

Carbon Action Project (CAP) At Home

The Carbon Action Project is a joint Holy Cross / St Margaret's effort to reduce energy use, and therefore carbon emissions, not only for the activities and buildings belonging to the Churches, but for the whole of the church community.

This information packet is to help you reduce your energy use and save you money. It includes a list of tips on how to save energy around your home, instructions for using the Australian Greenhouse Calculator for those wanting a closer look at your carbon footprint, and a data sheet to record your results.

We suggest you start by using the list of tips "Energy Smart Actions" as a sort of survey: go through and check off what actions you are already doing. There are also blanks for you to add actions you are already doing or have thought of (and don't forget to ask the kids!!) that aren't on the list. Then go back and highlight actions you plan to start doing. If you want, list one or more of these on the data sheet: this is your "Carbon Action Plan".

You can track how much difference these actions make by recording your energy usage before and after. There are spaces on the data sheet for that also.

Finally for those who want to see more numbers, jump online and calculate your carbon footprint using the Australian Greenhouse Calculator (AGC) developed by EPA Victoria.

<https://apps.epa.vic.gov.au/AGC/home.html>. The AGC calculates your household's greenhouse gas emissions for a year. Emissions are calculated with each input so you can see how changing your behaviour (driving fewer km's, eating less meat) changes your footprint. Once you've completed the calculation (and it may take you a couple go's) record your results on the data sheet.

If you need advice along the way, we are here to help. Contact Barbara at bcf@homemail.com.au or John at John.Goss@canberra.edu.au.

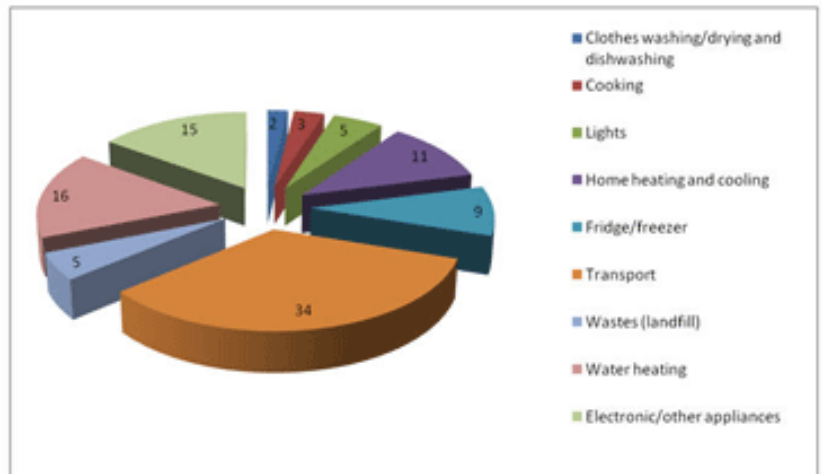
Energy Smart Actions

Use the following check-list to help you reduce energy use around your home.

Put a check (✓) in the box if you are already doing the action; highlight the actions you intend to start doing; leave blank those not applicable or not attempting. There are blanks in each section for you to add your own ideas or actions you have already taken. At the end of your trial period go back over the list and check those highlighted items you actually carried out.

Tips for sustainable transport

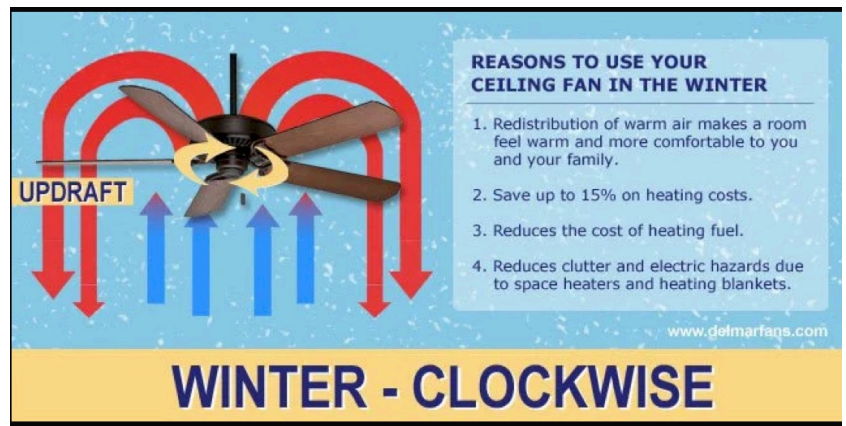
- Reduce car use by increasing walking, riding or use of public transport
- Switch to a low-emission or electric vehicle
- Ensure vehicles are well maintained (oil, tyres, filters) and tyres are sufficiently inflated
- Reduce the number of vehicles in the household
- Investigate car-share schemes as an alternative to vehicle ownership (<https://www.goget.com.au/canberra/>; <https://popcar.com.au/>)
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Tips for winter heating

- Heat the home by opening blinds/curtains on windows that receive direct sunlight during daylight hours
- Design gardens &/or trim vegetation to allow more sun into northern windows
- Use insulating window treatments (ie lined curtains or a blanket or blinds such as honeycomb) to reduce heat loss when closed
- Dress suitably for the season and use throws
- Ensure external windows and doors are closed and hang curtains across open archways if applicable
- Set heating thermostat between 17-20 degrees, or as low as comfortable
- Use timers to run appliances or heating/cooling systems
- Run heating systems at a lower temperature (but not lower than 15 degrees) overnight rather than turning off to improve efficiency
- For ducted heating (closed) systems, leave doors and floor vents open to prevent restriction to air returning to the return air vent and to improve efficiency

- Check with manufacturer to see if system is able to be zoned. (Zoning is the systems ability to heat or cool different parts of the house at different times.)
- Where a central heating system is not zoned, use an efficient space heater to heat only rooms that are being used
- Localise heating (ie heated throw rug or electric blanket) rather than heating a large area
- Use a ceiling fan in reverse to return warm air from the ceiling down into the room. Set the fan on low to avoid creating a draught
- If a fireplace is used, purchase sustainably produced firewood
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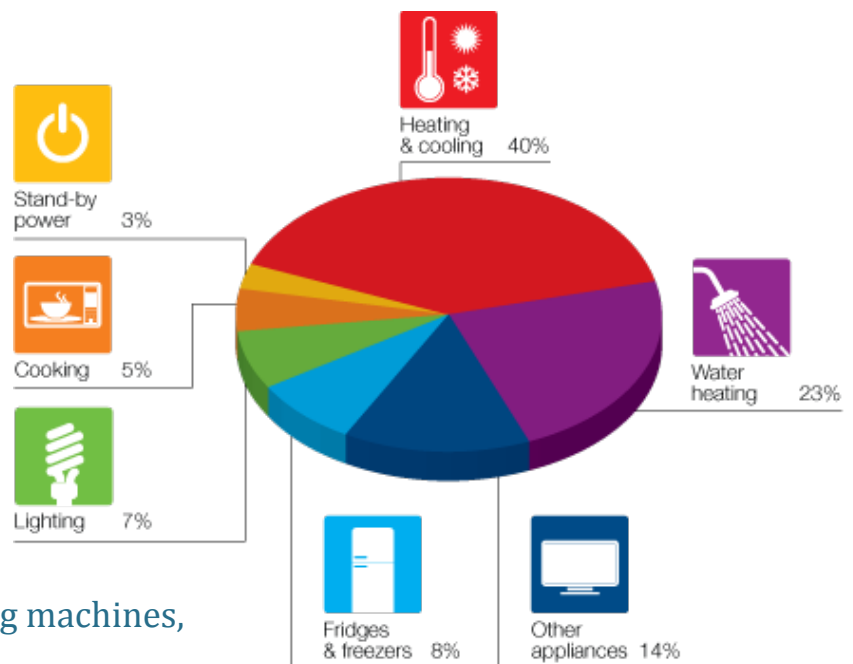


Tips for summer cooling

- Shade external windows that receive summer sun to prevent the sun from hitting the glass
- Shade concrete and pavers next to windows and doors to prevent heat transferring inside when air temperature outside drops. Use pot plants, shade cloth, etc; remove in winter
- Use fans rather than an air conditioner, or use fans in conjunction with the air conditioner
- Fit security screens to windows and doors and ventilate the home overnight or when internal temperature exceeds external temperature, avoiding use of air conditioning systems
- Increase ventilation mechanically through switching on exhaust fans and/or by positioning a fan facing an opening to quickly replace the hot air inside with the cooler air outside. This can also be an effective pre-cooling practice prior to using air conditioning (ensure windows and doors are closed before switching on air conditioning)
- Only air condition rooms that are being used
- Set air conditioning timers for most efficient use and set thermostat as high as comfortable
- Shade air conditioners from direct sunlight, ensuring adequate air flow remains around the unit
- Check operating manual for evaporative cooling systems for most efficient practices
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Tips for hot water

- When it comes time to changing your HWS, replace your electric storage with a solar or heat pump
- For solar HWS, make sure the booster has a manual switch or can be put on a timer. Seek manufacturers advice to manage timers and boosters
- Wash clothes in cold water
- Avoid running water when brushing teeth, washing hands, rinsing dishes, etc
- Scrape food from plates, rather than rinse with water
- Purchase high WELS (Water Efficiency Labelling and Standards) rated appliances (shower-heads, washing machines, dishwashers) and tapware
- Shorten shower times
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Tips for clothes dryers, washing machines, dishwashers

- Dry clothes on washing line or indoor clothes horse in preference to using dryer
- If using a clothes dryer, partially dry clothes and/or choose maximum spin speed on washing machine before using dryer
- Separate synthetic (fast-drying) from natural-fibre clothing when drying in clothes dryer
- Run full loads in washing machine and dishwasher
- Avoid overloading clothes dryer and refer to manufacturer's directions
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Tips for lighting

- Use natural light where possible by opening curtains/blinds
- Switch off lights when leaving rooms, or consider motion sensor activated lighting where appropriate
- Use LED lighting where possible

- Replace down-lights with LED fixtures or fit covers to reduce heat escape during winter, heat entry during summer and fire hazard associated with down-lights and insulation
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Tips for fridges and freezers

- Size fridges and freezers to meet household requirements
- Turn off additional fridge/freezers when not required
- Keep fridge/freezer door seals clean
- Avoid placing hot items directly in fridge
- Check door seals on fridges and freezers. A \$ note should hold in place between seal and closed door
- Locate fridge away from heat sources and direct sunlight if possible
- Defrost freezer regularly if unit is not on auto-defrost. As an indicator, defrost when ice is 5mm thick
- For fridges with exposed rear coils, vacuum or wipe off dust to keep coils clean
- Using a thermometer, check that the temperature of the fridge and freezer and adjust fridge from 1 to 4 degrees and freezer minus 18 degrees to minus 20 degrees to maintain food safety standards.
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Tips for cooking

- Use electric appliances where possible, if sourced through renewable electricity
- Try to cook communally for the household, rather than cook individually

Stovetop

- (Gas) Avoid flame running up sides of pot
- (Elec) Use cookware on same sized elements
- Use lids on pots where practical to reduce heat loss
- Boil water in kettle or microwave, rather than on stovetop

Oven/griller

- Use smaller appliances (eg microwave, electric frypan, bench-top convection oven, etc) rather than electric oven
- Make sure oven seals are in good condition and seal well
- Use oven fan force if available and use light to check food, rather than opening the door
- Cook several meals in one session to avoid excessive oven usage
- Use toaster rather than griller

Microwave

- Use microwave rather than oven or stove-top where practical (eg steam vegetables)
- Defrost foods in refrigerator prior to cooking, rather than defrosting in microwave

Kettle

- Only boil required amount of water in kettle and only turn on when ready to use
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Tips for appliances / electronics

Power down when not in use

- Turn off at the power point
- Unplug chargers and transformers
- Turn off computers
- Set power saving options on laptops and computers so that screens and hard drives power down, rather than revert to screen saving mode

Choose efficient appliances

- Laptops can be more efficient than desk-top computers
- Choose LED or LCD screens over plasma screens
- Look into latest technologies: induction cook-tops, inverter refrigerators and microwaves, heat-pump dryers
- Where equipment cannot be conveniently turned off, look for standby power of 1 watt or less
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Appliance	Star rating	Annual running cost	Annual savings by using five-star model
Fridge	Three stars	\$106.44	\$43.33
	Five stars	\$63.11	
Television	Three stars	\$73.85	\$26.59
	Five stars	\$47.26	
Washing machine	Three stars	\$121.64	\$56.82
	Five stars	\$64.82	
Dishwasher	Three stars	\$73.74	\$37.61
	Five stars	\$36.13	
Dryer	Three stars	\$50.16	\$13.92
	Five stars	\$36.24	
<i>*All savings are indicative, based on an average Queensland electricity rate of 26.2 c/kWh and using the default sizes and number of uses as set by the Energy Rating Calculator for each appliance.</i>			= \$178.27 in total

Tips for food shopping

- Shop with local producers
- Support local family farms and avoid purchasing factory farmed animal produce
- Eat less meat and more vegetables
- Cook more meals using raw ingredients
- Purchase less pre-packaged food (A 1-litre plastic (PET) bottle has an embodied energy of roughly 5.4 MJ. This is the same as leaving a 15 W lightbulb on for 100 hours)
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Tips for pools and spas

- Solar pool heaters: Prevent birds from eating the black solar piping by placing a plastic or rubber toy snake near the piping
- Installing high efficiency pool pumps
- Reduce operating hours of filtration system if possible
- Clean pump filters regularly
- Use pool/spa covers to reduce evaporation
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Tips for home improvement

- Ceiling insulation: add to existing or replace to a minimum of R5 (5cm approx. = R1); don't forget to cover the manhole and around ceiling penetrations
- Double glaze all windows where possible. For a cheaper alternative, retrofit a secondary sheet of glass, perspex or transparent membrane to existing window frame.
- Seal gaps between walls, floors, ceilings, cornices & skirting using gap sealer or silicone. Fill large gaps with foam rod first.
- Fit weather-strip to all external doors and windows
- Fit covers to evaporative cooler ducts internally during winter or externally with an evaporative cover fit over the roof system.
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Tips for solar PV

- Consider installing solar photo-voltaic (PV) panels if roof not completely shaded. (Check e.g. <https://www.originenergy.com.au/solar/savings-calculator> to see how big a system you would need to meet your demand)
- Run appliances mostly through the day (consider timers) to maximize use of “free” electricity (unless on an early gross export tariff, when off peak consumption is cheaper)
- Consider installing a battery to allow use of generated electricity outside of daylight hours rather than purchasing from the utility at peak rates
- Charge your electric vehicle during daylight if possible; use as a battery on days when not driving
- If you have a non-solar electric hot water system, consult with a plumber about using excess solar energy to heat your hot water during the day (thermal bank).
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Compiled by Barbara Burns, with the help of Keith Baker, from the following sources:

ACT Sustainable Systems Owner/occupant Guide (<http://www.actss.com.au>)

ENERGY SMART WORKSHOP for ACT Homeowners (workbook hard-copy)

<https://efficiencymatrix.com/ecocool-tips/>

Data Sheet

Your Carbon Action Plan

(remember, this can be as simple as “I will cook pasta for two meals instead of just one”)

1)

2)

3)

Energy Use/Cost Before

Energy Use/Cost After

Electricity:

Gas:

Petrol:
(approx/month)

Results from Australian Greenhouse Calculator

Before

After

Total CO2:
