

# Actions to reduce household carbon emissions

## Potential emission and cost savings

There are many actions we can take around the home to reduce our household carbon footprint - many of these can also help save on household bills.

While individual actions may have a small impact, when taken together they can add up to a big change. Refer to the list below to see the difference you can make by implementing the actions that make sense for your household.

All cost and emission saving estimates apply the following assumptions, unless indicated otherwise:

- Average annual energy consumption of 5,457 kilowatt-hours (kWh) for a Brisbane household.
- Cost of electricity \$0.25/kWh.
- Cost of fuel \$1.42/litre.
- Emissions factors for electricity and fuel are taken from the National Greenhouse Accounts (NGA) Factors August 2019 update.
- All factors are for the full fuel cycle (scope 1, 2 and 3), where available.
- All emissions savings are tonnes of carbon dioxide equivalent (tCO<sub>2</sub>-e).

Action	Calculation	Annual cost saving	Annual emission saving
Save power by switching off lights and switching off appliances at the wall when not in use.	Stand-by energy use by household appliances typically represents 10 per cent of a household's electricity use. Savings are based on a 10 per cent reduction in household electricity consumption achieved through switching off unnecessary lighting and switching off appliances at the power point when not in use.	\$135	0.5tCO <sub>2</sub> -e
Reduce electricity use for lighting by replacing bulbs with more efficient LEDs.	Lighting typically represents around 10 per cent of a household's electricity consumption. Savings are based on LED lighting consuming 80 per cent less energy.	\$110	0.4tCO <sub>2</sub> -e

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Set your air conditioner to between 24 and 26 degrees in summer and 18 to 20 degrees in winter.	Heating and cooling typically represents up to 40 per cent of a household's electricity consumption. For every degree you set your thermostat away from the outside temperature, there is around a 10 per cent increase in the energy used by your air conditioner. Savings are based on a 5 to 10 per cent reduction in total household electricity consumption.	\$67 to \$135	0.25 to 0.5tCO <sub>2</sub> -e
Use your washing machine less by waiting until you have a full load, use cold water instead of hot and air-dry clothes instead of using a dryer.	Savings are for air drying instead of using a 3-star clothes dryer with 5kg capacity four times per week.	\$190	0.7tCO <sub>2</sub> -e
When replacing appliances, look for the energy star rating and choose an energy efficient one.	Based on average savings from replacement of a 3-star single door 700 litre fridge/freezer with a 5-star equivalent.	\$30	0.1tCO <sub>2</sub> -e
Seal your windows and doors properly and close them when using air conditioning to keep winter draughts out and prevent cool air from escaping in summer.	Heating and cooling typically represents up to 40 per cent of a household's electricity consumption. This can be reduced by up to 25 per cent through draught proofing. Savings are therefore based on a 10 per cent reduction in overall household electricity use.	\$135	0.5tCO <sub>2</sub> -e
Use less hot water by taking shorter showers and installing low flow shower heads.	Water cost saving is based on switching a shower head that uses 20 litres/minute with one that uses 9 litres/minute. Assumes 3-minute showers once a day for 52 weeks and \$3.61/kilolitre cost of water. Electricity cost savings result from using less hot water and avoiding the need to heat 16.5 litres of water (assuming a 50:50 mix of hot and cold water at your tap) from 25 to 60 degrees.	\$100	0.2tCO <sub>2</sub> -e

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Sign up for the Love Food Hate Waste six-week food waste challenge and continue your new habits.	Brisbane households send around 150,000 tonnes of edible food waste to landfill every year, which is around 330kg per household. Emissions savings are based on eliminating 330kg of edible food waste each year. Cost savings are based on an estimate of the spend on food and produce that spoils or is not eaten.	\$2200 to \$3800	0.2tCO <sub>2</sub> -e
Buying a new car? Consider a fuel efficient, hybrid or fully electric option.	Based on replacing a medium passenger car travelling 10,500 kilometres/year with a hybrid or fully electric equivalent. Assume average fuel efficiency of 8.85 litres/100km for a medium passenger car compared with 6.4 litres/100km for a hybrid and 182.5 watt-hours/km for an electric model.	\$365 to \$840	0.5tCO <sub>2</sub> -e
Make sure your paper and cardboard go into the recycling bin.	General waste collected from Brisbane households still contains around 15 per cent paper and cardboard. Over a year, this amounts to just over 100kg of paper and cardboard waste per household that goes to landfill. Emissions savings are based on diverting this amount of paper and cardboard waste from landfill for recycling each year.	N/A	0.1tCO <sub>2</sub> -e
Take public transport instead of the car.	Based on replacing two 15km trips per day in a medium passenger car with two 2-zone bus trips, 5 days a week for 48 weeks in a year. The significant saving reflects the avoided cost of owning, maintaining and running a medium passenger car (\$0.6985/km) as determined by the RACQ's 2019 review of private vehicle expenses.	\$3000	0.4tCO <sub>2</sub> -e

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Walk or ride instead of driving to get fit and reduce your carbon emissions at the same time.	Based on replacing a 10km round trip in a medium passenger car one day a week for a year (52 trips). Assume average fuel efficiency of 8.85 litres/100km for a medium passenger car. Cost savings are based on avoided fuel costs only.	\$65	0.1tCO <sub>2</sub> -e
Choose biofuel blends like E10, where available.	Ethanol is a biofuel rather than a fossil fuel, therefore the carbon emissions from the combustion of ethanol are close to zero. E10 is petrol mixed with around 10 per cent ethanol. The emissions reduction achieved is closer to 7 per cent as the energy content of the fuel blend is slightly lower than for petrol only.	N/A	7% reduction compared to using petrol
Buy accredited renewable energy to power your home through your electricity provider.	Based on switching to 100 per cent renewable energy. By buying electricity produced from renewable energy sources you can eliminate the carbon emissions associated with the electricity used in your home. There are no cost savings from this action. Rather, you might pay a premium of around 5.5c/kWh for an accredited renewable energy product.	N/A	5tCO <sub>2</sub> -e
Install a rooftop solar power system.	Based on 5 kilowatt (kW) solar system producing an average 3.8kWh/kW/day for 365 days. This system produces enough electricity to meet the needs of an average Brisbane home and emissions savings are based on this generation being consumed in the home. The cost savings result from the avoided cost of purchased electricity, as well as the value of any excess electricity exported to the grid.	\$1400	4.5tCO <sub>2</sub> -e

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Check the running time for your pool pump to minimise over-use and consider upgrading to an energy efficient or variable speed pump.	Based on a variable speed drive pump reducing pool electricity consumption by 80 per cent. Assume average annual energy consumption of a pool to be 2635kWh.	\$500	2tCO <sub>2</sub> -e
Separate your food waste and take it to a community composting hub or set up a household compost system or worm farm.	Based on a full 9 litre kitchen caddy of food waste being diverted from landfill to compost every week for a year.	N/A	0.2tCO <sub>2</sub> -e
Get a green waste recycling bin to keep your garden waste out of landfill and produce fewer emissions of methane, a powerful greenhouse gas.	Based on full 240 litre green bin emptied fortnightly.	N/A	0.7tCO <sub>2</sub> -e
Take advantage of Brisbane City Council's Sustainable Nappy Cashback.	Based on 5.5 disposable nappies used every day for 365 days at a cost of \$0.27 per disposable nappy. The savings reflect the cost of washing re-usable nappies but do not include the up-front cost of purchasing these nappies.	\$535	0.18tCO <sub>2</sub> -e

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