

A photograph of a family in a kitchen. An older woman with glasses and a white shirt is smiling. A man in a light blue shirt is pointing at a tablet held by a young girl. Another young girl is in the background holding a bowl. The tablet screen shows the 'actsmart' app interface with various energy-saving tips and data.

actsmart[®] energy saving guide

A guide to improving your household's energy efficiency and reducing consumption and costs



ACT
Government



actsmart[®]
household
energy.water.

Getting smarter with energy use



If you're looking to become a more energy-wise household, you will be astonished at how much difference a few simple changes can make.

Follow the tips and pointers in this booklet and your household will soon be using less energy, emitting less greenhouse gas, helping the environment, and saving money on your utilities bills.

A financial reality

In recent years, we've seen substantial increases in Australian domestic electricity and gas prices. These price rises have made many households consider reducing their energy use in order to save money. And, with work continuing to replace and expand the nation's energy infrastructure, price rises are set to continue.¹ So, now more than ever, reductions in your energy use will translate to positive effects on your bank balance.

Did you know?: The average Canberra home spends \$1,567 every year on electricity consumption alone.²

An environmental necessity

The ACT Government has established greenhouse gas reduction targets of 40% below 1990 levels by 2020, and 100% below 1990 levels by 2050.³ While assessments show that we are on track to achieve these lofty targets, recent scientific evidence and changes to national emissions targets highlight the need for Canberrans to lead the way and double their efforts to diminish the rate of global warming.

Residential electricity accounts for approximately 55% of ACT greenhouse gas emissions, with residential natural gas accounting for 9% of overall emissions.⁴ Each and every Canberra household can make a contribution to the ACT becoming a more sustainable and carbon-neutral community.

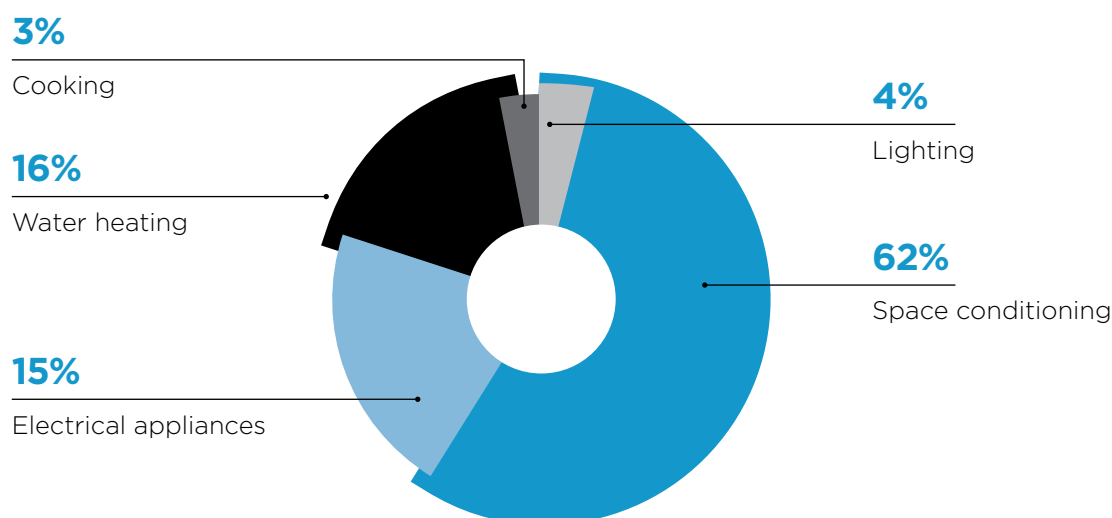
1 *Update Paper 8: Transforming the electricity sector*, Garnaut Climate Change Review – accessed 1 April 2013

2 Based on annual household energy use of 7200 kWh - Australian Energy Market Commission and 2017-18 ActewAGL electricity rate of 21.76 cents per kWh (GST Incl.)

3 www.environment.act.gov.au/__data/assets/pdf_file/0007/1019167/ACT-Greenhouse-Gas-Inventory-for-2015-16.pdf

4 *ACT Greenhouse Gas Inventory Report 2009-10*, September 2012, Independent Competition and Regulatory Commission

Average energy use of a Canberra household⁵



Create a focus for your efforts

This booklet has lots of information and tips to help you reduce your energy use. Be aware that it can be challenging to change your habits and everyday behaviours all in one go. It's important to be clear about your priorities and how you're going to achieve each objective.

When setting your goals, follow the SMART principle:

Specific: Clearly outline what you plan to do.

Measurable: Aim for specific targets i.e. energy volumes or dollar amounts.

Attainable: Make your goals challenging but possible to achieve.

Realistic: Be flexible and allow for unforeseen circumstances.

Timed: Set an exact date of when you hope to achieve your goals.

Most of the tips in this booklet apply to both renters and homeowners. If you're renting, it's important to have your landlord's (or their agent's) approval before making any major or structural modifications.

Complete the Action Plan and review it regularly

On page 27, there's a blank Action Plan that your household can complete to establish your energy-saving aims. Use the spaces provided to outline your goals and the corresponding actions you will take to achieve them. You can tear or cut out the Action Plan and put it in a prominent location, such as on the fridge door, to help your household stick to the plan. And remember, your Action Plan can be altered at any time to suit changing circumstances.



Understanding your energy use



Monitoring your progress toward achieving your energy goals can be rewarding and enjoyable. Having a handle on how much energy you're using—and how you're using it—makes it far easier to make adjustments to stay on course with your objectives.

Get to know your bill

There's plenty of information on your bill that can help you better understand and control your energy use. As your bill usage changes, try to take notice of where you may have used energy differently during this time.

How you compare

There is a graph on your bill that shows your average daily energy usage. There is also information on how you compare with other households in your area. This can prompt you to question why you may be using more energy than others in your neighbourhood. It never hurts to compare energy costs and behaviours with family, friends and neighbours.

Your pattern of use

If there is a large spike in your energy use in winter, you're likely to be using a significant amount of electricity on heating. If it's consistent all year round, your energy consumption may be concentrated on hot water, refrigeration, appliances or cooking. This can help you focus your efforts to save energy. Note: If you have gas heating, your electricity bill is less likely to spike in winter than a household with only electricity.

Your peak and off-peak use

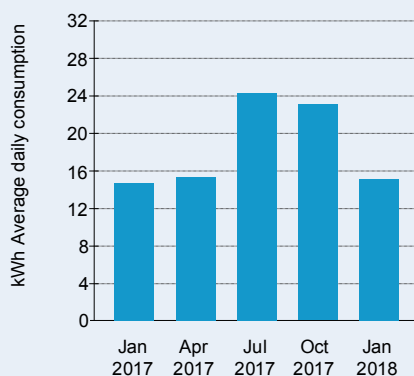
Off-peak electricity is generally used for hot water storage systems or in-slab heating. Your use of off-peak electricity can help you understand what proportion of your electricity is used for hot water or in-slab heating. This can be a big proportion for homes with large, inefficient hot water storage systems but efficient space heating. You can find out more about your energy use by visiting energymadeeasy.gov.au

Install an energy monitor

Energy monitors are a great way to get the whole family involved in energy-saving, and many children enjoy seeing the monitor numbers going down as your family saves energy. Perhaps this helps explain why energy monitors have been proven to help reduce energy use.⁶

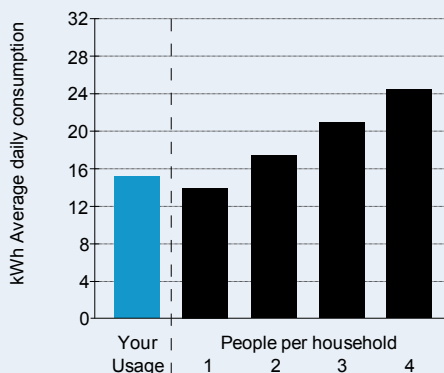
Energy monitors help detect appliances that are consuming energy when not doing anything useful, like a video game on standby or a light that has been left on in the garage.

Your electricity usage



*Does not include solar-generated energy

Compare your usage to other households in your area



*Does not include pool usage.

See page 24 for pool usage

They can also reveal which appliances make energy use 'spike' e.g. a microwave oven, a kettle or an electric wall heater.

There are a range of monitors available, including power meters, appliance-specific monitors and 'all of home' monitors. 'All of home' monitors allow you to compare current energy use with last week's or last month's usage. Many monitors have built-in budget systems, letting you set your specific spend level, with an alarm to alert you if you go over budget.

Regularly read your meters

A cost-free way of monitoring your energy use is to become familiar with reading your own electricity and gas meters. Once you understand what the dials and digits mean, this is really quite simple. To learn how to read energy meters, visit:

actewagl.com.au/help-and-advice/how-to-read-your-meters

Read your meters periodically and track the readings in a table to see your daily, weekly or monthly energy use.

Time-of-use metering

Time-of-use meters, also known as Smart Meters, have the ability to meter your electricity consumption based on three separate time periods during the day:

1. 'Peak' – 7am to 9am and 5pm to 8pm
2. 'Shoulder' – 9am to 5pm and 8pm to 10pm
3. 'Off-peak' – 10pm to 7am.

The three tables below compare the advantages and disadvantages of time-of-use metering (charges effective as of July 2017). In each example, the household has consumed 1820kWh of electricity over a quarterly billing period.

Table 1 shows the expected quarterly electricity cost based on the standard flat home rate. **Table 2** shows the time-of-use charges where most of the electricity consumption has occurred during the 'Peak' periods, which is typical for a working family of four. **Table 3** the household has shifted its usage into the 'Shoulder' and 'Off-peak' periods to reduce their electricity bills, which is typical for a home occupied during the day.

Table 1. All usage charged at the Standard 'Home' Rate

Meter Number	Meter readings		kWh		Charges	Amount	GST	Total
	Previous	Present						
EN*123456:1	6,780	8,600	1,820	standard rate –	\$0.198	\$360.00	\$36.00	\$396.00
Total			1,820			\$360.00	\$36.00	\$396.00

Table 2. Time of Use metering

Meter Number	Meter readings		kWh		Charges	Amount	GST	Total
	Previous	Present						
EN*123456:1	6,780	7,870	1,090	peak –	\$0.261	\$284.27	\$28.43	\$312.70
EN*123456:2	5,780	6,287	507	shoulder –	\$0.187	\$94.56	\$9.46	\$104.01
EN*123456:3	1,955	2,178	223	off-peak –	\$0.147	\$32.69	\$3.27	\$35.96
Total			1,820			\$411.52	\$41.15	\$452.67

Table 3. Time of Use metering

Meter Number	Meter readings		kWh		Charges	Amount	GST	Total
	Previous	Present						
EN*123456:1	6,780	7,105	325	peak –	\$0.261	\$84.76	\$8.48	\$93.24
EN*123456:2	5,780	6,598	818	shoulder –	\$0.187	\$152.56	\$15.26	\$167.81
EN*123456:3	1,955	2,632	677	off-peak –	\$0.147	\$99.25	\$9.92	\$109.17
Total			1,820			\$336.57	\$33.66	\$370.22

6 There are several studies showing that energy monitor display units can cut average energy bills by around 10%. To find out more about energy monitors, visit www.energysavingtrust.org.uk/Resources/Features/Features-archive/Smart-meters-your-questions-answered

Know your appliances

The table below lists indicative annual running costs* of many common household appliances.

What do appliances cost to run per year?	
Kitchen	Annual Cost*
Oven	\$83
Cooktop	\$73
Dishwasher — 3 Star	\$67
Fridge/Freezer 400 litre — 3 Star	\$122
Chest freezer 200 litre — 3 Star	\$84
Microwave (1000W)	\$37
Toaster (1000W)	\$11
Electric kettle (1500W)	\$28
Living Room	Annual Cost*
TV — LCD (LED) (90-110cm) 7 star — 1.5 star	\$28 (7 star) — \$115 (1.5 star)
TV — LCD (90-110cm) 5 star — 1.5 star	\$73 (5 star) — \$164 (1.5 star)
TV — Plasma (90-110cm) 4.5 star — 0.5 star	\$82 (4.5 star) — \$231 (0.5 star)
TV — CRT (51cm) 1.5 star — 0.5 star	\$59 (1.5 star) — \$77 (0.5 star)
DVD player (includes standby)	\$10
Digital set top box (includes standby)	\$25
Desktop computer	\$73
Laptop computer	\$24
Bathroom	Annual Cost*
Exhaust fan	\$8
Hair dryer	\$14
Laundry	Annual Cost*
Washing machine (front loader) — cold wash 7kg/3.5 star	\$13
Washing machine (front loader) — warm wash** 7kg/3.5 star	\$39
Washing machine (top loader) — cold wash 8kg/2.5 star	\$19
Washing machine (top loader) — warm wash** 8kg/2.5 star	\$78
Clothes dryer (2000W)	\$79
Lighting	Annual Cost*
Incandescent (60W-100W)	\$23-\$37
CFL (13W-20W)	\$5-\$8
Halogen down-lights (20W-50W)	\$8-\$19
CFL down-lights (6W)	\$2
LED down-lights (4W)	\$1

* This is a guide only. Exact costs will vary depending on the energy efficiency and use of the appliance and the behaviour of the user. Costs have been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive).

**Warm wash — minimum wash temperature of 35°C at the start of the wash cycle.



SOME QUICK CHECKS YOU CAN CARRY OUT

Where is my household's gas meter located?

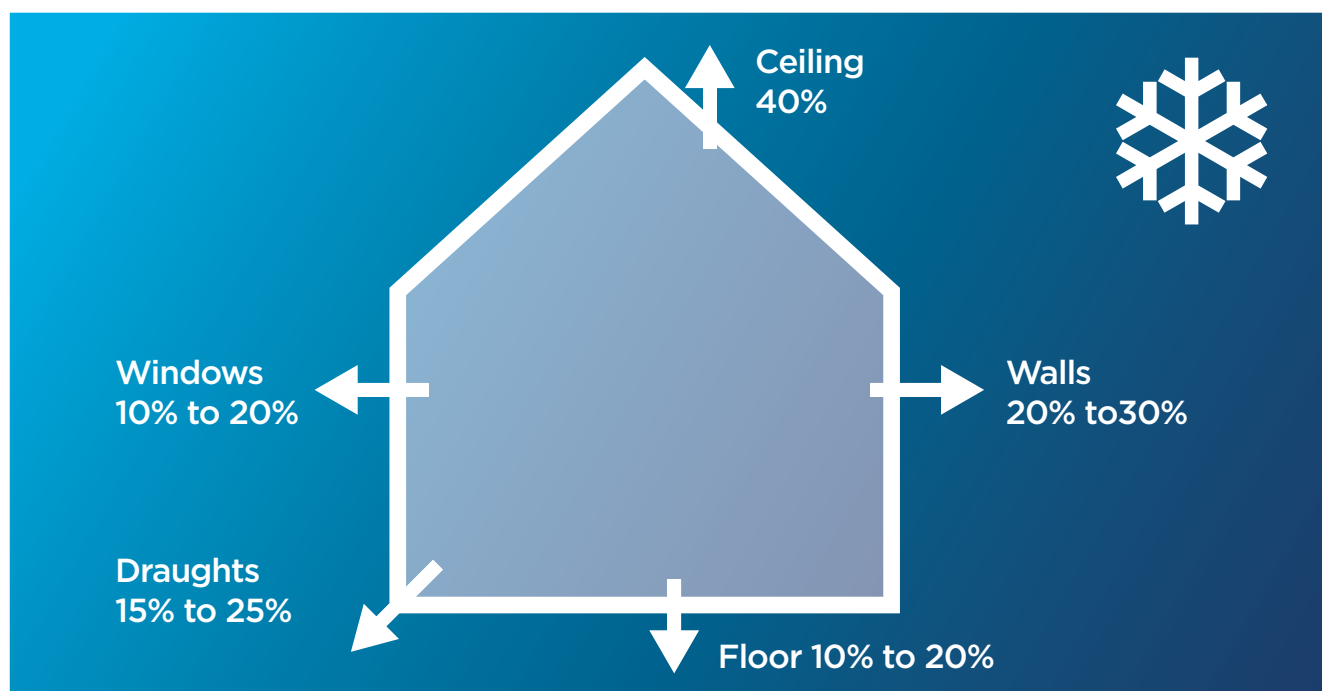
Where is my household's electricity meter located?

Keeping warm in winter



For most Canberra households, space heating in winter accounts for more than half an entire year's energy use. Significant savings can be made by understanding how and why your home loses heat. You can do this by completing some practical tasks around the house.

Heat loss in winter



Insulate

- Check that you have adequate insulation, at least in your roof but also in your walls. Ceiling batts should be a minimum of R5, which is approximately 240mm. If you do not have R5, consider having your insulation topped up.

Use the sun

For every two square metres of window exposed to direct sunlight, the heat coming in through your window is like having a one-bar radiant heater running.

- Open your curtains and blinds during the day to let in the winter sun, and close them as the sun goes down to keep in the warmth at night.

Seal gaps

Warm air can commonly escape through gaps and cracks around windows and doors, while draughts make you feel cold even when the air is warm.

- Seal gaps around windows and doors with sealant using a caulking gun.
- Use door snakes and other draught excluders.
- Make sure exhaust fans have draught stoppers installed.

Consult with an expert about gaps and cracks that can be sealed, allowing you to control your home's ventilation.

For free expert advice, contact Actsmart on actsmartadvice@act.gov.au, call 1300 141 777 or attend a free workshop.

A range of DIY videos are available at actsmart.act.gov.au.

Cover your windows

Air circulating around cold, exposed windows will substantially reduce your ability to heat the air.

- Install double glazing or fit your windows with thermally-backed curtains or energy-efficient blinds (such as honeycomb or roman blinds).
- Install pelmets at the top of your curtain rods, to further stop air movement around the window.

Work in smaller spaces

- Only heat rooms you're using at the time.
- Close doors to unused rooms to contain the heat.
- Keep all windows closed when the heater is on (note: unflued gas heaters require a slightly open window for extra ventilation).
- Use heaters that do not generate excessive air movement across your skin, such as fan heaters can make you feel cold.
- If your rooms are not easily closed off, or the house is draughty and cannot be effectively sealed, use radiant heaters (which heat you) rather than fan heaters (which heat the air).

Did you know? A small electric heater (1.2 kW) on for 10 hours a day costs around \$78 per month. This same heater on for 24 hours a day will cost around \$188 per month.⁷

Reduce the thermostat

Every degree you lower the thermostat will reduce your heating bill by as much as 10%. We recommend a thermostat setting between 18°C and 20°C.

- Turn down the thermostat setting on your heater.
- Wear extra layers of clothing to stay warm.
- When you're sitting down, use a heated throw rug for extra warmth.
- If your heating system has a timer, set it to come on 30 minutes before you get up or get home.
- Turn off heaters when you go out.

Make informed choices

- Efficient gas space heaters and reverse cycle air conditioners (also known as reverse cycle heat pumps) are cheaper to run than standard electric heaters.
- Electric in-slab floor heating often has the highest greenhouse gas emissions of any heating system and may be the most expensive to run.
- Portable electric heaters can be cheap to buy but very expensive to run.
- Radiant heaters work by heating objects (you), not the air. They allow you to keep warm without having to heat the entire room. Radiant heaters use a lot of electricity, so switched off when no one is in the room.
- Heated throw rugs are a great option if you are sitting for long periods of time. These will cost you less than five cents an hour to run.
- An electric blanket or hot water bottle will use much less energy than trying to heat your whole bedroom.
- Ducted central heating systems can run on either gas or electricity. Because they generally heat larger areas of the home, energy use and running costs will be higher than for space heaters. By heating only those areas of your home that are in use, a 'zoned' system allows you to maximise energy efficiency.
- Hydronic central heating systems heat water and distribute heat through radiators or pipes in the walls or floor. Hydronic systems can allow you to zone your heating area down to one room. They are usually gas-fired, but may also use a wood-fired heater, solar system or heat pump.

⁷ Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)



TOP TIPS ON HEATING

1. Seal it up — seal doors, windows and exhaust fans and keep in the heat. Reduce your heating bill by as much as 10%.
2. Turn it down — by turning down the thermostat by 1°C you can save up to 10% on your heating bills. Set your thermostat to a maximum of 20°C in winter.
3. Turn it off — when you're not using the room.
4. Wrap up — cover up with an extra layer of clothing, especially on your feet.



SOME QUICK CHECKS YOU CAN CARRY OUT

Does my house have insulation in the roof?

If so, how thick is it? Aim for R5 or 240mm at a minimum.

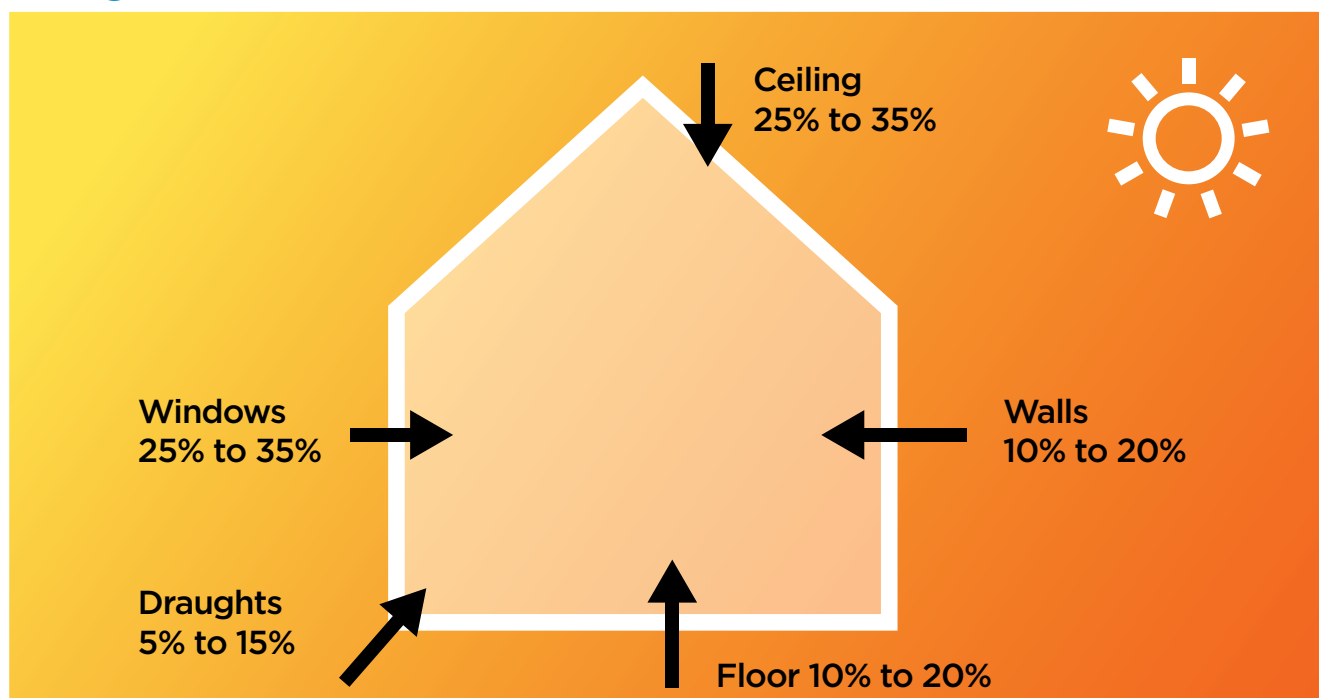
**Do my curtains adequately cover the windows? Are they backed with insulating material?
Do they have pelmets?**

Staying cool in summer



As with heat loss in winter, the heat allowed into your home over summer will impact your energy use. There are some simple and natural ways you can reduce heat gains around your house to stay cool during the warmer months. And, of course, less frequent use of the air conditioner means fewer greenhouse emissions and lower power bills.

Heat gain in summer



Shade your home

The best solution to keeping cool is to prevent the sun's rays from hitting windows and walls. Blinds and curtains on the inside of windows are good, but only about half as effective as keeping the sun off the windows in the first place.

- Create exterior shading for the eastern and western windows of your home.
- Create shade with deciduous trees and plants. These will shade your home in summer, and allow the sun to heat it in winter.
- Use shade cloth, awnings or matchstick blinds to shade the house.
- Cool down your concrete driveway and patio in summer by shading them with pot plants and shade cloth.

Did you know? Two square metres of glass facing the sun on a warm day lets in more heat than running a standard one-bar radiator — free heat in winter, but uncomfortable in summer.



Ventilate

- Open your windows at night to let in the cool evening air, then close them early in the morning.
- Use a fan to keep cool during the day. Remember that fans cool you, not the room, so turn them off when you're not in the room.
- If it's cooler outside your home than inside, face a fan towards an open window and open a door or window at the opposite side of your home. This will quickly replace the hot air inside your home with cooler air from outside.
- At night, place a fan near an open window to draw cool air into your home.
- If you do use air conditioning, 25°C — 27°C is a comfortable summertime setting. For every 1°C colder, you are using 10% more energy.

Generate less heat inside

- Limit the use of heat-generating appliances such as ovens, halogen lights, clothes dryers, plasma televisions and computers.
- Cook outside on the barbecue, or create meals that don't require cooking.
- Put off jobs that create heat, like ironing and cooking, until a cooler time of day.



TOP TIPS ON COOLING

1. Use a fan instead of an air conditioner.
2. Stop the sun from hitting your windows with deciduous trees, awnings, shade cloth or matchstick blinds.
3. Keep your house cooler by opening your windows, doors and curtains when it cools down at night, then closing them again when it starts to get warm outside.

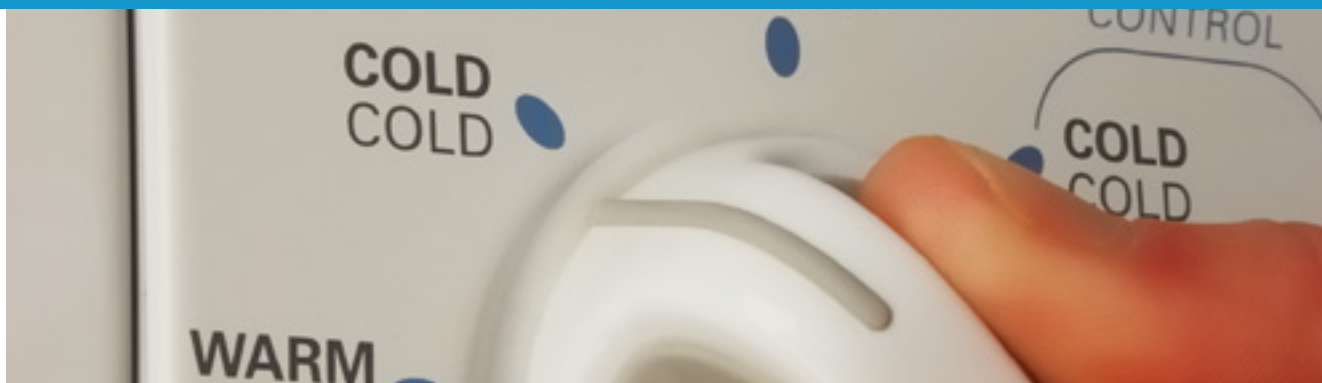


SOME QUICK CHECKS YOU CAN CARRY OUT:

Are my eastern windows exposed to direct sunlight in summer?

Are my western windows exposed to direct sunlight in summer?

Using less hot water



After heating in winter, using hot water is the second biggest consumer of energy in most Canberra households, accounting for 17% of total energy use. Energy use is particularly substantial where electric hot water systems are concerned. For more information about products that can help you save water, visit waterrating.gov.au

Focus on the shower

Up to 70% of your hot water is used in the shower. It is especially tempting in winter to use the shower to warm up, but this will increase both your energy and water costs.

- Use a shower timer and spend no more than three to five minutes in the shower.
- Replace inefficient showerheads*. A standard showerhead uses about 15 to 25 litres of water per minute, whereas a three-star rated water-efficient showerhead uses as little as seven to nine litres per minute.

* In Canberra, replacing a showerhead requires a licensed plumber.

Reduce tap use

- Turn taps off while brushing your teeth, shaving or washing your face. Fill the sink with a small amount of warm water.
- Turn mixer taps all the way to the cold side so you don't use unnecessary hot water. Only turn the hot water tap on if you really need warm or hot water.
- Repair any leaking taps. In one week, a dripping tap can waste enough water to half fill a bath.
- Use water-saving features such as tap aerators and flow restrictors.

Wash clothes in cold water

When you use hot water, 90% of your energy costs will be to heat the water and 10% to wash your clothes.

- If your clothes are very dirty, soak them in detergent in a bucket before you wash them.

Reduce the temperature of your hot water system

Many hot water thermostats are set at the highest temperature setting.

- Reduce your hot water storage tank to 60°C (an electrician may be required to do this) and save up to 10% on heating water. Hot water storage systems need to be at least 60°C to ensure no bacteria can grow in the tank.
- If you have an instantaneous hot water system, check that your thermostat is no higher than 50°C.

Get the whole household involved

- Educate and encourage others in your household to help reduce hot water use.



TOP TIPS ON HOT WATER

1. Take shorter showers. We spend around eight minutes on average in the shower. By halving your shower time, you could save up to \$190 a year.⁸
2. Use cold water to do your laundry.
3. Turn down your hot water storage tank to 60°C (an electrician may be required to do this) and save up to 10% on heating water.
4. Turn down your instantaneous hot water system to 50°C.
5. Replace your old showerhead with a water-efficient one and save up to 50% on your shower costs.



SOME QUICK CHECKS YOU CAN CARRY OUT:

Check how many litres per minute your shower uses by seeing how long it takes to fill up a standard 9 litre bucket.

What is the thermostat setting on my hot water system?

⁸ Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)

Saving in the kitchen



The greatest potential to save energy in your kitchen rests with your fridge and how you use it. However, there are a range of other kitchen appliances and cooking practices you can monitor in order to save energy.

Did you know? A typical household fridge costs about \$122 per year to run.⁹

A third of ACT houses have more than one fridge. Second fridges usually cost more to run because they are often older models and are placed in warmer environments, such as a garage or outside. These fridges are exposed to the elements and they work overtime to maintain their temperature.

Buy wisely

When buying any appliance for the kitchen, especially a refrigerator, check the energy rating and purchase an energy-efficient model. Although the purchase cost may be higher, the running costs over the lifetime of the appliance will be far less expensive.

Find out more about energy ratings and use the cost calculator at energyrating.gov.au



Keep your cool about temperatures

- Ensure your fridge and freezer are not too cold. Fridges should be between 3°C and 5°C, and freezers between -15°C and -18°C. Every extra degree colder uses 5% more energy. Please be aware, if the fridge is above 5°C it increases the risk of bacteria growth. Use a thermometer to check the temperature of your fridge and freezer.

Help your fridge do its job

- Locate your fridge and freezer in a cool spot, out of direct sunlight and away from heat-producing appliances such as cookers and dishwashers.
- Keep the fridge door closed as much as possible.
- Thaw frozen food in the fridge to help keep your fridge cool.

Keep your fridge well maintained

- Check the fridge seal regularly to make sure it's tight. To test the seal, open the fridge door, place a piece of paper between the fridge and the door, and shut the door. If the paper doesn't move easily when you pull it, it's a good seal.
- Make sure there's a gap of at least 80 mm at the back of your fridge, and space above it too. Inadequate ventilation can add 15% to a fridge's energy consumption.
- If your fridge has exposed condenser coils, clean them once a year and ensure there is enough room for air to circulate behind the fridge. (Accumulation of dust on condenser coils can increase energy consumption by up to 30%.)
- If your fridge/freezer isn't frost-free, defrost regularly according to the instructions, usually when the frost gets to about 5 mm thick.

⁹ Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)

Turn off fridges when not needed

- If you have a second fridge, turn it off when it's not needed. Avoid leaving it on just to keep drinks chilled for the weekend or for 'one can of pet food'.
- When you go away for an extended period, empty your fridge/freezer and turn it off. (Clean it and leave the door ajar or place dry tea bags in it to stop it smelling stale.)
- If you have an extra freezer, only use it when the freezer compartment of the main fridge is at capacity.

Consider other kitchen practices

- Only run your dishwasher when it's full. Run it on economy cycle.
- Toast bread in a toaster rather than under the grill.
- Fill the kettle with only the amount of water you need. Only boil it when you need it.

Be energy-conscious when cooking

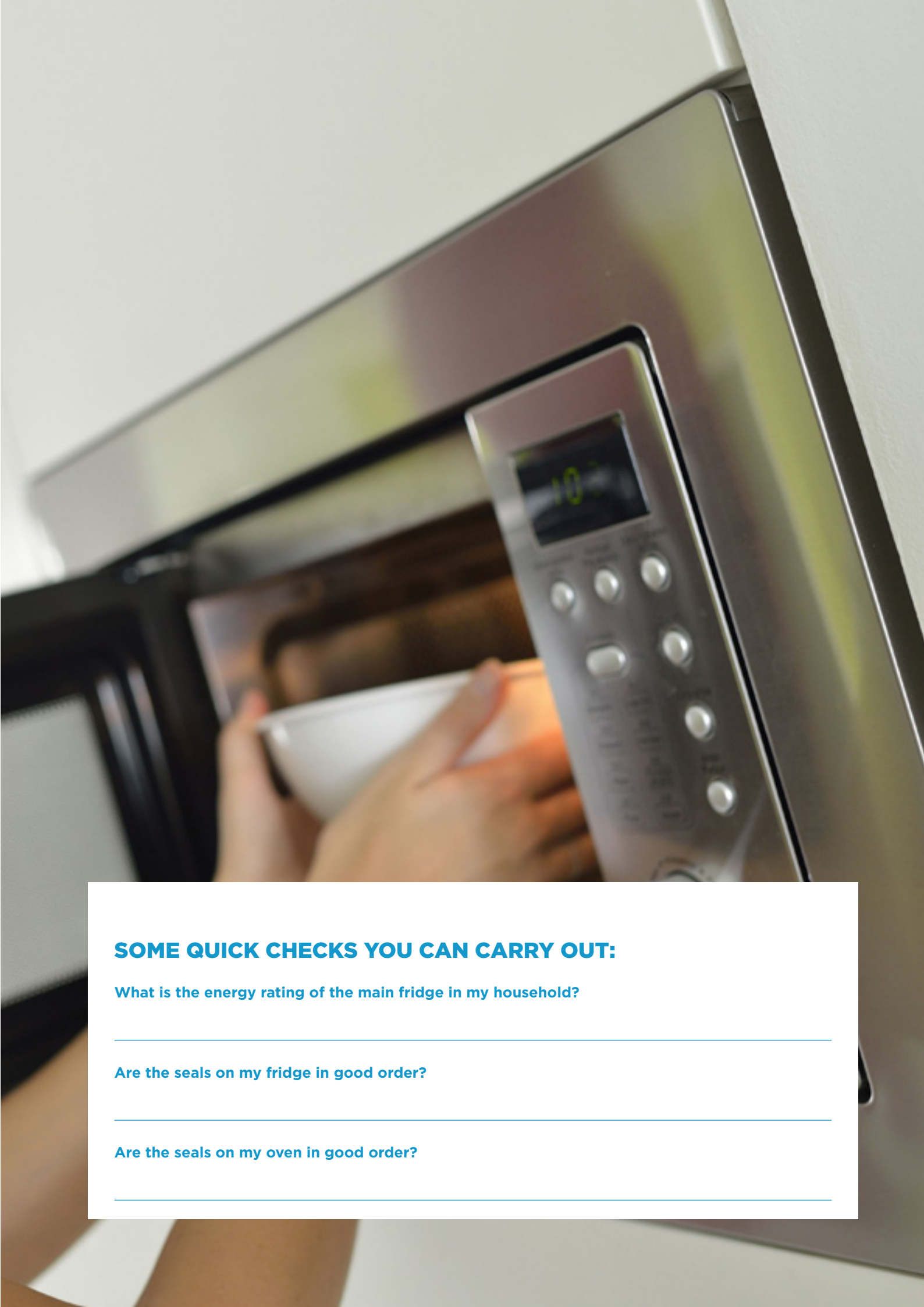
A few very simple changes to your cooking methods can add up to extra energy savings in your kitchen.

- Match your pot size to your stove element (avoids wasting energy to heat an oversized element).
- Simmer food with the pot lid on (reduces energy used in cooking by up to 70%).
- Turn off the hotplate early and use its residual heat to allow the food to finish cooking.
- Use a microwave where possible (can use up to 80% less energy than your stove).
- Reduce the amount of water you cook with (water uses a lot of energy to heat up). Steam vegetables, preferably in a microwave (this also retains nutrients).
- Use pressure cookers and rice cookers where practical (these are generally more efficient than conventional pots).
- Check the seals on your oven door to see if you are losing heat from the sides. If so, call a qualified tradesperson.

TOP TIPS IN THE KITCHEN

1. Check that the temperature of your fridge and freezer is not set too cold. Fridges should be between 3°C and 5°C and freezers between -15°C and -18°C.
2. Keep the fridge door closed. Less opening means less cold air will escape which saves energy.
3. Check the fridge seals with a piece of paper.
4. Simmer with pot lids on and reduce energy use by up to 70%.
5. Use a microwave where possible. This will use around 80% less energy than your stove.





SOME QUICK CHECKS YOU CAN CARRY OUT:

What is the energy rating of the main fridge in my household?

Are the seals on my fridge in good order?

Are the seals on my oven in good order?

Saving in the laundry



The laundry is perhaps one place in the household where energy-saving changes are quite easy to make. With the development of improved washing powders, there is now little or no difference between washing in hot or cold water. What's more, a few simple tips and tricks can help you save energy when, as a last resort, you need to use your electric clothes dryer.

Buy wisely

When buying any appliance for the laundry, check the energy rating and purchase an energy-efficient model. Although the purchase cost may be higher, the running costs over the lifetime of the appliance will be far less expensive. Find out more about energy ratings and use the cost calculator at energyrating.gov.au

Front loading washing machines are generally more energy and water efficient than top loaders. However the latest top loaders can be very efficient.

Wash clothes in cold water

When you use hot water, 90% of your energy costs will be used to heat the water and 10% to wash your clothes.

- Only use the washing machine when you have a full load.
- If your clothes are very dirty, soak them in detergent in a bucket before you wash them.

Dry clothes the natural way

Electric clothes dryers are around the fourth biggest energy users in the home. They're energy-hungry and they also shorten the life of your clothes.

- Use the sun's free energy to dry your washing.
- Use an outside clothes line where possible, or use a clothes rack on wet days.

If you really must use an electric clothes dryer:

- Dry heavy items separately from light ones (avoids over-drying of light items).
- Avoid overloading your dryer (results in longer drying times).
- Use the correct temperature setting for the type of clothes in the dryer.
- Clean the lint filter after use (clogged filters consume more energy and may become a fire hazard).
- Run an extra spin cycle in your washing machine before putting clothes in the dryer.
- Dry your washing in consecutive loads to use the warmth from the last load.

A woman with long brown hair, wearing a white long-sleeved shirt, is smiling and looking up as she hangs a pink patterned cloth on a clothesline. Other colorful clothes are hanging in the background against a brick wall.

TOP TIPS FOR THE LAUNDRY

1. Use cold water for washing.
2. Dry your washing on a clothes line instead of using the dryer.
3. Wash with a full load.



SOME QUICK CHECKS YOU CAN CARRY OUT:

What is the energy rating of my washing machine?

What is the energy rating of my electric dryer?

Saving on appliances



With the emergence of smartphones, tablets, laptops and a whole host of new kitchen gadgets, there are more electronic devices in our lives than ever before. We seem to be constantly recharging one thing or another. So how can we enjoy the benefits of new technology and limit our energy use at the same time?

Buy wisely

Compare the energy efficiency of appliances by using the energy-rating label. The label shows the number of stars and the consumption of the appliance. The more stars and the lower the consumption figure, the more energy-efficient the appliance is.

Remember that the consumption figure is based on average use, so the way you use an appliance means your consumption might differ from what's on the label. In the case of some products that use energy in different ways, such as washing machines using hot or cold water, there may be two different consumption figures. Find out more about energy ratings and use the cost calculator at energyrating.gov.au

Audit your current energy use

Borrow the Home Energy Action Kit from ACT libraries and do an audit of the energy used by your appliances. This will help you identify where you can save energy.

Be wary of standby power

Standby power is the power used to keep a device on so that it takes less time to fully turn on. It is sometimes referred to as 'vampire' power because it sucks energy even when you are not using the appliance.

- Turn appliances off at the power point.
- Plug related appliances into the same power board. That way, you'll only have to turn off one switch.

- Install a standby power controller or an energy-saving power board to use with televisions and computers. Depending on the type of energy-saving power board you buy, they can either automatically switch off the secondary appliances when you switch off the main appliance, or you can manually turn off all the appliances with a remote control for the power board.

Make other simple changes

- Don't leave appliances running when you're not using them. A television can cost over \$82 per year to run, so make sure you switch it off when no one is watching it.¹⁰
- Use power-saver options on computers, smart televisions and game consoles. Turn down the brightness on your computer monitor, and set it to turn off after five minutes of being idle.
- Don't overcharge appliances such as mobile phones and rechargeable batteries.
- Use timer switches for heaters and appliances to automatically turn on and off at prescribed times.

Did you know? Standby power can account for up to 10% of power used in a typical Canberra home, just for the convenience of a few seconds less to start things up. Turning off appliances at the power point can save approximately:

- **\$11** a year on the average TV
- **\$9** a year on the average DVD player
- **\$9** a year on a desktop computer
- **\$10** a year on a washing machine.
- That's **\$39** a year! Now, what other appliances can you turn off?¹¹

¹⁰ Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)

¹¹ Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)



TOP TIPS ON APPLIANCES

1. Turn off all appliances at the wall.
2. Get a power board which automatically shuts off all connected appliances when you turn off your computer or television.
3. Use a timer on appliances that you want to come on and go off at certain times of the day.
4. Turn off appliances when you are out of the room or they are not in use

SOME QUICK CHECKS YOU CAN CARRY OUT:

Can I reach the power point to turn off the television?

How many electric gadgets do we have in our kitchen?

Saving on lighting



Energy-saving light bulbs are one of the great success stories of a more environmentally conscious era. While each light bulb might not use a lot of energy, their energy use adds up over time. By following these tips you could reduce your energy bill by up to \$65 per year.¹²

Know when to flick the switch

- Open your curtains in the daytime to let natural light shine in (except where you are trying to keep the heat out).
- Turn off lights when you leave the room. Even if you're only out of the room for five or 10 minutes, it will save you money.
- Turn off outdoor lights when they're not needed, or consider using motion sensors if you have security lighting. Outdoor lights can use more energy than all the lighting inside your home.
- In the bathroom, avoid using radiant heat lamps as lights, use them only to heat yourself when you step out of the shower.

Choose your lighting carefully

- Use compact fluorescent light (CFL) or Light Emitting Diode (LED) bulbs. While they may cost extra, CFL and LED light bulbs use less than one quarter of the energy of standard light bulbs and last 10 to 25 times longer.
- Minimise the use of halogen down lights. They use a lot of energy, create heat in summer and are very expensive to run. Consider CFL or LED down lights.
- Remove extra bulbs from a set of lights. This often makes no real difference to the quality of light but can save a lot of energy.
- Ensure that your new lights work with any dimmer switches you may have.

¹² Cost of electricity has been calculated using the 2017-18 ActewAGL energy rate of 21.76 cents per kWh (GST inclusive)



TOP TIPS ON LIGHTING

1. Open the curtains and blinds during the day.
2. Change to energy-efficient lighting.
3. Turn off and de-lamp.

SOME QUICK CHECKS YOU CAN CARRY OUT:

Do I have sets of lights where I could remove a bulb or two? _____

Does my household's security lighting have motion sensors? _____

Saving on pool and spa/hot tubs



With the cost of energy rapidly rising, keeping a pool or spa clean and warm can lead to very high electricity bills. However, armed with the right information, huge savings are available with the latest array of energy efficient products.

Swimming pools and spas can use a lot of energy. A swimming pool filtration pump will use around 3,000kWh of electricity per year if operated for eight hours per day, costing around \$770 per year excluding heating.¹³

Eco pumps – save up to 60%

Changing over to the latest ECO multi-speed pump will save hundreds of dollars per year. ECO pumps typically have three speeds, with the ability to adjust these speeds with a touch of a button. You can save up to 60% in running costs with this type of pump.

Running the pump for longer periods at low speed reduces power consumption. If the speed is reduced by 25%, the flow is reduced by 25%, but the power consumption drops by 60%. Even at 75% speed, an ECO pump can turn over 50,000L in four hours. An ECO pump can reduce the running cost from around \$770 per year to a little more than \$300 per year!

Off Peak Night – save up to 40%

Operating your pool pump and chlorinator after 10pm and before 7am on the Off Peak Night rate will reduce your running costs by up to 40% alone.

Optimise your filtration time

Pool companies often overstate the amount of time the filtration pump is required to run. They don't pay the electricity bills and they wish to ensure your pool doesn't turn green!

Contact several different pool companies to find one who is sympathetic to high electricity bills and have them advise on the minimum number of times you need to turn the volume of water over per day.

Pool heating

The cost of pool heating in a cold climate such as Canberra can far outweigh the filtering costs. Depending on how much heating you use, you could pay up to \$4,000 per year! However, options exist to help heat your pool efficiently and extend your swimming season while keeping costs at a minimum.

Option 1 – Free heat.

Solar pool heaters can raise the water temperature between 5 – 10°C, however, can be slow, depending on the size of the collector and the weather conditions.

Option 2 – Economical mechanical heating - solar pool heater with heat pump booster.

This is the most energy efficient active heating system currently available. Upfront costs are relatively high but operating costs are about 40% lower than using gas. The heat pump will return 3-4 kW of heating for every 1 kW of energy put in. Pool heat pumps do struggle when the temperature falls below 7°C so this is not an “all year round” option. Heaters should be operated during the day when the ambient air temperature is the highest.

Option 3 – All year round heating - solar pool heater with gas booster.

This is the most expensive form of heating. Upfront costs are lower than using a heat pump but operating costs are 30% higher. You can heat your pool all year round but this is not advised due to the extremely high costs.

¹³ 8 hours per day summer (6 months) and 6 hours per day winter (6 months) at \$0.2176 per kWh



Let a robot do the work and save

Automatic pool cleaners attached to your pool's filtration system put extra strain and load on a pool pump. More load leads to higher running costs and a shorter pump life. The latest electric robotic pool cleaners operate independently of the pool filtration system. They are a "plug & play" machine you simply drop into the pool which uses a transformer to lower the voltage to a safe level. Some models will climb and scrub the walls too.

Get a pool cover – save up to 50%

Highly recommended! A good quality pool cover is important as it can halve the cost of heating a pool. It will:

- Warm the water during the day and keep the heat in at night
- Keep the pool cleaner by keeping leaves out
- Extend the swimming season
- Reduce evaporation
- Reduce heating costs
- Save on chemicals

Operate your pool for free!

Electricity consumption for the filtration pump and heat pump heater can be offset further by installing solar panels, which will also add value to your home. Payback usually takes around five to seven years and after that the system will go on and save thousands of dollars over its life.

Outdoor spa/hot tub

The costs of running a hot tub or spa vary greatly with the size of the unit. There are ways in which you can keep the costs of running the system to a minimum that can be applied to spas and hot tubs of any size.

When purchasing, look for spas constructed from materials with high insulation properties such as high-density polyurethane foam. This material will maintain spa temperatures more efficiently than thinner materials. Only purchase the size that you will actually need – the larger the unit the larger the bills to heat and run it.

When installing an outdoor spa, locate it in a warm place to save on heating costs. A good quality cover with high insulation properties is important.

Avoid constantly heating your spa/hot tub. It will cost a lot to keep it at temperature and heating it for longer than needed will also increase costs. When initially heating your spa/hot tub, measure the temperature and come back an hour later and measure it again. This will give you an indication of how many degrees per hour your heater can deliver. Before using it next, measure your water temperature and then use this to calculate how long it will take to re-warm the water. If you use it daily it will only take a short amount of time to come back up to temperature but if you have not used it for a few days it will take longer.



TOP TIPS ON POOLS AND SPAS/HOT TUBS

1. Operate your pool pump and chlorinator at night to save on running costs
2. Invest in a good quality pool cover
3. When purchasing, look for spas constructed from materials with high insulation properties

SOME QUICK CHECKS YOU CAN CARRY OUT:

Do I have a pool cover? _____

Do I use an automatic pool cleaner to clean my pool? _____

Is my spa constantly heated? _____



My energy action plan



The following actions will reduce my energy consumption and save me money. I will be helping secure a better environment for future generations.

My/our overall energy goal is:

I/we want to achieve this goal because:

I/we will achieve this goal by taking the following actions:

Heating

When I will do it by

1.

2.

3.

Cooling

When I will do it by

1.

2.

3.

Hot water

When I will do it by

1.

2.

3.



Kitchen

When I will do it by

1. _____
2. _____
3. _____

Laundry

When I will do it by

1. _____
 2. _____
 3. _____
- _____

Appliances

When I will do it by

1. _____
2. _____
3. _____

Lighting

When I will do it by

1. _____
2. _____
3. _____

Put me in a prominent place, such as on the fridge, so I can remind you of your goals and actions.



Find out more

ACT Government

actsmart.act.gov.au

ActewAGL

actewagl.com.au

Canberra Environment Centre

canberraenvironment.org

Carbon offsets

carbonneutral.com.au/organisations/offsets

SEE-Change Canberra

see-change.org.au

Conservation Council ACT Region

conservationcouncil.org.au

Energy Efficiency Improvement Scheme

environment.act.gov.au

Green It Yourself

greenityyourself.com.au

'Green' renting

greenrenters.org

Green Power

greenpower.com.au

More ideas on saving water

savewater.com.au

Renewable energy and sustainable building

ata.org.au

Star ratings and energy efficiency

energyrating.gov.au

Sustainability information and research

mefl.com.au

Technical information on home design

yourhome.gov.au

Understand your bills

energymadeeasy.gov.au

Your Energy Savings

yourenergysavings.gov.au

The ACT climate change strategy and action plan – AP2

The ACT has Australia's most ambitious emissions reduction targets. The ACT climate change strategy, AP2, sets out a pathway for the Territory to meet our 2020 targets and puts us on the path to becoming a carbon neutral community. Read the strategy in full at environment.act.gov.au

Accessibility

The ACT Government is committed to making its information as accessible as possible.

If you have difficulty reading a standard printed document and would like to receive this publication in an alternative format, such as large print, please phone Access Canberra on 13 22 81 or email the Environment, Planning and Sustainable Development Directorate at epsddcomms@act.gov.au

If English is not your first language and you require a translating and interpreting service, please phone 13 14 50.

For 'speak and listen' users, please phone 1300 555 727 and ask for Access Canberra on 13 22 81. For more information on these services, visit relayservice.gov.au

Disclaimer

This guide has been prepared in good faith exercising due care and attention. It is to help you make simple changes that will reduce your energy use and improve the comfort of your home.

This material is general in nature. It is made available on the understanding that the Australian Capital Territory (the Territory) is not thereby engaged in rendering professional advice.

Users of this guide should satisfy themselves concerning its application to, and where necessary, 'seek expert advice' relevant to their particular circumstances.

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energy.water.

make (the) change

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visit actsmart.act.gov.au call 13 22 81 email actsmart@act.gov.au