

be energy smart

Home energy worksheet

This worksheet can help you reduce your energy costs at home.



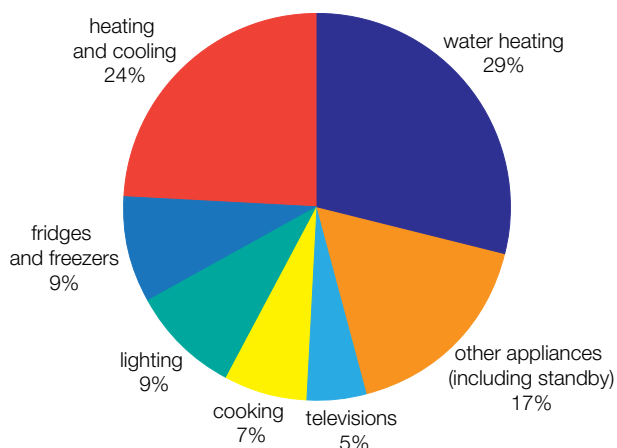
Government of South Australia

Department for Transport,
Energy and Infrastructure

Reduce your **energy** costs at home

This worksheet will help you find practical ways to save energy at home.

By comparing your current practices with energy efficient ways, you will be able to identify the steps you can take to becoming an energy star. For a typical household this could mean reducing energy bills by hundreds of dollars every year.



Where do I use energy in my home?

The graph above shows a breakdown of energy use for a typical South Australian home. Of course all homes and people are different, so please use these figures as a guide only.

The benefits of saving energy

An energy efficient home incorporates common sense design principles, selection of the most appropriate fuel sources and energy efficient appliances and technology. This results in:

- a reduced need for expensive heating and cooling appliances
- reduced appliance running costs, and therefore energy bills
- reduced greenhouse gas emissions.

How to reduce your impact on climate change

Every time you turn on a household appliance, greenhouse emissions are released into the atmosphere.

If you think of one balloon representing 50 grams of greenhouse gas, the average household produces around 160,000 balloons of greenhouse gas each year.

But you can do something about it.

By using less energy or using green energy you can reduce your greenhouse gas emissions, and in turn, your impact on climate change.

Reduce
your
impact on
climate
change.

For further energy advice:



www.dtei.sa.gov.au/energy



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How to complete the worksheet

(Allow around an hour)

1 How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	2 energy efficient	
What types of lights do you have?	Incandescent or halogen lights	Some fluorescents	Mainly fluorescents	Fluorescent lights use much less energy and are cheaper to run than incandescent globes or halogen "down lights". Compact fluorescents can replace incandescent globes that are not on dimmer circuits - especially those used for a few hours per day. 4
Do you regularly turn off lights?	Lights left on all the time	Lights turned off occasionally	Lights turned off when no one in the room/area	It's ok to turn fluorescent lights off when you leave the room - even for only a few minutes (it's an old myth that this is a waste of energy). Motion sensors can be used to automatically control outside lights.
Your total	0	1/2	1	= 1 1/2 / 2 stars 5

Example of how to complete your worksheet.

1 Work your way through each of the tables in this guide (A to J).

2 Ask yourself each of the 'How do you use energy?' questions. Then circle the response that best matches your current energy use practices.

3 Each response has a star rating. Note the number of stars that corresponds to your answer.

4 Where you scored less than the maximum number of stars, read through the 'energy star actions' to identify the actions you can take.

5 Tally up your results for this table. How do you compare?

6 When you've completed all the tables, use the Energy Star Summary table to summarise your energy star actions. Specify a date when you'll do each of these - and try to stick to this.

2 Measuring shower head and tap flow rates

To measure shower and tap flow rates, turn the hot water tap on full and let it flow into a bucket for 10 seconds. Measure the amount of water in litres. Multiply by six for the flow rate in litres per minute. Take care to avoid spilling the hot water.

3 Measuring fridge and freezer temperatures

To measure the temperature inside your fridge or freezer, place a thermometer to the back and bottom of the fridge or freezer and leave it for several minutes.

4 Checking for draughts

Sources of draughts can be observed by either looking for daylight around the edges of doors and windows, looking for gaps around skirting boards; feeling draughts on a wet finger, or using a lit incense stick to observe the flow of air (where there is a draught the smoke will jiggle around, rather than rising vertically).

5 Measuring living area temperatures

Living room temperatures can be measured with a thermometer near where people tend to be in the room or by the thermostat setting on the heater or cooler. Note: there may be a few degrees difference between the thermostat setting and the room temperature.

What else do I need to know?

1 Checking your hot water temperature

If you don't know your water heater's thermostat setting, measure the delivered water temperature by placing a thermometer under a running hot water tap that is closest to the water heater. Delivered water temperature may be a few degrees lower than tank temperature.

A. Water Heating and B. Shower, Baths and Taps

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
What type of water heater do you have?	Electric storage	Gas ★	Solar, 5-star gas or electric heat pump ★★★★★	3-4 tonnes of greenhouse gases are produced per year to power an electric water heater. If you need a new water heater, the most environmentally friendly options are solar, 5-star gas or heat pumps.
Check your hot water heater temperature ¹	65°C or more	62°C ★	60°C ★★	Australian standards require storage water heaters to be set at no less than 60°C. Instantaneous gas water heaters can be set to lower temperatures. Internal thermostats require adjustment by a qualified tradesperson.
What is your shower's hot water flow rate ² ?	15 litres per minute or more	12 litres per minute ★	9 litres per minute or less ★★	3-star rated showerheads give a great shower with less water. They are most suited to mains pressure gas and electric storage heaters. 3-star rated tap aerators can also be used to reduce flow rates in taps.
How do you shower and bathe?	Long showers and deep baths	Showers only or shallow bath ★	Short showers (3 min or less) ★★	A bath can use over 100 litres of water. A short shower can use less than 30 litres.
Is there lagging (insulation) on your water heater pipes?	None	Some ★	Lagging on cold and hot pipes ★	Insulating exposed copper pipes with rubber tubing (known as lagging) reduces conducted heat loss from storage water heaters. Hot and cold water pipes should be lagged, at least for the first metre from the tank. Lagging is available from hardware and plumbing stores.
Your total	0			= /11 stars

C. Clothes Washing and Drying

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
What water temperature do you use for clothes washing?	Always hot or warm	Sometimes warm ★	Always cold ★★	Most of the energy used for clothes washing goes into heating the water. If you need a new clothes washer, check the energy star ratings. The more stars the better.
How do you dry clothes?	Always use the dryer	Sometimes use the dryer ★	Always dry on the line/ clothes airer ★★	Use the dryer less. If you do need to use it, spin dry your clothes well before using the dryer. New dryers also have energy star ratings.
Your total	0			= /4 stars

D. Fridges and Freezers

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
Do you have a second fridge or freezer?	Always running	Only on when needed ★★	No second fridge or freezer ★★★★★	A second fridge or freezer can cost over \$100/year to run. Do you really need it? If so, only run it when necessary - such as for parties. New fridges can cost much less to run than older ones. Check the energy star ratings - the more stars the better.
Where are your fridge(s) and freezer(s) located?	In a hot spot	A sometimes warm spot ★	In a cool spot ★★	Locate fridges and freezers in cool spots away from direct sun and other heat sources such as ovens.
Check your fridge and freezer temperature ³	Running at less than 3°C	Frosts up occasionally ★	Fridge does not frost up ★	The recommended operating temperature for a fridge is 3 to 5°C. Below this costs more to run and can frost up. For freezers, the recommended range is -15 to -18°C. Regularly remove any frost buildup.
Are your fridge and freezer well ventilated?	No air gaps on sides and top	Some air gaps ★	Plenty of space around fridge ★	Fridges and freezers need gaps to the top, back and sides to shed excess heat. For appliances with exposed back coils, vacuum or wipe off dust. Also ensure doors seal well.
Your total	0			= /7 stars

E. Insulation, F. Shading and G. Draught Proofing

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
Is your home insulated?	No	Ceiling ★★	Ceiling and walls ★★★★	Insulation is measured by its thermal resistance. Contact the Energy Division's Advisory Service (see details on the back page) for the appropriate insulation R-value for your area.
Do you have shading on north facing windows?	None	Some ★	Shade summer sun only ★★	Well-designed eaves shade summer sun while allowing winter sun in. Alternatively an external blind, pergola or deciduous vine can be used.
Do you shade on east and west windows?	None	Some ★	Well shaded in summer ★★	It is important to externally shade east and west windows in summer. Blinds, verandas or trees can be used.
Do you have curtains and pelmets over living room windows?	None	Good curtains ★	Good curtains and pelmets ★★★	Heavy lined curtains and pelmets help keep heat in during winter and out on hot summer days. Pelmets (covers over the top of curtains) are important to stop draughts caused by airflow between curtains and windows.
Are there draughts from external doors, windows etc? ⁴	Large gaps	Some gaps ★	No gaps ★★★	Use special door and window seals, gap filler or draught excluders to block draughts. Seal any gaps around skirting boards, ceilings and old air vents. Check that chimney flues and extraction fans can be sealed when not in use. Note: by law, rooms with unflued gas heaters must have adequate ventilation.
Your total	0			= /10 stars

H. Heating and Cooling

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
How much of your home do you heat and cool?	Whole house	All living spaces ★	Only rooms that people are in ★★	Only heat or cool the rooms you are currently using. Close doors between these rooms and the rest of the house. If heating is required at night (eg for medical reasons) only heat bedrooms.
What do you use for heating?	Ducted whole of house or many electric heaters	Single room heater ★	Warm clothes and occasional heater ★★★	Ducted air conditioning can be very expensive to run. A bar radiator or fan heater can use as much energy as a single room reverse cycle air conditioner or single room gas heater. Wearing warm clothes and only heating when needed can significantly reduce heating costs.
What do you use for cooling?	Ducted whole of house	Single room air conditioner ★	Ceiling fans and night breezes ★★	Ceiling fans can significantly improve comfort and also work well with air conditioners. Reversible ceiling fans also offer winter benefits. Where possible open doors and windows on summer evenings to let in cool breezes. Evaporative coolers cost less to run than refrigerative air conditioners.
What is your living room temperature in winter ⁵ ?	24°C or more	22°C ★	20°C or less ★	Lowering the thermostat of heaters by one degree can reduce energy use by 10 per cent.
What is your living room temperature in summer ⁵ ?	21°C or less	23°C ★	25°C or more ★	Raising the thermostat of cooling systems by one degree can reduce energy use by 10 per cent.
Your total	0			= /7 stars

Energy and your well being

Using energy to heat and cool our homes can be very important – especially for the elderly, families with young children and people with illnesses. Please ensure your efforts to use energy wisely do not compromise your health and safety.

WARNING

Please take care to avoid injury or damage. In particular:

- Take extreme care when handling hot water and water heater pipes as they can burn.
- Take care when lighting and using incense sticks to avoid fire, burns or damage to property.
- Take care near any electrical or gas appliance.

I. Lighting

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
What types of lights do you have?	Incandescent or halogen lights	Some fluorescents ★	Mainly fluorescents ★	Fluorescent lights use much less energy and are cheaper to run than incandescent globes or halogen "down lights". Compact fluorescents can replace incandescent globes that are not on dimmer circuits - especially those used for a few hours per day.
Do you regularly turn off lights?	Lights left on all the time	Lights turned off occasionally ★	Lights turned off when no one in the room/area ★	It's ok to turn fluorescent lights off when you leave the room - even for only a few minutes (it's an old myth that this is a waste of energy). Motion sensors can be used to automatically control outside lights.
Your total	0			= /2 stars

J. Standby, Cooking and Other

How do you use energy?	Your energy use is closest to...			Energy Star Action
	high energy use	moderate energy use	energy efficient	
Do you have a pool?	Heated and filter always runs	Solar or no heating, filter runs for less than 6 hours a day and regularly cleaned ★	No pool ★★★★	A pool pump running 6 hours a day can cost \$300-\$500 a year. A gas pool heater can cost \$600-\$800 a year. Consider a solar pool heater and blanket. Keep intake grates clean and backwash filter when necessary. Saltwater chlorinators can double the energy use of a pump.
Do you heat your beds?	Waterbed	Electric blanket used just before bed time ★	No heating ★★★	Waterbeds can be very costly to run. Making the bed each day reduces heat loss. If you need an electric blanket, turn it on just before going to bed and off once you're in bed.
What are your main forms of cooking?	Electric stove and oven	Occasional microwave ★	Microwave and/or gas cooker ★	The most environmentally friendly cooking options are microwaves or gas cookers. Ensure seals on ovens work well. Place lids on saucepans.
How do you turn off your appliances?	Turn on and off with remote control	Turn off at the wall sometimes ★	Turn off at the wall most of the time ★	Appliances with remote controls or "soft switches" such as TVs, stereos, computers, microwaves and some washing machines can consume considerable energy when in "standby" mode. Turn these off at the wall (either manually or with a timer) when not in use.
How do you turn your computer and computer screen off?	Left on for long periods	Use Energy Star sleep features ★	Monitor and PC turned off, or don't have a computer ★	Most modern computers can be set to enter "sleep" mode when not used for a certain period (such as 15 minutes). Turning the computer monitor off (using its button) when away for even a short time, can reduce energy use by half.
Your total	0			= /7 stars

Energy Star Summary

How you use energy		Your score	What you can do	By when	Tick when done
AB	Water heating, shower, baths and taps	/11			
C	Clothes washing and drying	/4			
D	Fridges and freezers	/7			
EFG	Insulation, shading and draught proofing	/10			
H	Heating and cooling systems	/7			
I	Lighting	/2			
J	Standby, cooking and other	/7			