

Your DIY home energy checklist.

Assessing your 'building envelope' (the structure and everything outside your home).

Your 'building envelope' covers the structural elements and everything on the outside of your home that can affect energy consumption on the inside. Running through this checklist could give you some ideas of how you can save energy in your home.

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Window check



They connect your home to the outside. And the type and quality of your windows can influence energy consumption inside your home.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	<p>The glass on your windows – Do they have a tint or coating? Is there a thin film installed over the glass? If not you could look into the glazing and insulating film options that are available. A window company may be able to provide a free quote to help you assess this option for your home.</p>	<p>An investment in window glazing could save you money. Why? High quality glass and glazing restricts the temperature outside your home getting in and vice versa, reducing the energy you use inside your home on heating and cooling.</p>
<input type="checkbox"/>	<p>Your window frames – What type of material are they made out of? Different frames have different insulation properties. A window company may be able to provide a quote and advice on new frames to suit your home and energy needs.</p>	<p>Having the right frames for your climate can help you reduce the energy used on appliances that control your inside temperature, such as heaters and air conditioners. Materials that conduct less heat, like timber, suit warmer climates[^]. Materials that conduct more heat, like aluminium, suit cooler climates[^].</p>
<input type="checkbox"/>	<p>The colour of your blinds – Are your blinds white or near white? Do they have a reflective surface on the outside? If not you could be letting excess solar heat into your home.</p>	<p>Lighter colours can reflect solar heat, whereas darker colours attract it. Consider changing your blinds to a different colour with a reflective surface on the back, which could help reduce the energy you use to cool your home.</p>
<input type="checkbox"/>	<p>The pelmet above your blinds – Check for gaps or excess space in and around your blinds and pelmet (the fixture that covers where your blinds are connected).</p>	<p>Fit your blinds and pelmet tightly so there's no room for air to be trapped. This helps reduce any build-up of hot and cold air pockets around your blinds, meaning potentially less energy is used levelling out your home's temperature.</p>
<input type="checkbox"/>	<p>Your curtains and drapes – How thick are the curtains or drapes around your windows? Is there more than one layer of fabric?</p>	<p>Heavy fabrics or layers of curtain can increase insulation in your home, and therefore reduce heat loss. This means your heater doesn't have to work as hard making up for this loss of heat.</p>
<input type="checkbox"/>	<p>Your windows ventilation – Do you have a ventilation opening on your window to allow heat to escape? If not you could be adding to your reliance on air conditioning.</p>	<p>Heat gets trapped between your window and blinds, increasing your home's inside temperature. A ventilation opening allows this heat to escape, so your air conditioner doesn't have to work as hard to cool this air.</p>

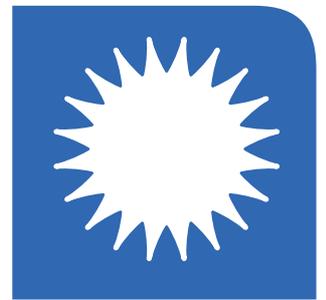
The little changes count when it comes to energy efficiency

Here are two energy efficiency facts you might not know about your windows and furnishings.

- 1. Did you know?** If you can't get your windows re-glazed, window films are a cost effective-option. They could decrease your home's temperature meaning less energy is required to cool your home.
- 2. Did you know?** As well as cutting the cost of your energy bill, an investment in window re-glazing could add to your home's value.

[^]SOURCE: www.yourhome.gov.au

Shading check



The shading around the outside of your home, whether it's natural (plants) or manmade (coverings and other external fixtures), can reduce the amount of heat that enters your home. This reduces your inside temperature so you may require less cooling.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	The colour of your external shading – Is it light in colour? Is the outside of the shading reflective? If not, you could be letting excess heat into your home.	Light colours reflect solar heat better than darker colours [^] . Your shading will more effectively stop heat entering your home if it's reflective.
<input type="checkbox"/>	The positioning of your external shading – Make a list of all the external shading positioned around your home. What direction do your shading structures face? How big are they? You might like to contact a builder or carpenter to find out if your set-up is the best for your home.	A builder or carpenter can evaluate whether your set-up matches the level of sun you receive. They will then be able to advise you of changes you can make (like installing horizontal shading on any north-facing openings) that may help you save energy.
<input type="checkbox"/>	The types of plants that shade your home – Make a list of the plants that shade your home, and find out if they're evergreen (foliage all year round) or deciduous (shedding foliage in winter). If you're not sure, taking a sample to your local nursery is one way to check.	Plants that provide your home with shade in summer protect your home from heat. Evergreen plants suit humid climates, and are ideally positioned to the east and west. For all other climates, deciduous plants are suitable, and ideally placed to the north. This positioning will help to reduce heat absorption from the summer sun, but allow sun to filter through during winter.
<input type="checkbox"/>	The landscaping around your home – Do you have a lot of hard landscaping materials (such as pavers or concrete) around the outside of your home? If so, these materials could be retaining heat which can then be absorbed by your home.	Hard materials such as pavers attract and hold heat. Because of this, replacing it with ground cover plants that are drought tolerant can help reduce the overall heat attracted, and possibly reduce unwanted heat entering your home. The result, less work for your air conditioner in summer, and potentially less energy consumption.
<input type="checkbox"/>	Skylights and light tubes – Do you have skylights or light tubes allowing natural light into your home? Are they covered by external blinds or louvers? If not you could be letting unwanted heat into your home.	Because skylights and light tubes conduct sunlight into your home, they can also conduct heat, affecting your home's temperature and increasing the cooling you require.
<input type="checkbox"/>	Your pergola or outdoor area – Is your pergola or outdoor area in direct sunlight? Do you have, or have you considered planting deciduous vines on the walls?	Plant deciduous vines to grow on pergolas for summer shade. They will then shed foliage in winter allowing the sun in.

The little changes count when it comes to energy efficiency

Here are four energy efficiency facts you might not know about exterior shading.

- 1. Did you know?** Adding shading around your home can block up to 90% of heat generated by the sun[^].
- 2. Did you know?** East and west facing verandahs, pergolas and balconies can receive a lot of unwanted early and evening sunlight. Placing plants around the structure can help shade unwanted sun.
- 3. Did you know?** Shading over windows is critical to reducing unwanted heat within your home, especially if your windows receive direct sunlight.
- 4. Did you know?** Vines on north and east facing walls can also provide summer insulation. For the best results, make sure there's a 500mm gap between the wall and the planted screens for ventilation and cooling purposes[^].

[^]SOURCE: www.yourhome.gov.au

Insulation check



Acting as a barrier to protect your home from hot and cold conditions outside, insulation helps maintain a comfortable temperature inside your home. The more effective the insulation, the more effectively appliances like heaters and air conditioners can operate, reducing your energy consumption.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	What your house is made of – Check what your home is constructed of (such as bricks, timber or cladding) as different materials have different insulation properties.	Aerated concrete blocks, hollow expanded polystyrene blocks, rendered extruded polystyrene sheets, and even straw bales are all more modern building materials that provide good insulation. Each of these materials can help to trap the hot or cold air in your home, reducing your use of heating and cooling appliances.
<input type="checkbox"/>	Your ceiling and roof insulation – Do you have insulation in your roof and ceiling? Check your home's building documentation to find out.	Roof insulation is installed under the roofing material and above the ceiling. It reduces the heat gain from the roofing material passing into your home by stopping heat transfer between the roof space and rooms below. Consider installing or topping up insulation to the correct thickness in the ceiling to help reduce the heat transfer. You might like to consult an insulation expert for advice.
<input type="checkbox"/>	Your wall insulation – Do you have insulation in your external walls? Check your home's building documentation to find out. Without insulation, your home may be more susceptible to heat transfer between the outside and inside, affecting the inside temperature.	Installing insulation in wall cavities, around stud frames and within solid walls can help you save up to 20% of the energy normally used for heating and cooling [^] .
<input type="checkbox"/>	Your floor insulation – Do you have insulation under your floor? In certain climates floor insulation can help you manage your inside temperature by preventing the transfer of heat or cold from the ground into your home. Check your home's building documentation to find out.	Floor insulation in cooler climates can help retain warmth and reduce the effort required from your heater. In warmer climates floor insulation helps retain cool air.
<input type="checkbox"/>	Any recessed downlights in your ceiling – Check if your downlights have protectors installed in your ceiling. An insulation professional should be able to install this for you.	Installing downlight protectors reduces heat loss from your home by sealing any gaps around your lights. This can help you maintain a more comfortable temperature inside.
<input type="checkbox"/>	Whether your exterior shading suits your insulation – Check if you have the right amount of exterior shading for your insulation. Contact an insulation expert, builder or carpenter to find out.	Insulation works best in conjunction with exterior shading. Without it, built up heat can be stored by insulation creating an 'oven effect', warming your home. Your air conditioner then has to work harder to try to reduce the temperature of your home.

The little changes count when it comes to energy efficiency

Here are three energy efficiency facts you might not know about insulation.

1. **Did you know?** In warmer climates, insulation should also be installed in verandah roofs. Any heat build up under your verandah can affect your home's temperature as well.
2. **Did you know?** Insulating your entire home properly could help reduce your heating or cooling energy consumption by 50%[^].
3. **Did you know?** Installing roof and ceiling insulation could save up to 45% of the energy you use on heating and cooling[^].

[^]SOURCE: www.yourhome.gov.au

Draught proofing and weather sealing check



The air flow in and out of your home can affect the inside temperature. That's why draught proofing and weather sealing are important. Proper draught proofing and weather sealing can reduce the effects of outside conditions on your home, helping to maintain a comfortable temperature inside.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	<p>Your interior wall joints – Are there any cracks or gaps? If so, heat or cold from the outside might be able to enter your home, meaning your heating and cooling need to work harder to keep the temperature constant.</p>	<p>Caulking and other expandable sealers that can be bought from your local hardware can be used to fill these spaces.</p>
<input type="checkbox"/>	<p>The seals on your doors and window frames – Check all the windows within your house for gaps and look for excess space between doors and their frames. Caulk any gaps or spaces, or install weather stripping to seal.</p>	<p>Doors and windows can become warped over time from use and weather exposure. From this, they are prone to small gaps forming. Sealing with caulk and weather stripping can minimise any outside air entering your home, and altering the temperature.</p>
<input type="checkbox"/>	<p>The bottom edge of your doors – Do they have a door sweep installed? A door sweep is a thin rubber strip that brushes along the floor as your door opens. You can buy these from your local hardware store.</p>	<p>By adding a door sweep strip you can help prevent air getting through the gap underneath your door, affecting your inside temperature.</p>
<input type="checkbox"/>	<p>Your air conditioner – If you have an air conditioner, check the edges where they enter your home. Are there any gaps forming? If so fill the gaps with caulk or gap sealer.</p>	<p>Because air conditioners connect to the outside of your home, they could be allowing outside air to enter, altering the inside temperature.</p>
<input type="checkbox"/>	<p>Your electrical points – Have draught proofing gaskets installed by an electrician. Draught proofing gaskets can be purchased from your hardware store, and sit behind the cover plates of electrical points to seal gaps.</p>	<p>Behind your electrical points, the gap in the wall where the wiring is fed through could be letting air from the outside into your home. This outside air could be affecting the temperature inside your home.</p>
<input type="checkbox"/>	<p>Any exposed piping, electrical or telephone lines – Don't forget to check places where electrical or telephone wiring enters your home. If there are any gaps, no matter how small they are, they could be allowing air to enter, affecting the inside temperature. You should engage a professional (such as an electrician) to seal these gaps with caulking.</p>	<p>Check both the external walls and internal walls where these utility pipes and wires enter your home. Minimising the gaps around these entry points can make a difference to the energy used on heating and cooling your home.</p>

The little changes count when it comes to energy efficiency

Here are three energy efficiency facts you might not know about draught proofing and weather sealing.

- 1. Did you know?** Draughts can be good for cooling in warmer climates, but not where energy is consistently being used for heating and cooling.
- 2. Did you know?** Air draughts in and out of your home can account for a heat loss of up to 25%[^].
- 3. Did you know?** Draught proofing can help maintain a comfortable inside temperature, particularly for older homes. If you are not confident about sealing draughts yourself, talk to a carpenter to get some estimates.

[^]SOURCE: www.yourhome.gov.au

Your DIY home energy checklist.

Assessing your main household appliances (everything inside your home).

What appliances you buy, the settings you use them on and how you use them daily make a difference to the energy consumption in your home.

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Heating and cooling check

Managing the temperature inside your home can consume a lot of energy, especially during summer and winter. It's important to choose the right type of energy efficient appliances for your situation and use them appropriately.



	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	Your heater's thermostat – Check what level your thermostat is currently set to. In winter, consider adjusting the temperature to a lower setting, and wearing warmer clothes or using extra blankets.	The temperature your heater is set at can affect your home's energy consumption. Even a one degree change in temperature can affect your energy bill by up to 10% [^] .
<input type="checkbox"/>	Your heater's timer – If your heater has a timer, make a note of when people are normally home during the day, and set it to activate only during these periods.	By reducing the overall time your heater is running, you could be reducing your energy consumption, which means less on your bills.
<input type="checkbox"/>	Your heater's filter and ducts – If your heater has a filter, refer to your appliance manual for advice on cleaning and maintenance. If you have ducted heating, get a professional to regularly check the ducts to make sure they are properly sealed and clean.	A build-up of dust and dirt in your heater's filter can affect its performance, and the energy consumed to run it. If you have ducted heating, keeping your ducts clean and properly sealed could improve efficiency.
<input type="checkbox"/>	The settings on your air conditioner – What temperature is your air conditioner usually set to? Adjust the settings to cool your home to between 20–24°C.	These are the settings recommended by leading air conditioning system manufacturers. Every degree you can reduce your cooling by can affect your energy consumption by up to 10% [^] .
<input type="checkbox"/>	Your curtains and blinds – Do you normally close your blinds and curtains when operating your cooling appliances? If not, you could be missing out on potential energy savings.	When curtains and blinds are left open, the air temperature inside is more affected by outside temperatures. In summer, having open curtains and blinds could mean your cooling system has to work harder to keep your home cool thereby using more energy. Having them closed provides more insulation.
<input type="checkbox"/>	How you manage airflow – If your refrigerative air conditioner is on, shut all windows and doors to help keep the cool air in. If there's a breeze outside, you might like to try turning off your air conditioner, and let your home cool naturally.	Shutting windows and doors when your air conditioner is in use reduces the amount of cool air that escapes, reducing the energy consumed by your air conditioner.

The little changes count when it comes to energy efficiency

Here are three energy efficiency facts you might not know about heating and cooling.

- 1. Did you know?** A gas heater is typically cheaper to run and more efficient than a standard electric heater*.
- 2. Did you know?** Using rugs and carpets on slab floors can help retain heat in your home, reducing the energy required to be used by your heater.
- 3. Did you know?** Fans can be a cheaper way to cool your home, as they usually require less energy than air conditioners to run*.

[^]SOURCE: www.yourhome.gov.au

*SOURCE: www.livinggreener.gov.au

Hot water check



In the average Australian household, heating water can account for up to a quarter of the household's energy consumption[^]. You might like to consider some ways you can reduce your hot water consumption to help save on your hot water heating costs.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	Your shower – Do you have a water efficient showerhead? They're available from hardware stores. Installing one could save you hot water, and energy.	Low-flow showerheads use approximately half the water that conventional showerheads do [^] , while still maintaining an adequate level of water pressure.
<input type="checkbox"/>	The type of hot water system you have – Is your hot water system energy efficient? Consider replacing your old electric hot water system with a more energy efficient one. Look for the energy star rating. The more stars, the more efficient. Also, consider a gas hot water or even a solar hot water system.	Energy efficient hot water systems (compared to low star rated older electric hot water systems) consume less energy, release less greenhouse emissions, and can help save money on your energy bills.
<input type="checkbox"/>	Your hot water storage system's thermostat settings – Check your hot water system's thermostat settings. Most storage hot water system's thermostats should be set at temperature of no less than 60°C [^] .	Every degree over 60°C means more energy consumption. Please consult a hot water expert regarding your particular hot water system's requirements.
<input type="checkbox"/>	How often you use hot water – Consider using cold water for tasks like washing dishes and laundry.	Hot water consumes energy, therefore the more household tasks you can complete without hot water can translate to energy savings.
<input type="checkbox"/>	Your hot water pipes – Are your hot water pipes insulated? Check with your plumber for advice.	Insulating your pipes can reduce heat loss in the time it takes to reach the source, such as your shower, sink or washing machine.
<input type="checkbox"/>	The position of your hot water system – Where is your hot water system positioned in your home? Consider moving it closer to the areas you use hot water, such as your bathroom and kitchen, to decrease the time it takes for hot water to reach your tap or showerhead.	A lot of hot water can be wasted travelling through long pipes. The one-off cost of moving your system could save you on water usage and energy in the long run.

The little changes count when it comes to energy efficiency

Here are three interesting energy facts to keep in mind when saving on hot water.

- 1. Did you know?** Avoid using small amounts of hot water if you can as each time you use hot water up to a litre or more of heated water will go cold in the pipes afterwards.
- 2. Did you know?** The one-off purchase price of an energy efficient hot water system is usually recovered within the life of the unit[^].
- 3. Did you know?** Installing shorter pipes with a smaller diameter can also help cut down energy and water usage[^].

[^]SOURCE: www.yourhome.gov.au

Appliances check



In most rooms there's an energy consuming appliance that adds to your energy bill. Simple changes to how you use and maintain these can reduce your consumption.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	Your fridge door seals – Look at your fridge door seals by placing a piece of paper on the door edge, then shut. If the paper slides out easily, the seals might not be strong enough. In this case you may want to consider replacing them.	If your seals aren't secure enough, you could be losing valuable cold air, meaning your fridge has to work harder to maintain the cool temperature inside. This increases the energy consumed by your fridge.
<input type="checkbox"/>	Your dishwasher – If possible, change your dishwasher's settings so you can open the door once the wash cycle is finished, and let your dishes dry naturally. Check your appliance manual for guidance.	The drying cycle of your dishwasher consumes energy, whereas letting your dishes dry naturally is free.
<input type="checkbox"/>	Your freezer – Look at how thick the ice build up is on your freezer walls. If you think the ice is thicker than half a centimetre – consider defrosting it.	A build up in ice restricts the level of cooling that occurs, meaning your freezer has to work harder to keep everything frozen, thereby consuming more energy.
<input type="checkbox"/>	Your microwave – Is your microwave switched off? If not turn your microwave (or any other small appliances) off at the power point when not in use.	It's a good way to save. Look around your kitchen now to see what's on, but not being used, and what can be turned off.
<input type="checkbox"/>	Your washing machine – Do you normally wash in hot water? If so, consider washing your clothes in cold water to save energy.	Heating water is typically one of the largest sources of greenhouse gas emissions from the average home*. Washing clothes in cold water means your machine is not consuming the extra energy required to heat the water.
<input type="checkbox"/>	What's left on standby mode – Check whether any of your home entertainment appliances are left on standby mode – you can often tell as they'll have a light showing they're turned 'off'. Most computers, TVs and DVD players have this standby mode function. Consider turning off appliances at the wall instead of leaving them on standby mode.	Standby mode leaves these types of appliances consuming energy constantly. Turning appliances off at the wall will stop this. As an alternative consider purchasing a standby power control board, which when connected to groups of appliances – such as entertainment units – will cut standby power to all connected appliances when one of the units is turned off. These can be purchased at most hardware stores.

The little changes count when it comes to energy efficiency

Here are three interesting energy facts to keep in mind when saving energy on your appliances.

1. **Did you know?** Computer screensavers do not save any energy, as your screen is still on. To save energy, switch your monitor off completely when not in use.
2. **Did you know?** Restricting ventilation around the back of your fridge can add 15% to its operating costs*.
3. **Did you know?** A standard clothes dryer adds 150kg of greenhouse gases into the atmosphere. Drying your washing in the sun adds none*.

#SOURCE: www.climatechange.gov.au

*SOURCE: www.livinggreener.gov.au

Lighting check



Lighting technology and design has improved significantly over the last decade, and today there are a number of energy efficient alternatives to the traditional lighting solutions. For example the Australian government has phased out traditional incandescent light globes for energy efficient alternatives, so if you haven't already, now is a great time to look at the lighting in your home.

	Take a look at	Why?
<input type="checkbox"/> (tick box ✓)	<p>How you make the most of natural lighting – If it's daytime, look around your home for what lights are on, consider if the area needs lighting, and what lighting alternatives there are.</p>	<p>Natural lighting is free. Consider opening up your blinds and curtains when it's light outside, or other alternatives that bring natural light into dark internal areas.</p>
<input type="checkbox"/>	<p>Your light globes – Have you considered replacing the light globes in your home with energy efficient bulbs? You can purchase compact fluorescent lamps (CFLs) at your local hardware or grocery store, and in most cases they're easy to install around your home.</p>	<p>Replacing all the lights in your home with energy efficient globes could reduce the energy consumed by your lighting.</p>
<input type="checkbox"/>	<p>Your lights outside – Have you installed motion sensors on outside lights? Motion sensors mean your lights will turn off automatically, which is handy if you forget to turn them off at night.</p>	<p>Installing motion sensors means your lights are activated when you need them, and are using less energy when they're not on. They can act as a good security mechanism as well.</p>
<input type="checkbox"/>	<p>Combining light switches – Take note of any light switches that turn on more than one light. Next time you have an electrician out, consider adding extra switches so that each light can be individually turned off and on.</p>	<p>By separating your light switches you can individually turn on only the lights that you need. Less lights on means less energy being consumed.</p>
<input type="checkbox"/>	<p>Using individual lamps more – Do you have individual lamps in your study or living room? If not consider purchasing a few and place them around your home for lighting individual spaces and activities.</p>	<p>Using smaller lamps for tasks like reading or studying means you're lighting a smaller space compared to an entire room, potentially reducing energy consumption.</p>
<input type="checkbox"/>	<p>Your routine as you leave a room – Start thinking about little reminders you can use to remember to turn off lights when they're no longer required, such as when you leave a room.</p>	<p>Every light switched off helps reduce your home's energy consumption, thereby helping to reduce your electricity bill. Creating mental notes when you leave a specific room can help jog your memory, until turning off lights becomes routine.</p>

The little changes count when it comes to energy efficiency

Here are three interesting energy facts to keep in mind when looking to save on energy for lighting.

- Did you know?** Where a large room (such as a lounge room) is normally lit by two incandescent bulbs, replacing these with energy efficient compact fluorescent lights (CFLs) could reduce your lighting costs by up to 80%^.
- Did you know?** To save on energy consumption for lighting, choose light globes with a lower wattage where suitable.
- Did you know?** Consider painting rooms in light colours to help reflect natural light better, minimising the need for artificial lights.

^SOURCE: www.yourhome.gov.au