



A Beyond Zero Future
for South East NSW

Climate Action in Wollongong

About Wollongong—Dharawal Country

Industries—health care and social assistance, education, retail, construction, hospitality, public administration, professional, scientific and technical services, manufacturing, transport

Population—219,798. Emissions—12.5 t CO₂ per person p.a.

Residences—70,453 (2020). Emissions per residence—5t CO₂ p.a.

Current emissions profile (from [Snapshot 2019](#))

- 67% of emissions from electricity use, industrial, residential, commercial
- 19% of emissions from road transport
- 12% from gas use, industrial, commercial, residential

Home solar installs to 2020—14,817 (new installs in 2020—2,702)

Tackling Energy First

Wollongong City Council declared a Climate Emergency in August 2019. They provide a [quarterly update](#) on action.

[Wollongong Climate Action Network \(WCAN\)](#) is a local community group, open to all, which formed in Wollongong and the Illawarra in November 2006. It aims to:

- Enable people to take individual and collective action
- Exert influence at all levels of government to take action
- Put climate change on business and community group agendas

In Wollongong, Zero by 2050 targets require halving our CO₂ emissions by 2030. This means:

- Keep installing about 2,500 residential rooftop PV p.a. to move from 22% to over 50% of roofs with solar by 2030
- Continue to build renewable energy in commercial and industrial sites, aiming for 50% renewables by 2030

Payback period for residential rooftop solar is 4—6 years, saving about \$1000 p.a. — much more with an electric vehicle.

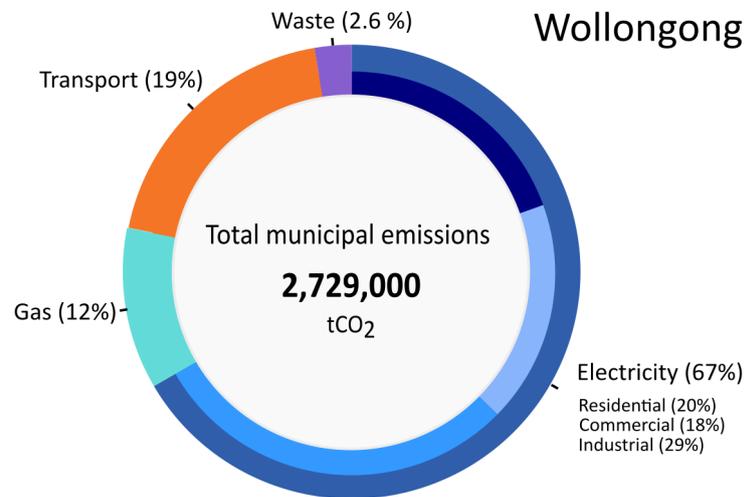
[Clean Energy Council](#) publishes consumer guides: choose approved local retailers and accredited installers.

Home Energy Retrofits

An average retrofit without roof-top solar costs \$11,000 and:

- cuts bills and emissions by 40%
- pays back within 7 years
- makes you \$23,000 better off over 20 years

Adding a 5kW roof-top solar costing \$5,000 to this retrofit:



- cuts emissions by 65%
- makes you \$27,000 better off over 20 years

The most effective measures are roof-top solar, low-flow showers, reverse cycle heating/cooling, heat pump hot water, ceiling insulation and draught sealing.

Retrofitting 5% of homes in the Wollongong each year would see a 50% cut in total residential energy use by 2030.

Transport—Electric Vehicles are Great to Drive

- Running costs up to 85% lower than a conventional car
- Roof-top solar plus EV will typically save you \$4000 a year
- See [NSW Electric Vehicle Strategy](#) for more incentives
- EVs have been more expensive than their petrol/diesel equivalent but this gap is closing fast
- Fast charging infrastructure is growing

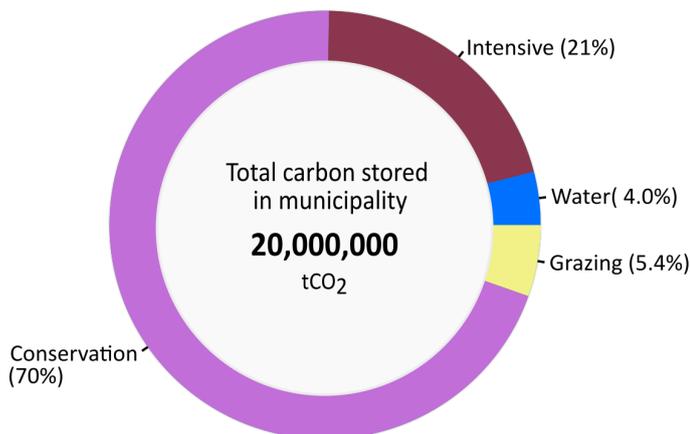
E-bikes are great for distances up to 15km.

What Else is Needed?

Commercial and industrial installations of rooftop PV are the biggest local growth opportunity for renewable energy.

- Get behind the [#RePowerOurCommunities](#) campaign.
- Ask federal, state and local government to enable community scale projects - solar farms, batteries and microgrids.
- Expect clear targets for emission reductions and technology uptake, and hold governments and companies accountable.
- Share information and stories about the benefits of transitioning to a low carbon economy.
- Look for business and job opportunities in local clean energy technologies.

Wollongong - Current Land Use



[References](#)

Carbon Wealth in Farms and Trees

Across Australia, agriculture is key to solving the climate crisis. South East NSW is well placed to implement solutions including drawdown of carbon through changed farming practices and retaining the vast store of carbon in soils and trees. Wollongong is rich in trees—63% is forest or woodlands. Relatively little of Wollongong’s land is used for grazing, while its industries and urban settlements present other challenges.

Soil

Soil contributes to climate solutions through carbon drawdown into organic matter and avoiding disturbance.

If 10% of Wollongong farmers oversow their perennial pastures with legumes and practise optimal grazing methods, this would draw down 1,200 tonnes of CO₂ each year and earn \$96,000 p.a. on the international carbon market.

Retaining 1% of Wollongong perennial pasture each year would save 5,000 tonnes of CO₂.

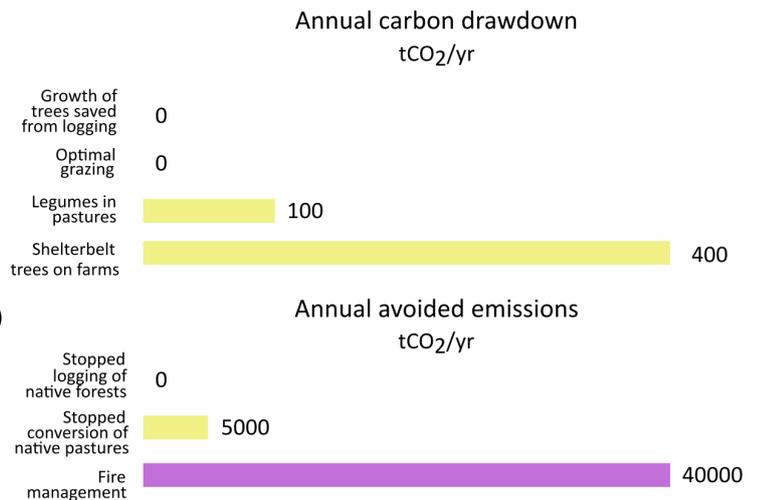
Planting Trees

One hectare of farm land planted with trees draws down 3.7 tonnes of CO₂ p.a.

Wollongong has 3,700 hectares of cleared farm land available for trees. If 10% of this was planted with trees in shelterbelts, ridgelines and creeklines, (1% p.a. for 10 years), it would draw down 3,400 tonnes of CO₂ into trees and another 300 tonnes into soil, earning local farmers \$300,000 on the international carbon market.



With 1% Land Use Change



Keeping Trees

Keeping healthy trees in the ground is a powerful strategy for carbon storage. Mature trees store far more each year than even rapidly growing saplings, particularly the largest trees. That means leaving significant trees on farms, in the forest and in towns (urban forest) is an essential part of a carbon wealth strategy, as is responsible fire management in its very extensive forests.

What are the Barriers?

- Low domestic carbon price of \$16/tCO₂, well below international price of \$80/tCO₂
- Lack of strong regulatory frameworks, tax incentives and subsidies for participation in the carbon market
- Lack of just transition funding for forest industry restructure from logging to carbon trading
- High start-up costs of trees on farms
- Complexity and cost of carbon marketing
- For methane emissions, limited current availability of *Asparagopsis* supplement

More Reasons to Act Now

- Environmental benefits of moisture retention, soil health, erosion-proofing, animal well-being, biodiversity, sustained productivity and drought resilience
- Diversification of on-farm income, on-farm long-term financial dividends and investment in ‘natural capital’
- Business and job opportunities in carbon drawdown, conservation and nature-based tourism
- Wollongong City Council formally adopted a [Climate Change Adaptation Plan](#) in March 2022 to address risks of excessive heat, storm, rainfall and flooding linked to climate change.