A Beyond Zero Future for South East NSW

# Climate Action in Yass Valley

## About Yass Valley — Ngunnawal Country

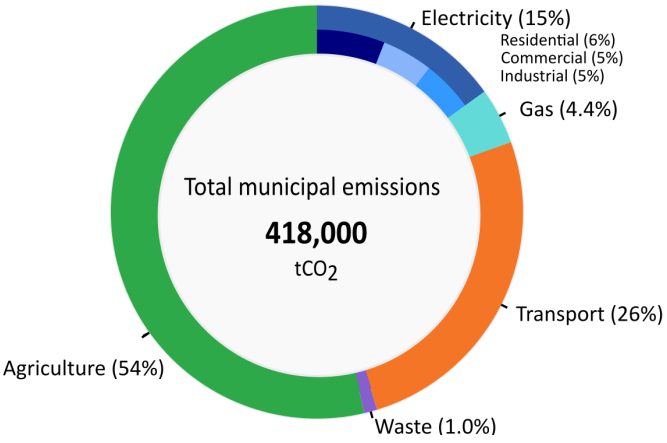
Population—**17,087 (snapshot)**

Number of Residences (2019 estimated)—6,783. Emissions per residence—12t $CO_2$ p.a.

Industries—government, agriculture particularly sheep grazing, and education.

### Current energy profile (from Snapshot)

- **54% of emissions from agriculture**
- 26% of emissions from on road transport
- 15% from electricity
- Solar installations (2019) 1,996
- Installations each year—280 (2020)




## 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.

## Tackling Energy Emissions

Yass Valley electricity emissions are shared between residential, commercial and industrial users. To reduce these emissions, all three groups will benefit from Community energy generation. This provides more resilient networks, local ownership of generation and cost savings.

In Yass Valley, Zero by 2050 targets require halving our $CO_2$ emissions by 2030. This means:

- maintaining home rooftop PV installations of at least 280 p.a to reach 53% of residential roofs by 2030 (currently well above average at 37%). Add 140 commercial & 40 industrial installs by 2030.
- continuing investment in renewable energy generation throughout the renewable energy zone.

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: use these to 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

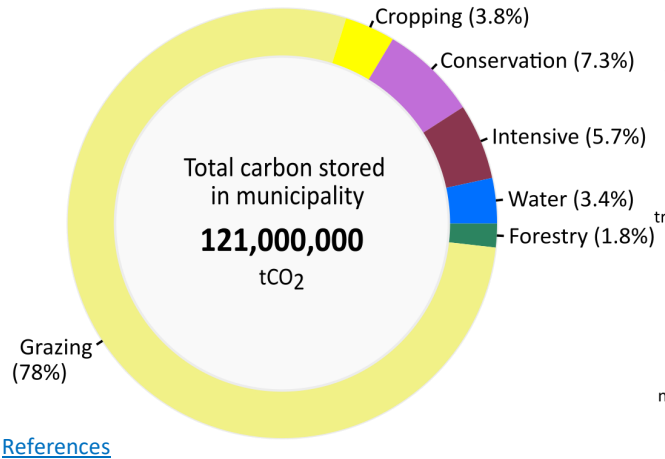
The most effective measures are roof-top solar, low-flow showers, reverse cycle heating/cooling, heat pump hot water, ceiling insulation and draught sealing. Retrofitting 5% of homes in the Yass Valley each year would see a 50% cut in total residential energy use by 2030.

## What Else is Needed?

Yass Valley residents have strongly adopted residential PV installations which produce approximately 37% of local consumption, compared to a state average of 9-15%. Commercial & industrial installations of rooftop PV, and transition to electric vehicles are the biggest local opportunity for renewable energy in Yass Valley.

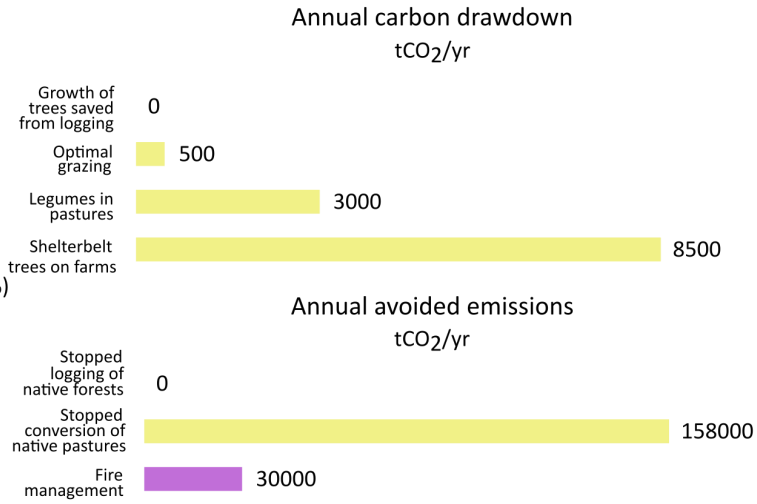
- Get behind the #RePowerOurCommunities campaign
- Ask government to enable community projects - solar farms, batteries and microgrids
- Expect clear targets for emission reductions and technology uptake, and hold governments and companies accountable
- Share information & stories about the benefits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

## Yass Valley - Current Land Use




References

## With 1% Land Use Change




## Carbon Wealth in Farms and Trees

At 54% of Shire emissions, agriculture can help to solve the climate crisis, particularly in the Yass Valley. 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. Yass Valley is rich in trees with 27% forest or woodlands.

## Livestock

Methane ($CH_4$) emissions from burping livestock are a major contributor to world greenhouse gases. Scientists have found that the common Australian red seaweed (*Asparagopsis*) virtually eliminates methane emissions in cattle and sheep when fed as a dietary additive in low doses. In Yass Valley, 54% of all emissions are from agriculture, 21% from livestock. If 10% of Yass Valley graziers supplemented their animals' diet with *Asparagopsis* seaweed, 7,500 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 Yass Valley farmers oversow perennial pastures with legumes and practise optimal grazing methods, this would draw down 35,200 tonnes of $CO_2$ each year and earn $2.8 million per annum on the international carbon market.

Retaining 1% of Yass Valley's perennial pasture each year would avoid 158,000 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.

Yass Valley has 239,000 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 78,200 tonnes of $CO_2$ into trees and another 6,400 tonnes into soil, earning farmers $6.8 million on the international carbon market and potentially supporting 170 local jobs for 10 years.

## 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 trees in the forest, towns and on farms is an essential part of a carbon wealth strategy.

## 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 costs 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, long-term financial dividends and investment in 'natural capital'