ceiling fans create cool breezes in summer and can redirect warm air down in winter. They cost just 1c per hour to run.
Does your home have insulation?	YES ↓	NO →	Consider having insulation installed in your ceiling and walls if you don't have it. If you have insulation already, ask a licensed insulation installer to check its effectiveness or upgrade your insulation to a higher R-value. In Perth, an R-value of 4.1 is recommended for roofs and 2.8 for walls.
Have you sealed up gaps around doors and windows that let draughts in?	YES ↓	NO →	Use draught excluders, door and window seals or gap filler to prevent draughts. Important: When using an unflued gas heater you must ensure you have adequate ventilation.

## Water Heating

Heating water for showers and clothes washing is a major energy user.

What do you do at home?			What you can do to save energy
Do you take short showers – ie less than four minutes?	YES ↓	NO →	Taking shorter showers will save water and reduce the energy needed to heat water.
Do you have a solar, electric heat pump or a five star energy rated gas water heater?	YES ↓	NO →	Choose an energy efficient water heater when your current water heater needs replacing.
Is there insulation on external water heater pipes?	YES ↓	NO →	Insulate pipes with foam tubing, known as lagging, to prevent heat loss.
Do you have a 3 star WELS (Water Efficiency Labelling and Standards) rated waterwise showerhead?	YES ↓	NO →	If the flow rate is more than nine litres per minute on your current showerhead, consider installing a 3 or more star rated water saving showerhead.
Do you ensure taps don't drip in your home?	YES ↓	NO →	Have dripping taps fixed as soon as possible. Not only do they waste water, leaking hot water taps waste energy too.
Do you know what temperature your thermostat is set to?	YES ↓	NO →	Set instantaneous hot water systems to 50°C and storage systems to 60°C. Important: Some systems will require a licensed professional to change the thermostat temperature.

## Other Appliances

Running costs for all the appliances in a home can add up.

What do you do at home?			What you can do to save energy
Do you know how much power your appliances use?	YES ↓	NO →	You can borrow a Portable Power Meter from your local City of Joondalup library to find out how much energy your household appliances are using.
Do you use the energy rating labels to compare running costs when you purchase appliances?	YES ↓	NO →	Consider the ongoing running cost when choosing an appliance. Energy efficient models will cost you less to run over the life of the appliance. Choose a system with a high Energy Star Energy Rating: <a href="http://www.energyrating.gov.au">www.energyrating.gov.au</a>
Do you run your dishwasher and washing machine with a full load?	YES ↓	NO →	Washing a full load means fewer washes overall and reduces the amount of wasted energy and water.
Do you always wash clothes on a cold water cycle?	YES ↓	NO →	Cold water cycles will use less energy than warm or hot cycles. The majority of energy used by washing machines is for heating water.
Do you hang your clothes out to dry?	YES ↓	NO →	Clothes dryers can use a lot of energy. Hanging clothes out to dry is more energy efficient. Clean your lint filter regularly to ensure your dryer is operating efficiently.
When you purchased your washing machine or dryer, did you select an energy efficient model that was the right size for your needs?	YES ↓	NO →	Consider an energy efficient model when you replace your old washing machine or dryer. Choose a system with a high Energy Star Energy Rating: <a href="http://www.energyrating.gov.au">www.energyrating.gov.au</a>

## Fridges and Freezers

Most fridges and freezers are switched on 24 hours a day, 7 days a week.

What do you do at home?			What you can do to save energy
Do you run one fridge and freezer?	YES ↓	NO →	Only run additional fridges and freezers when necessary – eg a bar or second fridge could be turned off when not required.
When you purchased your fridge and freezer did you choose an efficient model that was the right size for your needs?	YES ↓	NO →	When you replace your old fridge or freezer choose an energy efficient one. Choose the right size fridge first then select the model with a high Energy Star Energy Rating: <a href="http://www.energyrating.gov.au">www.energyrating.gov.au</a>
Is your fridge temperature between 3°C and 5°C?	YES ↓	NO →	Adjust your fridge temperature to between 3°C and 5°C. If colder, more energy is used while higher temperatures allow food poisoning bacteria to grow. Use a fridge thermometer to check the temperature.
Is your freezer temperature between -15°C and -18°C?	YES ↓	NO →	Adjust your freezer temperature to between -15°C and -18°C. Use a fridge thermometer to check the temperature.
Are your fridges and freezers located in a cool, well ventilated area and out of direct sunlight?	YES ↓	NO →	Move unit to a cooler location if possible or shade windows to stop direct sunlight. Ensure air can circulate around all sides.
Do your fridge and freezer doors seal properly?	YES ↓	NO →	Replace door seals if ineffective.
Is there less than 5mm of frost build up in your freezer?	YES ↓	NO →	Defrost your freezer regularly. An auto defrost model should do this automatically.



## Lighting

Make a habit of switching off lights when you leave a room.

What do you do at home?			What you can do to save energy
Do you turn off lights when you leave a room?	YES ↓	NO →	Leaving lights on in an empty room wastes energy and adds to your bills. Make a habit of turning off lights.
Do you open curtains and blinds to use daylight instead of turning on lights?	YES ↓	NO →	Daylight costs you nothing. Open curtains and blinds before turning on a light.
Do you have energy efficient lights - eg CFLs or LEDs?	YES ↓	NO →	Consider replacing inefficient lights with energy efficient lights. Replace incandescent globes with Compact Fluorescent Lamps (CFLs) and halogen downlights with Light Emitting Diodes (LEDs).
If you have outdoor lighting, is it operated by motion sensors?	YES ↓	NO →	If you regularly leave your outdoor lights on, consider installing sensor lights so they only come on with movement and turn off after a short period.
Do you use low wattage lights?	YES ↓	NO →	Select a light with the lowest wattage for your needs – it costs less to run.

## Cooking

Use smaller cooking appliances when you can.

What do you do at home?			What you can do to save energy
Does your oven door seal properly?	YES ↓	NO →	Replace door seals if ineffective.
Do you use small kitchen appliances instead of the oven – eg microwaves, electric fry pans?	YES ↓	NO →	Smaller appliances generally use less energy.
Do you defrost frozen food in the fridge?	YES ↓	NO →	Plan ahead and avoid using the microwave to defrost frozen food.

## Standby Power

Switch off at the wall to avoid standby power costs.

What do you do at home?			What you can do to save energy
Do you leave appliances on standby – eg televisions, stereos, computers?	YES ↓	NO →	Turn appliances off at the wall to prevent standby power use. You can hire a Portable Power Meter from your local City of Joondalup library to measure standby power use.

## More information

### How to check for draughts

You can check for draughts by:

- looking for daylight around the edges of doors and windows.
- looking for gaps around skirting boards.
- feeling draughts on a wet finger.

### How to insulate hot water pipes

You can purchase foam tubing from hardware and plumbing stores. Look for one which has been cut along its length and has a self-sealing adhesive strip.

To install:

- slide the foam tubing onto the external heater pipes.
- peel off the adhesive strip and join the sides together.

### Check your shower flow rate

You will need:

- a bucket and something to measure water volume such as a measuring jug.
- a stopwatch.

Turn the water on full and let it flow into a bucket for ten seconds. Measure the amount of water in litres. Multiply by six to determine the flow rate in litres.

Shower flow rate example:

Water flow in 10 seconds = 2 litres

2 litres x 6 = 12 litres in 60 seconds

Flow rate is 12 litres per minute.

### Check your fridge or freezer temperature

You will need:

- a fridge thermometer.

You can purchase fridge thermometers at hardware stores and some kitchenware stores. Place your thermometer below the top shelf and towards the front of the fridge, or anywhere in the freezer. Leave the thermometer in the closed fridge or freezer for about 30 minutes and then observe the temperature.

### How to check door seals on fridges, freezers and ovens

Close the door on a piece of paper. The door seal should be strong enough to firmly grip it. Check in several places around the edge of the door. Look for sections that are cracked and brittle or pressed out of shape. If the paper slides out easily, or the seal is damaged, consider having it replaced.

### Would you like to do a more detailed audit?

Borrow a Portable Power Meter

Portable Power Meters are available for loan from all City of Joondalup libraries. Power Meters can help you measure how much standby power your appliances are using and how much this is costing you each year.

Enquire at your local City of Joondalup library or phone **9400 4707** to see if a kit is available for loan.

## Thinking of Renovating , Building an Extension or a New Home?

Considering energy use before you start your new project will ensure you get the best outcome. Check out the Renovator's Guide on the Your Home website at [www.yourhome.gov.au](http://www.yourhome.gov.au)

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