

Reducing our Greenhouse Gas Emissions from our Homes

Purpose

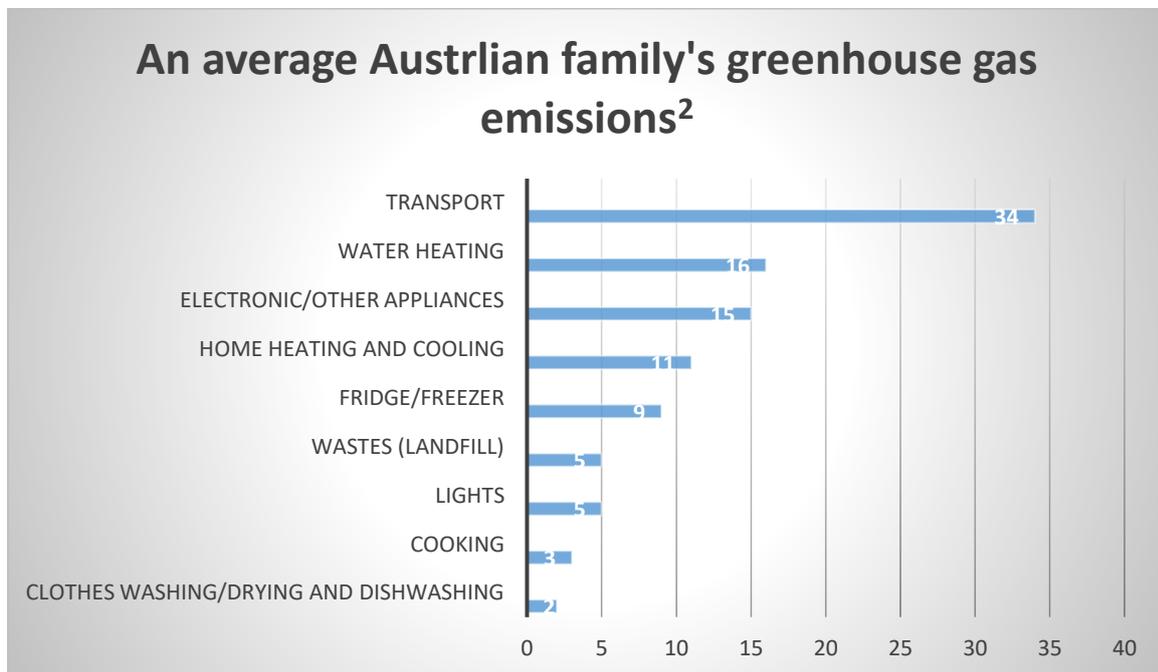
This sheet provides information on carbon emissions from the energy we use in our homes. It shows how simple actions can make a real difference to our total emissions.

Human-caused carbon emissions, which are mostly carbon dioxide and methane (natural gas), are the main causes of global heating, leading to droughts, storms, wildfires and warming oceans, which are threatening millions of human lives and the whole beautiful creation.

Reducing energy use in our homes can be a public witness to caring for God's world. As well as reducing carbon emissions (and bills), it's a chance to show what can be achieved, and raise awareness.

Why our household energy use matters

Households use about 11.5% of all energy in Australia: about 4% for transport and 7.5% in our homes.¹



Ways to reduce Greenhouse gas emissions in the home

1. Purchase green electricity

This is the quickest, simplest way to make a real difference. Green electricity is accredited by government to be zero-emissions; from wind, hydro and solar generators. (Note: This is not the same as carbon offsets)

(offsetting the emissions from coal and gas fired generators, e.g. by tree planting): trees will take 20 years or more to absorb the carbon dioxide they're meant to offset. We don't have that long – the next ten years are critical to prevent irreversible climate change!)

2. Disconnect from gas

11% of Australia's carbon emissions are Fugitive Emissions. This is the methane (natural gas) which escapes from gas well drilling, gas pipe leaks, and coal mining. It is a greenhouse gas 28 times more potent (for trapping heat) than carbon dioxide. This is a massive and little-understood problem. Burning the gas also releases carbon dioxide.

3. Minimise embodied energy in building and renovations

Minimise embodied energy in building and renovations. Embodied energy is the energy used in making things. Concrete, bricks and steel have very high embodied energy. They can be largely replaced by timber: conventional framed walls and roofs, or engineered timber (glue-laminated beams and panels from sustainable plantations), for structures up to 12 storeys.³ Timber is mostly carbon: it locks away the carbon for the lifetime of the building (or longer if materials are re-used).

4. Reduce energy use

Space heating

- Insulation is important, but simpler and more important is to *stop draughts*. A leaky house will replace all the air inside it several times every hour. That's a lot of expensive warm air escaping. Check under skirting boards, around doors and windows, and the outside of door/window frames. Rubber seals/compounds are available to block different types of gaps.
- Only heat the rooms you need and reduce the temperature setting. Even one degree makes a significant difference.
- Simple electric radiators, while less efficient than reverse cycle air conditioning, can heat a well sealed room with 1000 watts (1 kilowatt). Air conditioning heating multiple rooms may use 4 kilowatts or much more. Do you need to heat all those rooms?

Space cooling

- Do you always need to run air conditioning? Consider ceiling fans, and improving cross ventilation; it may be as simple as making windows easier to open and close. A split-system air conditioner uses 100 times the energy of a fan.
- Shade western and eastern windows to keep out summer sun.

Water heating

- Heat pump hot water heaters are three times more efficient than traditional electric. Also consider solar thermal (roof top collector) with electric boost (though heat pumps are falling in price and easier to install).
- Choose the lower water temperature setting, and switch off when you're away.

Lights and appliances

- Replace leaky seals on fridge and oven doors.
- Spare fridges should be turned off when not needed – they're big energy users.
- Replace incandescent (including halogen) lights with LED.

Timers on appliances

Are under-floor heating or air conditioners sometimes left on accidentally?

- Consider installing push button switches which turn off after two hours.
- Electronic home management systems can also do this, but beware, research shows these don't usually save energy, as appliances are often set to turn on or stay on unnecessarily.

5. Install solar (photovoltaic) panels

Any excess power you generate is sold to your electricity provider. For more information go to:

<https://energysaver.nsw.gov.au/households/solar-and-battery-power/installing-and-connecting-solar-panels>

6. Reduce household waste

- Food waste and all organic materials buried in landfills decompose anaerobically (without air). This releases methane (natural gas), which is much more harmful than carbon dioxide. Home compost which is turned regularly has far lower emissions and is useful. It's practical to make your own compost even on an apartment balcony.
- Reducing use of packaging and unnecessary “stuff”, saves emissions from transport, and the leaching of toxins from landfills over thousands of years.
- Remember there is no such place as “out”. You can't throw rubbish “out” (out of sight and out of mind); If it's not recycled, it all goes in a hole in the ground! There is no happy place which we can ignore.

7. Energy audit

- An energy consultant can help to identify air leaks, uninsulated areas and ways to save energy use by appliances ⁴
- You can also do your own home energy audit.⁵ The UCA Victoria and Tasmania Synod's Energy Audit Handbook is intended for churches, but is also useful for households. It gives a good understanding of energy basics, reading electricity meters, and how to conduct your own site inspections.

Further Information

For more information and facts on the climate crisis, environmental worship resources, the Synod Climate Action Strategy, and what you can do go to: www.unitingearth.org.au

The Australian Religious Response to Climate Change (ARRCC) provides a wealth of resources on climate change and how people of various faiths can respond. www.arrcc.org.au

The Climate Council is an independent source of evidence based information on climate change, with infographics, facts sheets and discussion resources on a host of climate change related topics. Go to: www.climatecouncil.org.au

For information on low carbon living and building go to; www.lowcarbonlivingcrc.com.au

References

¹ Australian Energy Update, Commonwealth of Australia 2019, p.19. Available at:

<https://www.energy.gov.au/publications/australian-energy-update-2019>

² Adapted from *Global Warming Cool it!*, Commonwealth of Australia. Available at:

www.portstephens.nsw.gov.au/files/217567/File/Globwarm_Cool_It.pdf

³ Sydney Morning Herald, May 28 2019. Available at: <https://www.smh.com.au/business/companies/australia-s-tallest-timber-building-to-top-up-melbourne-central-20190528-p51s0g.html>

⁴ A starting point is Renew, a non-profit sustainability organisation for over 40 years. www.renew.org.au

⁵ To do your own home energy audit, see the SA government site: <https://www.sa.gov.au/topcs/energy-and-environment/using-saving-energy/home-energy-audits/do-a-home-energy-audit>

This information sheet was developed by the Church and Individual Emissions Task Group, 2020, one of the task groups of the Synod Climate Action Strategy.