Manage your household budget while saving energy and the environment.

Energy in action®

AGL

AGL Smarter Living Guide.

AGL is here to help you every step of the way.

As one of Australia's largest renewable energy companies and a leading provider of energy efficient products and services, AGL knows a fair bit about the smart use of energy.

The good news is being energy efficient at home doesn't have to mean 'going without'. With a little effort, saving energy, the environment and managing your budget is simple. And AGL is here to help make it easier for you.

In this guide you'll find useful information and answers to common questions. How is energy used in your home? What are the top energy wasting appliances? What could help you save money on your energy usage? So take a look through the following pages and join us on the path to Smarter Living.

What you'll find in this guide.

How is energy used in your home?

Understanding home energy usage.

When you put together a household financial budget, the first thing you do is work out what you spend your money on and where you can save money without impacting on your lifestyle. A good financial budget focuses on not wasting money and getting the most for the money you do spend. Establishing an energy action plan is much the same.

The first thing you need to do is work out where you use energy within your home and what you can do to reduce the amount of energy you use. An energy action plan will help to reduce the amount of energy you waste, which could save you money on your energy usage. The other benefit is that the more energy you save, the better it is for our planet. A good starting point is work out where you use the most energy.

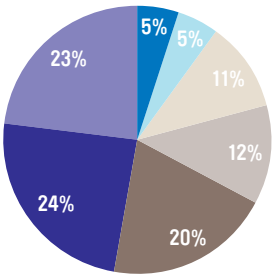
Where do you use energy at home?

The chart below shows you the breakdown of energy use in an average Australian home. Most energy is used in space heating and cooling and to heat water. Appliances and refrigeration are the other major energy use areas in the average Australian home.

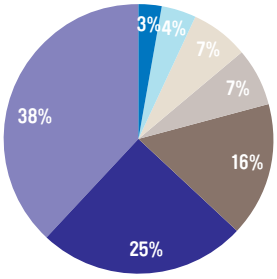
The other piece of information you need to begin to formulate an energy action plan is information about your energy charges. Some homes have an off-peak tariff where they pay lower energy usage charges for energy used overnight. If you have an off-peak tariff, using appliances (like washing machines, dryers and dishwashers) overnight should be part of your plan. It won't reduce your energy usage altogether, but it could reduce the energy usage charges on your bill as you pay less for the energy you use overnight. To see whether you have an off-peak tariff, check the back of your electricity bill under the 'usage' section.

Energy use in an average Australian home*.

Greenhouse gas emissions from home energy use



Home energy use



Cooking · Standby · Lighting · Refrigeration · Heating and cooling · Other appliances · Water heating

*Average energy uses may vary from state to state.

Source: Baseline Energy Estimates, 2008

Understanding your energy bills.

Electricity is measured in a unit of power called a watt. 1000 watts is equivalent to 1 kilowatt (kW). Electrical appliances are rated in watts (W) or kilowatts (kW).

Kilowatt hours (kWh) show how many kilowatts an appliance uses each hour.

Therefore, a 100W bulb burning for 10 hours would use 1kWh of energy. Or a portable heater rated at 1kW running for 5 hours would use 5kWh of energy. Your bill is based on how many kilowatt hours (kWh) you use.

Armed with this information we can start to formulate an energy action plan that could help save you money on your energy bill and benefit the environment.

What are the big energy wasters?

Heating and Cooling.

Most homes use a third to half of their energy for heating and cooling.

In general:

> Gas heating appliances are cheaper to run than electrical ones.

> Heating one or two rooms with a space heater is more economical than heating a whole house.

> Insulation and draught stopping are essential to ensure you maximise the benefits of the heating and cooling options you choose.

> Evaporative cooling costs less to run than refrigerative.

> Fans are a great option for personal cooling and are cheap to run.

Water Heating.

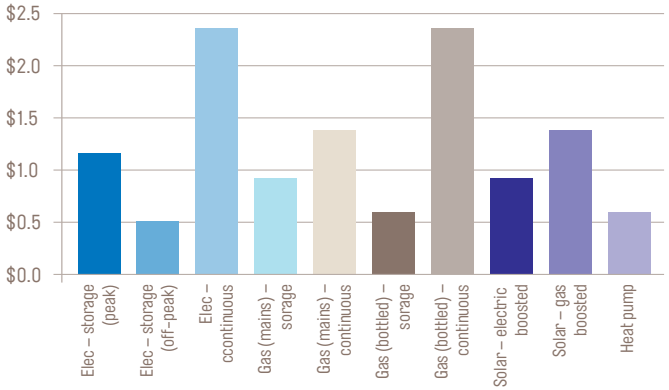
Heating water is another major energy user in your home. The type of system you have can significantly affect how much you pay in energy charges to heat water. Regardless of what system you have there are things you can do to minimise this cost:

> Where practical, install a low flow showerhead. The less water you heat, the less energy you use.

> Wash clothes in cold water. It gets the clothes clean and could help you to save on your energy usage.

> Reduce shower times to reduce how much hot water you use.

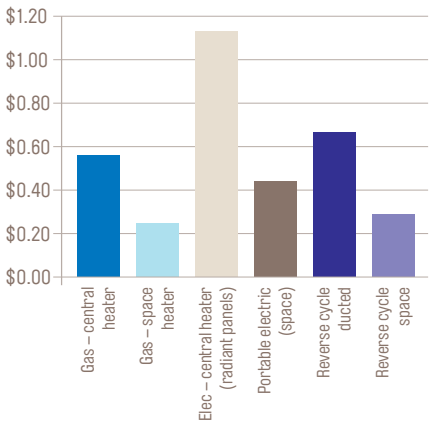
How much are you paying per day for hot water?



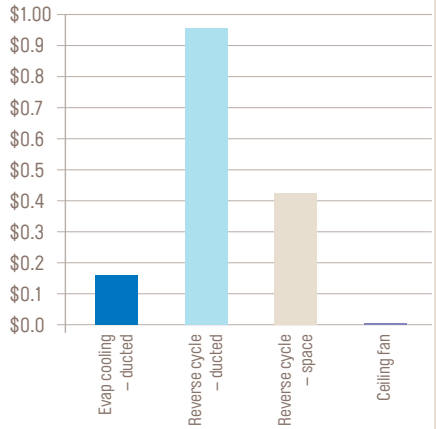
All calculations derived by Moreland Energy Foundation Limited using Government data and FirstRate5.

How much are you paying to stay warm or cool?

Per hour cost of heating options.



Per hour cost of cooling options.



Source: energyrating.gov.au

Standby power and wasted energy.

Reducing standby power is one of the simplest ways to reduce wasted energy. Standby power is like a dripping tap of energy. Take a walk through your house at night with the lights off and see all the appliances that have lights on. We wouldn't let a tap drip all night but we let these appliances use energy all night and day when we aren't using them.

The table below shows the average standby power needs for different appliances in watts. These needs seem insignificant until you work out that these appliances could be on 24 hours a day, 365 days a year. So multiply the figure by 8760 to get the yearly energy use.

For example, that old cathode ray tube (CRT) television in the back room uses 3.1 watts an hour on standby mode; if we multiply 3.1 by 8760 we get 27 kilowatt hours of use per year. That's probably as much energy as your whole house uses in two full days, and the TV isn't even on.

How much are you wasting on standby?

Average standby in watts.

Air conditioner	2.6
TV – CRT	3.1
TV – LCD, Plasma	0.4 – 3.1
DVD Player / Recorder	1.2 – 2.6
Set top box	6.4
Home entertainment other	1
Gas water heaters	4.9
Heater – electric portable	0.9
Heater – gas	3.1
Microwave	2.4
Wireless modems	7 – 10

Source: Intrusive Residential Standby Survey Report 2005

Other energy wasters.

You also need to be aware of the little energy wasters in your home. An electric blow heater is small in size but big on energy use. Many of these units use over two kilowatts of energy, which means they are very costly to run.

A normal electric tumble dryer will use around 2.3 kWh per load. Compare this to the sun which dries your clothes for free and which is a great way to kill bacteria.

Halogen down lights use up to 50W per light globe – and the transformer fitted to each downlight in your ceiling uses an additional 10W. Apart from using a lot of energy, halogen down lights also generate unwanted heat.

What do appliances cost to run per year?

Cooling.	Annual Cost*
Evaporative cooler – ducted	$20 – $45
Reverse cycle cooler – ducted	$75 – $120
Reverse cycle cooler – space	$30 – $55
Fan	$8 – $15

Heating.	Annual Cost*
Central heater – gas	$80 – $871
Space heater – gas	$50 – $432
Radiant panel heater	$160 – $1786
Portable electric heater	$100 – $986
Hydronic heating	$80 – $718
Reverse cycle – ducted	$80 – $788
Reverse cycle – space	$50 – $336

* Lower numbers reflect costs in a warmer climate and higher numbers reflect costs in a cooler climate.

Kitchen.	Annual Cost*
Oven	$55
Cooktop	$45
Fridge#	$70 – $150
Freezer+	$60 – $100
Microwave (1350W)	$33
Toaster (1000W)	$13
Electric kettle (1200W)	$117

Single door 370 lt – double door side-by side 541 lt.
+ 220 litre single door upright – 220 litre chest.

Living Room.	Annual Cost*
TV – LCD (42")	$93
TV – Plasma (42")	$211
TV – CRT (29")	$78 – $100
DVD player	$19 – $78
Digital Set Top Box	$58

Bathroom.	Annual Cost*
Hot water heater – electric	$680 – $881
Hot water heater – gas	$240– $414
Hot water heater – solar / heat pump	$115 – $276
Fan	$8 – $15
Hair dryer	$14
Electric toothbrush	$2

Lighting.	Annual Cost*
Incandescent (60W-100W)	$8 – $14
CFL (13W-20W)	$2 – $3
Fluorescent tube (T5/T8)	$4 – $6
Halogen downlights (20W-50W)	$3 – $8
LED downlights (10 W)	$2
CFL downlights (15 W)	$2

Laundry.	Annual Cost*
Washing Machine (front loader) – hot wash	$106
Washing Machine (front loader) – cold wash	$27
Clothes dryer (2400 W)	$116
Line drying	$0

Outdoors.	Annual Cost*
Pool filters	$380
Outdoor patio heater - gas (radiant conventional patio heater)	$300 - $1300
Barbecue – gas (reticulated – portable)	$40 - $122

* All calculations derived by Moreland Energy Foundation Limited using Government data and FirstRate5.

How to stop wasting and start saving energy.

Saving energy around the house is not about "doing without". It's about using energy efficiently and maximising the benefit of the energy you do use.

Following some simple tips and changing behaviours can reduce your energy use dramatically.

Heating tips.

> Open curtains and blinds on the north, east and west sides of your home in the morning to allow the winter sun to naturally heat your home.

> If you need to have a heater on, set the thermostat to 20 degrees. Every degree above this could add 10% to the heating energy usage charges on your bill.

> Put on a jumper before you put on the heater.

> Close curtains and blinds at night to keep warmth in the room.

> Use draught sealing on windows and doors to maximise the benefit of heating.

> If you have ducted heating, zone your home by closing vents in unused rooms.

> Close doors to unoccupied rooms to maintain the temperature in the areas you are using.

Appliances.

> Set the fridge and freezer thermostat to the recommended temperature. 4°C for the fridge and -18°C for the freezer.

> Check the seals on the fridge by putting a piece of paper in the door. If it slips or blows in the draught, the seals need attention.

> Keep the lids on pots while cooking. They will boil faster and use less energy.

> Set all electrical appliances to power save mode.

> Avoid using the clothes dryer. If you can't dry clothes on a clothes line use a clothes airer.

> When not in use, turn off appliances at the switch to reduce their standby power usage.

> When purchasing an appliance, buy the most energy efficient unit you can afford. It pays off in the long run.

Windows.

> Heavy curtains protect you from the outside temperature better than blinds.

> Pelmets on windows help to reduce heat loss and gain.

> If you're building a house, consider double glazed windows. It's a lot cheaper to do it now than to retrofit them later.

Garden.

> If you want to light up the garden, use solar lighting. It costs nothing to run and most modern solar lights have built in sensors, so you don't have to remember to switch them on.

Cooling.

> Draw the blinds and curtains early in the day to block out heat.

> Use ceiling fans or portable fans to circulate air. This may be enough to keep you cool rather than using the air conditioner.

> Set the thermostat of your air conditioner to 26 degrees. Every degree below 26 could add 10% to the cooling energy usage charges on your bill.

> Open the windows at night when the outside temperature cools down. This allows any built up heat to dissipate.

Water.

> Install an energy efficient shower head. By saving water it reduces the energy used to heat the water for your shower.

> In the laundry, wait for a full load before washing in cold water.

Lighting.

> Halogen downlights are energy inefficient to use. Limit their use or replace them.

> Replace all incandescent bulbs with compact fluorescent light globes (CFLs).

> Put sensors on external spotlights to ensure the lights only operate when you need them.

> When possible open the curtains and use the sun to light your home.

Don’t lose it, insulate it.

Most households use a large proportion of energy on heating and cooling, but around 30% of that heat is lost through your ceiling and another 10% to 20% through your walls, unless they are well insulated. A well insulated house will be cooler in summer and warmer in winter and may be less expensive to run in terms of energy usage charges all year around.

How does insulation work?

Insulation slows down the transfer of heat from inside your house to outside and vice versa. It does this by trapping air (when using bulk insulation like batts) or reflecting heat energy (for example using foil insulation). This will reduce your need to use heaters and air conditioners as well as shorten the time when in use but with greater effect.

It’s not just about insulation.

Draught sealing is as important as insulation. Too much air coming in or out of your home will render your insulation a lot less effective in maintaining temperature. The most common form of air leaks are around doors and windows.

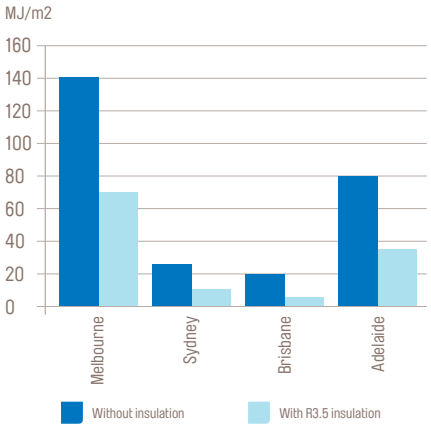
Door snakes and weather stripping (rubber strips that fit on the inside of door and window frames) are easy to install and can make your home a lot more comfortable, energy efficient and may be cheaper to run.

Safety tip.

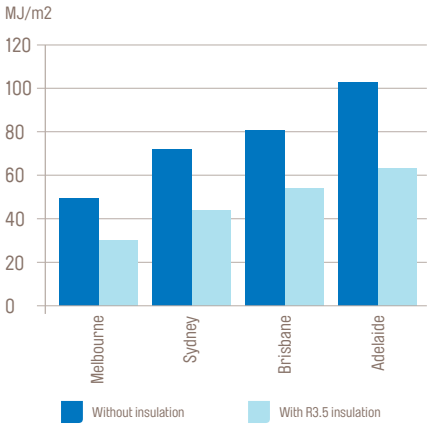
Remember, if you have halogen down lights you will need to ensure there is a clearance between the insulation and the light to avoid the risk of fire. This will, however, significantly reduce the effectiveness of your ceiling insulation.

How much energy are you using to stay warm or cool?

Heating benefits of insulation by capital city.



Cooling benefits of insulation by state.



All calculations derived by Moreland Energy Foundation Limited using Government data and FirstRate5.

Smart tips for renters.

Renting may limit the energy efficiency action you can take in your home. But there are still things you can do. The most important action you can take is to consult with your landlord (or their agent). This might just make it easier to make any changes which require your landlord's approval.

There are also many things that you can do without having to consult with your landlord, which can result in savings on your energy usage.

Kitchen.

> Keep the fridge in a cool place so it doesn't need to work as hard to keep cool.

> Try putting a piece of paper between the fridge and the fridge door. If it stays there your fridge door seals are working well. If it slides down you need to replace them. New seals should cost roughly $40-$55, and you can replace them yourself. If your landlord owns the fridge, you should ask them to replace the seals. Do the same with the oven.

> If you decide to buy a new fridge, try to get one with a high star rating for efficiency, and one that's the right size for your needs (bigger fridges tend to use more energy).

> Check the temperature. The optimum for the fridge is 4°C and -18°C for the freezer.

> Fridges and freezers use a lot of energy. If you can live without a second fridge or freezer, switch it off and take steps to reduce your energy usage.

> By putting lids on your saucepans when cooking, you'll cook faster and with less heat.

> A microwave is more energy efficient than an oven, a kettle is more efficient than a pan on the stove, and a toaster is more efficient than a grill.

> If you only want a cup of tea, don't fill the whole kettle.

> Install flow restrictors on your kitchen taps (they come in varying flow rates so check the packet) and reduce water flow down from typically 15-18 litres per minute to 9 litres per minute or less. This is enough for most household uses.

> Run appliances at off-peak times if possible.

> Turn off all appliances at the switch when not in use.

Heating and Cooling.

> Close doors so you're only heating or cooling the space you're in, instead of the whole house.

> Don't leave your heater/cooler running overnight or while you're out. If you're really worried about those cold mornings, you could get one with a timer.

Central heating.

> Set your heating to 20°C.

> Try shutting the vents to the rooms you're not using.

> It's also worth putting deflectors on vents near windows, so the heat goes into the centre of the room and not out the window.

Electric heaters.

> Use thermostats and timers.

> Use only to heat small areas for short periods.

> Bar heaters and radiators are not good for heating space. Use these for sitting at a desk studying.

Cooling.

> Use portable fans instead of air conditioners. They are effective and inexpensive.

> Drape a wet sheet over an open doorway. It's nature's air conditioner.

> Set the thermostat on your cooling to 26°C.

Smart tips for renters.

Laundry.

> Use the washing machine's eco load feature if there is one.

> Try to only use the washing machine or dryer when you have a full load.

> Wash in cold water – it makes a big difference.

> Dry your clothes on the outside line or indoors on a clothes airer.

> If you're buying a new washing machine, try buying one that has a high efficiency rating for water and energy use.

Lighting.

> Use efficient lights like compact fluorescent bulbs.

> Turn off lights when you're not in the room (even fluorescents and low energy lights).

> Use natural light wherever possible (e.g. open curtains in the morning instead of turning on the light).

> Try using timers to control any outdoor and security lighting. Also ensure that outdoor lights are switched off during the day.

> Remember light-coloured surfaces reflect light and will help light the room.

> Use appropriate light levels – don't over light a room.

> Use lamps if you do not need a lot of light.

Bathroom.

> Replace your showerhead with a low energy unit.

> If you think your landlord won't give you permission and won't want you to exchange the existing showerhead, go for a flow restrictor instead. You can install them yourself, and they do the same thing as a water saving showerhead.

> Reduce the time you spend in the shower.

Green tip.

> Sign up to GreenPower. It's a simple way to help reduce your environmental impact.

Computers.

> Put your computer to sleep when you won't be using it for short periods of time. You can change its settings so this happens automatically.

> Screensavers don't save energy. Turn off your screen if you won't be using it for a short period of time and don't want to put it to sleep.

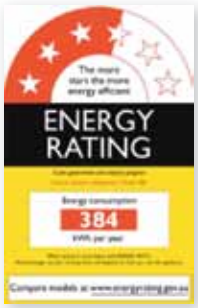
> When you won't be using your computer for longer periods, shut it down and turn it off at the wall.

Compare the efficiency of appliances.

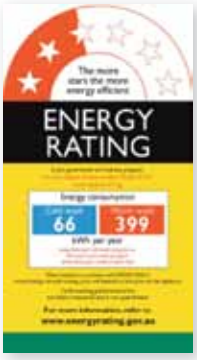
One of the simplest ways to reduce the amount of energy your appliances use is to purchase energy efficient appliances. The simplest way to identify energy efficient appliances is to look for the Energy Star Rating Label.

What is an energy star rating?

Energy rating labels allow you to compare the energy efficiency of different models of similar appliances – the more stars the more energy efficient an appliance is. It also provides you with the energy consumption of the product per year based on average use. The lower the number, the more efficient the appliance is, which could be good for your pocket and the planet.



In some cases the energy rating can give two figures for energy usage based on the different ways the product can be used. In the case of washing machines, it compares energy used when washing using cold water against washing using hot water by the same product.

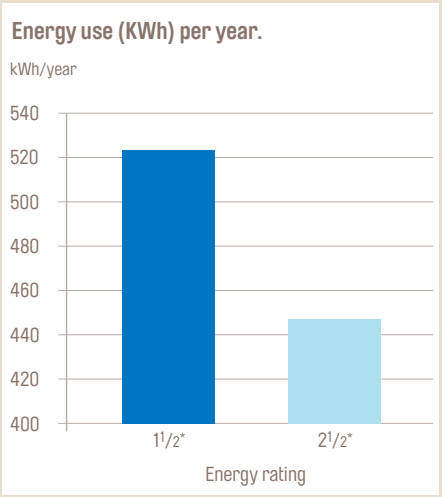


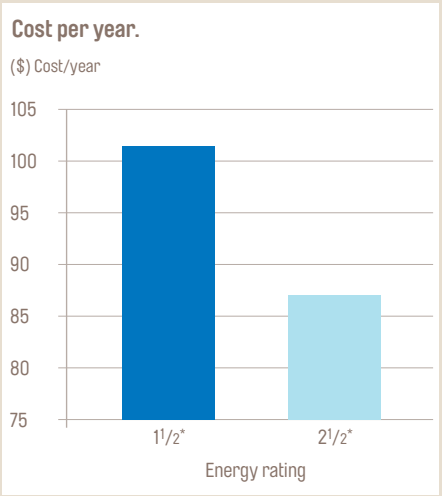
How does it work?

All states and territories have the same requirements for testing. Appliances are submitted for testing to an Australian Standard that determines their energy efficiency and yearly kilowatt hour usage. All energy labels are approved by a regulatory authority.

The appliances can then be compared to each other to allow you to determine its energy use as part of the decision making process when buying a new appliance.

Compare energy use and cost of appliances per year.





* All calculations derived by Moreland Energy Foundation Limited using Government data and FirstRate5.

Where to find out more.

If you'd like to know more about any of the information provided in this Guide, here are some useful websites you may want to explore.

More tips and energy saving tools	**www.agl.com.au**
Sustainability information and research	**www.mefl.com.au**
Star ratings and energy efficiency	**www.energyrating.gov.au**
Renewable energy and sustainable building	**www.ata.org.au**
"Green" renting	**www.greenrenters.org**
More ideas on saving water	**www.savewater.com.au**
Smart home design	**www.sustainability.vic.gov.au**
Insulation	**www.insulationvictoria.com.au**
Technical information on home design	**www.yourhome.gov.au**
Carbon offsets	**www.carbonoffsetwatch.org.au**
GreenPower	**www.greenpower.com.au**

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