



Think Globally - Act locally

Helpful Hints

– Energy Efficiency in the Home

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Climate change

This article will provide helpful hints for energy efficiency in the home. Climate change is defined as a “change in global or regional climate patterns, in particular a change apparent from the mid to late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels” (Oxford 2005).

There are a multitude of reasons why we need to decrease our carbon footprint. For instance, Climate change affects each facet of our life’s including individuals social and environmental health deterrents like having access to clean air, water, adequate food, and shelter. Between 2030 and 2050 The World Health Organisation predicts that an additional 250,000 death per year will occur due to climate related stressors (2021). As well as an increased burden to the health care sectors globally (WHO 2021).

Although climate change is a global issue, Australia has a great deal of work to do, as Australia has the highest emissions per capita among developed countries (UniMelb 2015). Greenhouse gas emission by each are displayed in image 1 one below.

Greenhouse gas emission by sector

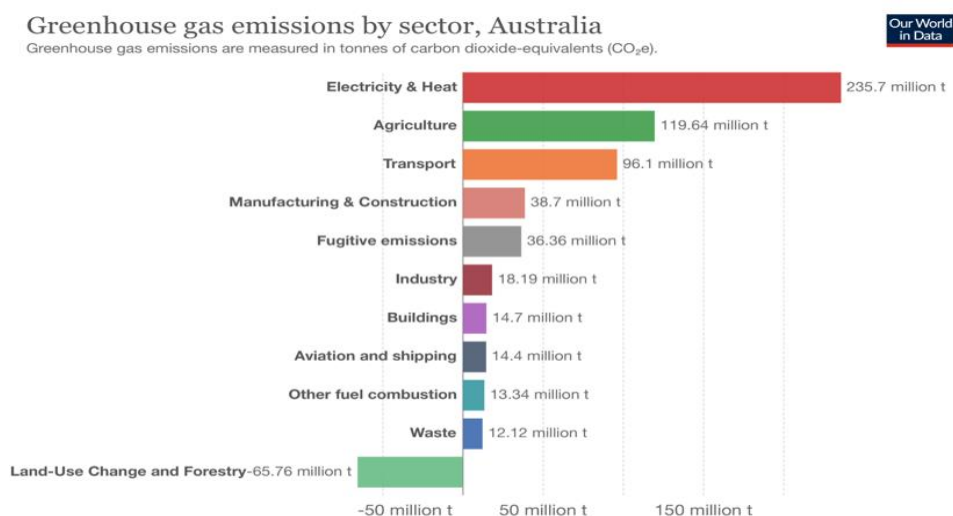


Image 1: Australian Greenhouse gas emissions by sector

Source: Ritchie, H & Roser, M, 2020, "CO₂ and Greenhouse Gas Emissions". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>'.

On Average in Australia an individual per year is responsible for 16.31 tons of greenhouse gas emissions per year. As seen in image two compared to that of individuals in 1979 who produced 14.21 tones yearly (Ritchie & Roser 2020). Whilst it has been made clear by the United Nations that governments "must create conditions that make lifestyle changes possible" (Moodie 2021). Ultimately decreasing emissions of greenhouse gases through better transport, food and energy-use choices can combat these outcomes (WHO 2021).

Individual CO2 emissions

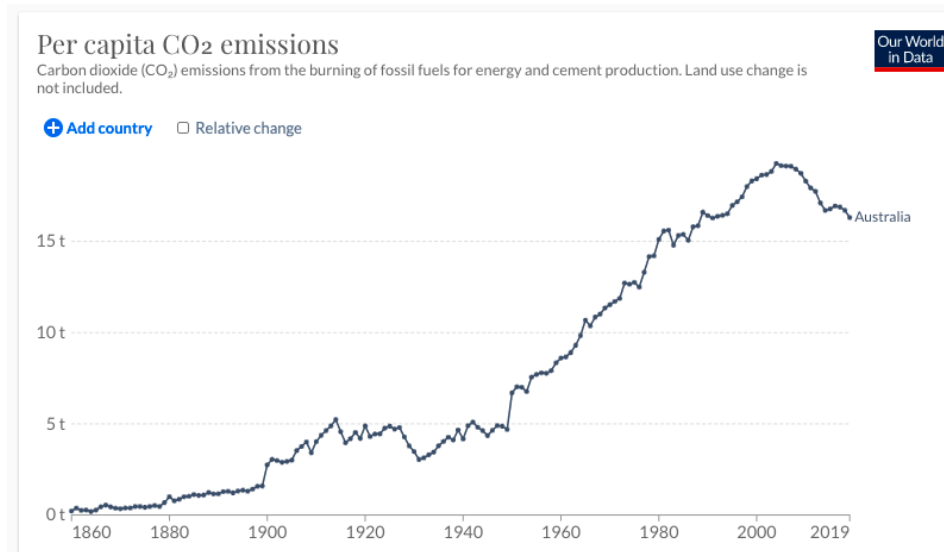


Image 2: Per capita CO2 emissions Australia

Source: Ritchie, H & Roser, M, 2020, "CO₂ and Greenhouse Gas Emissions". Published online at OurWorldInData.org. Retrieved from: '<https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>'.

Electricity

During 2016 the electricity & heat sector in Australia was responsible for 235.7 million tons of greenhouse emissions (Ritchie & Roser 2020). Making the simple switch led bulbs can make a huge difference. For example, 220 lumens Led bulbs last from 10,000- 50000 hours and uses 4W of energy, compared to an incandescent bulb which lasts approximately 1200 hours and gives off 25w (Energy rating 2020).

Easy ways to decrease your electricity usage



- Solar panels
- Switching to led bulbs
- Turn off power outlets when not in use
- Consider Changing energy retailers

According to Mihm, in Southeast Queensland the greenest energy electricity provider is Power shop as seen in image 3. Furthermore, in rural I QLD, ErgonEnergy is the greenest provider (2018).

The greenest energy retailers by state

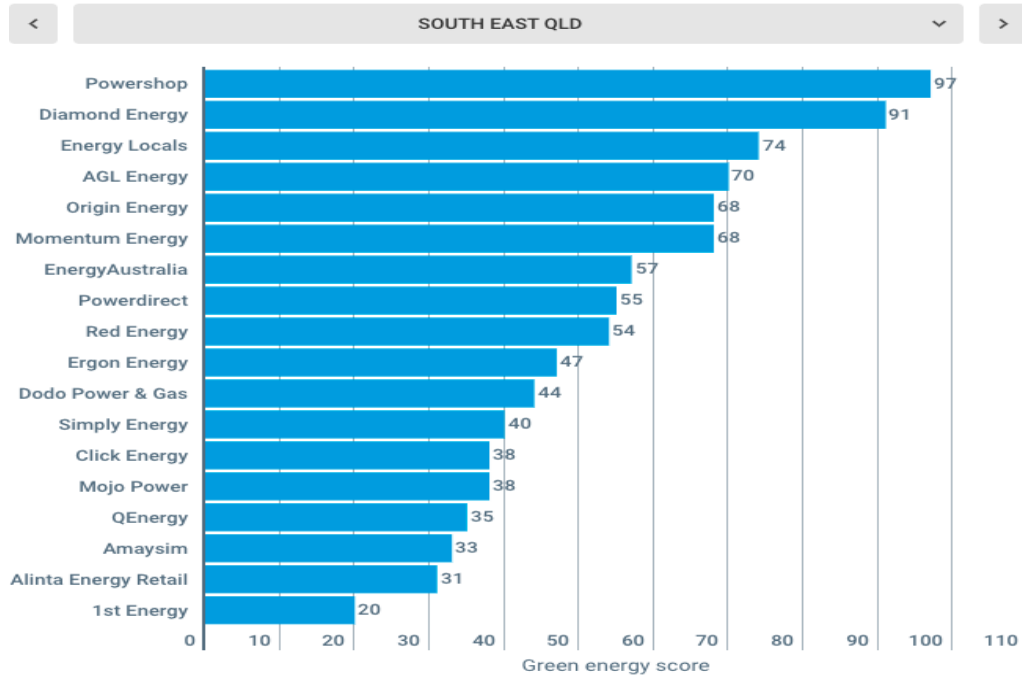


Image 3: Green energy retailers, Southeast QLD

Source: Mihm, U, 2018 Green electricity review, Choice retrieved from

<https://www.choice.com.au/home-improvement/energy-saving/reducing-your-carbon-footprint/articles/green-electricity-review>

Water

According to the Australian Bureau of statistics during 2019-20 Australia's total water use remained stable at 77,367 GL and Total water consumption was 11,231 GL. and Average area rainfall across Australia was 347mm, stable year on year (ABS 2021). Due to the unpredictability of Australia's rain fall in the midst of climate change and river flows estimated to drop by 10- 25% within ten years, it's important to take every opportunity to save water (Heggie).

Simple changes

- install a Water tank
- Turn off the water after you wet your Toothbrush
- Take shorter shower/ water-Saving Showerheads (refer to table 1)
- Repair leaks ASAP
- Use your grey water or left-over bath/ cooking water to water your plants



Water saving attachments



Hydrosave Chrome Plated Inline M&F Flow Controller \$11.05	Kinetic 4 Piece Water saving discs \$8.20
https://www.bunnings.com.au/hydrosave-chrome-plated-inline-m-f-flow-controller-9-l-pm_p4950012 	https://www.bunnings.com.au/kinetic-4-piece-water-saving-discs_p4920321 
<ul style="list-style-type: none"> • No discernable affect on output flow or pressure • Easily retrofitted to existing applications • Reduce water usage by up to 90% • WELS Rating: 3 Star Flow Rate 9L/min 	<ul style="list-style-type: none"> • WELS 3 Star 9 Litres per minute flow rate x 2 • Easy to install • Helps save water • WELS 5 Star 6 Litres per minute flow rate x 2

Table 1: Bunnings water saver attachments
Images: Bunnings.com.au

Transport

Within Australia the Transport sector is responsible for 96.1 million greenhouse gas emissions (Ritchie & Roser 2020). While Transport can be tricky to navigate depending on if you live in a city or more rural areas there are still simple changes you can make to assist in reducing your emissions. For instance, 1% of Australians choose to offset their flights (Hobbs & Kilvert 2020). The carbon offset programs in Australia are certified by the government-backed Climate Active program (Hobbs & Kilvert 2020).

What else can you do



- Carpool
- Take the bus, train, or walk when possible
- Fuel your car with environmentally friendly fuel
- Consider a sustainable car when you next upgrade

Food

119.64 million tons of greenhouse gas emission, with agriculture being the second highest sector in Australia (Ritchie & Roser 2020). Research estimates that switching to a vegan diet has the lowest demand on global water supply, requiring 14.4% less freshwater and 20.8% less groundwater than the omnivorous diet (Cleveland & Gee, Q. 2017, p. 135- 156). While switching to a vegan diet has the potential to reduce 17 % of Co₂, 21% for NO₂ and 24% for CH₄ (Scarborough et. al 2014). However, a vegan diet is not for everyone.

Suggestions to help start reducing your environmental impact



- Meatless Mondays
- Eating seasonally and shopping locally
- Switching to plant based alternative milks such as almond milk, as seen in image 4.
- Shop locally; farmers markets and local butchers
- See if your local council has a community garden
- Grow your own herbs at home

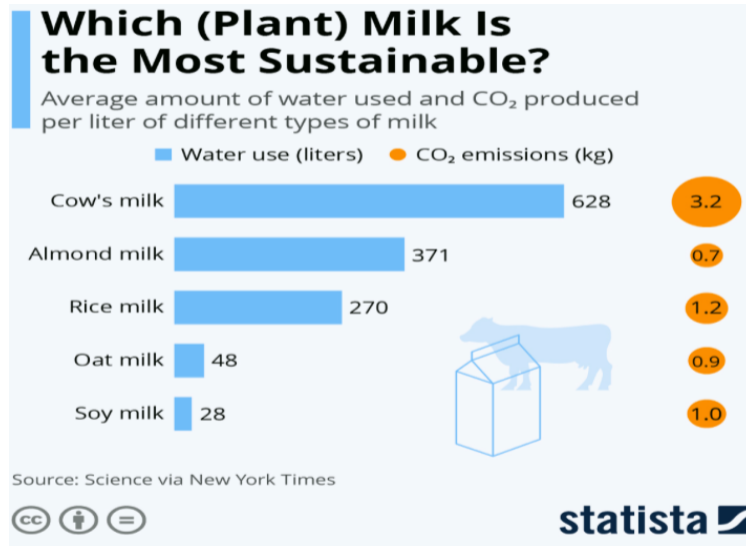


Image 4: sustainability of different milk comparison
 Source: Buchholz, K 2021, Which Plant milk is the most sustainable? Statista
<https://www.statista.com/chart/22659/cows-milk-plant-milk-sustainability/>

Fashion

We all need clothing, however according to Berg et. al., the fashion industry was responsible for about 4 per cent of global carbon emissions in 2018. However, during 2019 the World Bank estimates the fashion and shoe production contributed 10% of global greenhouse emissions 2019.

Reduce your consumption

- Buy second hand
- Repair clothing
- Swap meets
- Quality over quantity
- Donate
- Avoid fast fashion brands
- look for sustainable and ethical certifications as seen in image 5

Ethical & sustainable fashion certifications



Image 5: Fashion certifications
 Source: Spanner, "ethical made easy" <https://ethicalmadeeasy.com/10-ethical-fashion-certifications/>

Waste

In 2016-17 Australia generated about 67 million tons of waste (Department of Industry, science, energy & resources, 2021). This is not to mention the 12.12 million tons of greenhouse gases were produced during 2016 from Australia’s waste sector, as seen in image two (Ritchie & Roser 2020).

What to do



- Reuse & refill
- Donate old clothing, household items
- Plastic free where possible
- Buy less processed and packaged items
- Correct disposal Image 6) & usage of Local waste pickup
- Subscribe to sustainable brands like, the company “who gives a crap” (<https://au.whogivesacrap.org/>)

Correct waste disposal QLD



Image 6: Correct waste procedures for household waste QLD
Source: The University of Queensland 2021

Superannuation

Whilst every Australian has Super, a survey of more than 4,000 Superhero customers, about half knew they had chosen a high growth or growth investment option, with 17% of the total cohort not sure of where their investments lay (Gee 2021). This means that your super could be invested in fossil fuel production, coal mining, gambling, tobacco, and live animal exports to name a few.

Consider making the switch to an ethical superfund, benefit from.



- Know where your money is invested
- Your super aligns with your values
- Decreasing your overall CO2 contribution
- Competitive returns

Ethical superfunds and their sustainability analysis

Fund & Option	Coal investment exclusion	Oil & gas investment exclusion	Votes in favour of climate-related shareholder resolutions
Australian ethical balanced	Comprehensive	Comprehensive	100%
Australian ethical Australian shares	Comprehensive	Comprehensive	100%
Aware super socially responsible investment	Comprehensive	Comprehensive	40%
Energy super SRI	Comprehensive	Comprehensive	29%
Catholic super positive IMPACT	Comprehensive	Comprehensive	29%
UniSuper sustainable balanced	Comprehensive	Comprehensive	28%
NGS socially responsible diversified	Some	Minimal	70%

Table 2: Comparison of ethical superannuation funds and their sustainability. Research from Market forces, 2021,

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