



Emissions Reduction Fact Sheet - Buildings

Homes and businesses contribute to approximately 40% of emissions within the City of Charles Sturt, associated with gas and electricity consumption. Residents and business owners can have a meaningful impact on community emissions reduction through the following key initiatives:

1. Improving energy efficiency of the building

The walls, floors and roof provide an important barrier to restricting undesirable outside temperatures into buildings, reducing the need for heating and cooling, and in turn improving the efficiency of air conditioning and heating while running.

Draught Sealing

Providing weather seals to external doors and windows, such as sweep seals and adhesive foam, and sealing up gaps and cracks in the building's construction with caulking will limit unintentional air movement, which can cause up to 25% of winter heat loss.

Insulation

Insulation will restrict temperature movement and should be installed in all ceilings, external walls and floors, wherever access allows and to the highest level (R-Value) possible to maximise impact. Old insulation may no longer be effective and may need to be replaced.

Windows and Shading

Installing external shading such as blinds and awnings to windows can reduce summer heat gain, while replacing old windows with double glazing will improve the comfort and efficiency of the building all year round.

2. Transitioning gas appliances and services to all-electric alternatives

Extracting and burning gas creates greenhouse gases that contribute to climate change. Gas is a fossil fuel, in which the main component is methane, a greenhouse gas nearly 100 times more potent than carbon dioxide in the short term. Transitioning homes and businesses to all-electric operation, divesting from gas infrastructure, will reduce emissions and also allow for 100% renewable energy operation. Space heaters and hot water services will have the largest impact on emissions reduction, whilst also reducing energy consumption and running costs.



highest gas usage ----- ► lowest gas usage

Space Heating

Gas space heaters pose health risks if not properly flued and are inefficient forms of heating. These can be replaced by electric reverse cycle ducted or wall mount (split) systems.

Low-Cost Quick Wins

- Retrofit ceiling insulation, R4.0 or higher
- Install external shading on windows
- Install ceiling fans
- Provide draught sealing on doors, windows and caulk gaps in construction
- Install water efficient taps and showerheads (high WELS ratings)



Hot Water Service

Water heating can be swapped for efficient electric heat pump or solar electric boosted systems. Heat pump systems are roughly three times more efficient than conventional electric resistance systems and even more efficient than gas instantaneous systems.

Cooking

Gas cooking is often the last barrier to complete electrification however induction cooking is more than twice as energy efficient as gas, is safer, and mitigates health impacts, such as asthma, associated with gas appliances.

EXAMPLE: Replace inefficient electric resistance or gas hot water service with high efficiency electric heat pump.

Cost: \$4,000 - \$6,000 (depending on system quality, current set up, i.e. disconnection of gas infrastructure)

Emissions Reduction: Approx. 0.36t CO₂-e per annum per household. Up to 9,925t CO₂-e per annum for the entire council area should all homes and businesses make the switch.



More Resources

Your Home – Australia’s Guide to Environmentally Sustainable Homes

<https://www.yourhome.gov.au/>

Rewiring Australia

<https://www.rewiringaustralia.org/>

Sustainable House Day

<https://sustainablehouseday.com/>

SA Government Energy Advisory Service

<https://www.sa.gov.au/topics/energy-and-environment/energy-advice-and-education/energy-advisory-service>

Renew E-Books on Sustainable Living

<https://renew.org.au/what-we-do/publications/>

Energy Rating / Water Rating

<https://www.energyrating.gov.au/>

<https://www.waterrating.gov.au/>

My Cool Home – Adapt West

<https://www.adaptwest.com.au/my-cool-home>

Make the Switch

<https://maketheswitch.org.au/how-to-switch/>

Canstar Blue – Energy Connection & Disconnection Fee Explained

<https://www.canstarblue.com.au/gas/connection-disconnection-charges/#disconnection>

Nationwide House Energy Rating Scheme (NatHERS)

<https://www.nathers.gov.au/>

