fact sheet

A Beyond Zero Future for South East NSW

Climate Action in Queanbeyan-Palerang

About Queanbeyan-Palerang — Ngunnawal and Ngambri Country

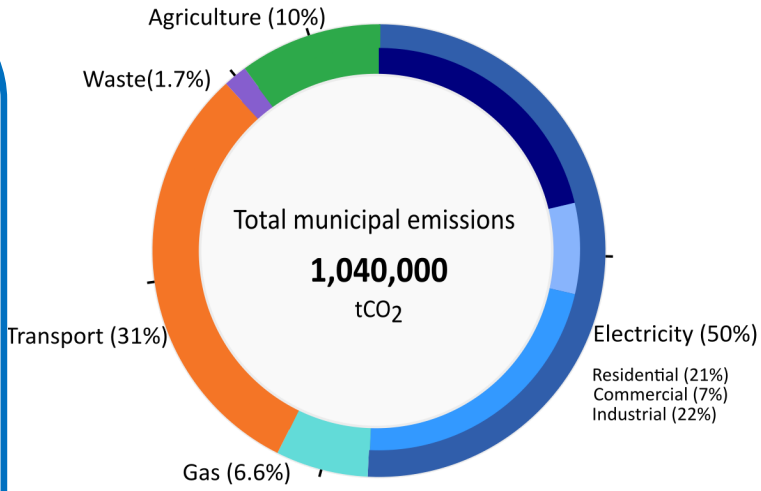
Population—**61,000 (Snapshot), 17 t CO_2 per person p.a.**

Number of Residences (2019 estimated)—25,231, 9.4 t **CO_2 per residence**

Industries— Construction, Public Administration & Safety, Health Care and Social Assistance, Manufacturing and Agriculture.

Current energy profile (from Snapshot)

- 50% of emissions from electricity use
- 31% of emissions from transport
- Home solar installs to 2020—2566
- New installations 2020—340



Tackling Energy First

Community energy provides more resilient networks, local ownership of generation and cost savings. In Queanbeyan-Palerang, zero by 2050 targets require at least halving our CO_2 emissions by 2030. **Currently, rooftop PV in QBN PAL produces about 7% of consumption, compared to a regional average of 9-15%, and 37% in Yass Valley. This means to achieve our target reduction:**

- Increasing current residential rooftop PV installations from 340 to 1340 installs p.a
- Doubling commercial & industrial installations to 1260 by 2030 (630 in 2020)

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

The 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:

- 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 just 5% of homes in the area 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.

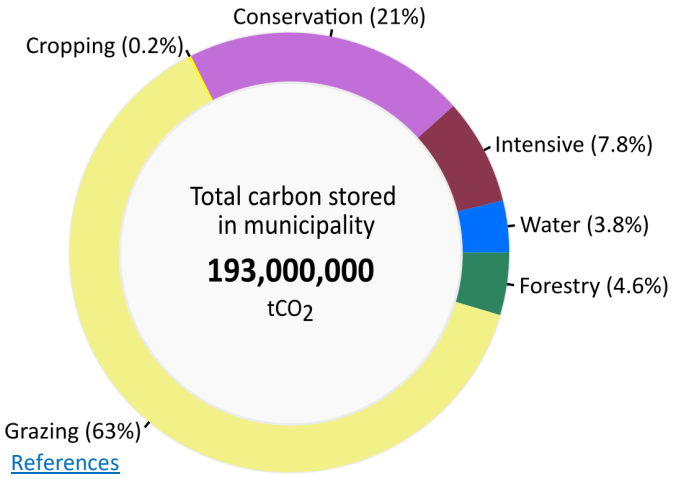
What Else is Needed?

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

In Queanbeyan-Palerang, Queanbeyan Sustainability Group makes a difference through community solar projects for businesses and householders including: community gardens, energy efficiency and water conservation, sustainable transport, waste reduction and investigating community power generation. Residents can also:

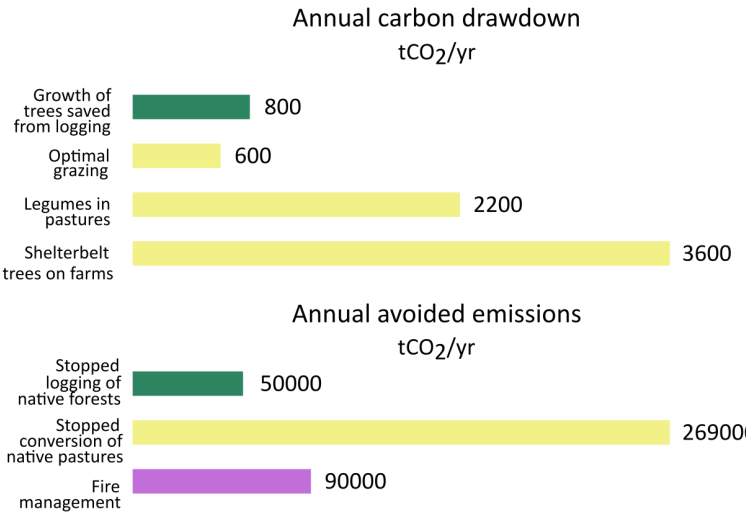
- Get behind the #RePowerOurCommunities campaign
- Ask federal, state and local government to enable community scale projects - solar farms, batteries and microgrids
- Expect clear targets for emission reductions and technology uptake, & hold governments & companies accountable
- Share information and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

Queanbeyan-Palerang - Current Land Use



References

With 1% Land Use Change



Carbon Wealth in Farms and Trees

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. Queanbeyan Palerang (QP) is rich in trees with 40% forest or woodlands.

Livestock

Methane (CH_4) emissions from burping livestock are a major contributor to world greenhouse gases. In QP, 8.6% of all emissions are from livestock, mostly beef cattle and sheep.

If 10% of QP graziers supplemented their animals' diet with *Asparagopsis* seaweed, 7,600 tonnes of CO_2 would be avoided annually, worth $600,000 on the international carbon market.

Soil

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

If 10% of QP farmers oversow perennial pastures with legumes and practise optimal grazing methods, this would draw down 27,600 tonnes of CO_2 each year and earn $2.2 million per annum on the international carbon market.

Retaining 1% of QP's perennial pasture each year would avoid 269,000 tonnes of CO_2 emissions.

Planting Trees

One hectare of farm land planted with trees draws down 3.7 tonnes of CO_2 p.a.

QP has 97,000 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 33,600 tonnes of CO_2 into trees and another 2,700 tonnes into soil, earning farmers $2.9 million on the international carbon market and injecting 70 local jobs for 10 years.

Keeping Trees

Accessible urban green spaces are essential for well-being, contributing to improved mental health, reduced cardiovascular morbidity and mortality, obesity, type 2 diabetes, and improved pregnancy outcomes. *(Urban green spaces and health. Copenhagen: WHO Regional Office for Europe, 2016.)* Mature trees in such spaces make a major contribution to CO_2 capture and storage. They also combat the urban heat island effect. If logging in Queanbeyan Palerang's 21,858 ha of native forests ceased, 50,443 tonnes of CO_2 emissions would be avoided annually**. This is equivalent to 5% of the total annual shire emissions (1,040,000 tonnes of CO_2) from electricity, transport, waste and agriculture.**

What are the Barriers?

- Low domestic carbon price of $16/$tCO_2$, well below international price of $80/$tCO_2$
- 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 cost of tree planting 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 & job opportunities in carbon drawdown, conservation and nature-based tourism