**A Beyond Zero Future
for South East NSW**

Climate Action in Snowy Monaro

About Snowy Monaro—Ngarigo Country

Industries—grazing, tourism, accommodation, food & retail services, forestry & wood products

Population—20,795. Emissions—35t CO_2 per person p.a.

Residences—11,786 (2016) Emissions per residence—7.8t CO_2 p.a.

Current emissions profile (from Snapshot 2019)

- Agriculture is largest emitter at 348,000 tonnes, (46%)
- 32% of annual emissions from electricity—233,000 tonnes CO_2e Target—reduce to 126,000 tonnes by 2030
- 20% of emissions from road transport
- Home solar installs to 2020—2,064 (new installs in 2020—306)

Total municipal emissions
736,000
tCO_2

Agriculture (46%)
Electricity (32%)
Residential (12%)
Commercial (8%)
Industrial (12%)
Gas (1%)
Transport (20%)
Waste (1%)

Tackling Energy First

Community energy provides more resilient networks, local ownership of generation and cost savings.

In Snowy Monaro LGA, Climate Action Monaro is making a difference by supporting:

- Electric vehicle demonstration days
- Town meetings, political engagement and awareness raising
- Community solar farm development

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

- Increase rooftop solar photovoltaic (PV) installations from 306 to 460 installs p.a to reach 56% of residences by 2030.
- Increase commercial & industrial uptake from 160 (2019) installations to 580 by 2030

Payback period for residential solar PV is 4 to 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:

- cuts bills and emissions by 40%
- pays back within 7 years
- makes you $23,000 better off over 20 years
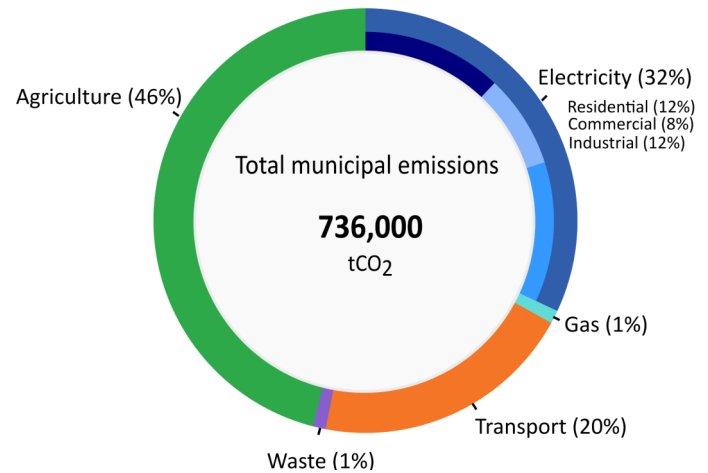
Adding a 5kW roof-top solar costing $5,000 to this retrofit:

- 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 Snowy Monaro 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
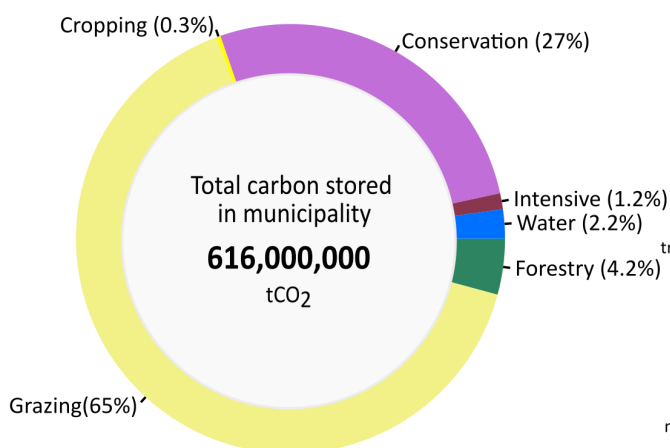- Fast charging infrastructure is growing

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

What Else is Needed?
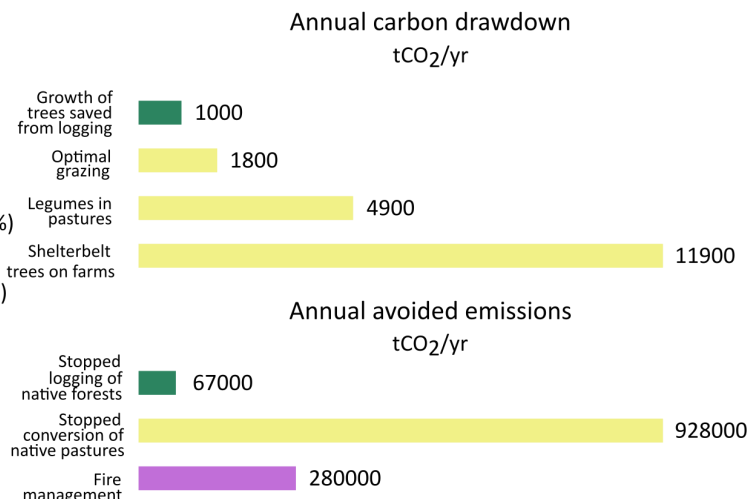
Commercial and industrial installations of rooftop PV are the biggest local growth opportunity for renewable energy .

- 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 & technology uptake, and 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.

28/03/2022

Snowy Monaro - Current Land Use

Cropping (0.3%)

Conservation (27%)

Total carbon stored in municipality

616,000,000

tCO_2

Intensive (1.2%)

Water (2.2%)

Forestry (4.2%)

Grazing(65%)

References

With 1% Land Use Change

Annual carbon drawdown
tCO_2/yr

Growth of trees saved from logging	1000
Optimal grazing	1800
Legumes in pastures	4900
Shelterbelt trees on farms	11900

Annual avoided emissions
tCO_2/yr

Stopped logging of native forests	67000
Stopped conversion of native pastures	928000
Fire management	280000

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. Snowy Monaro is rich in trees with 54% of it covered in forests or woodlands, and 65% used for grazing.

Livestock

Methane (CH_4) emissions from burping livestock are a major contributor to world greenhouse gases. In the Snowy Monaro, 35% of all emissions are from livestock.

If 10% of farmers supplemented their animals' diet with *Asparagopsis* seaweed, 21,600 tonnes of CO_2 would be avoided annually, worth $1.7 million on the international carbon market.

Soil

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

If 10% of Snowy Monaro farmers sowed their perennial pastures with legumes and practised optimal grazing methods, this would draw down 67,000 tonnes of CO_2 each year and earn $5.4 million per annum on the carbon market.

Retaining 1% of local perennial pasture to fodder crops each year would save 900 thousand tonnes of CO_2.

Planting Trees

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

The Snowy Monaro has 320,000 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 110,000 tonnes of CO_2 into trees and another 9,000 tonnes into soil, earning farmers $9.5 million on the international carbon market and injecting 220 local jobs for 10 years.

Keeping Trees

If logging in Snowy Monaro's 29,000 ha of native forests ceased, 67,000 tonnes of CO_2 emissions would be avoided annually, potentially generating $5.4 million on the international carbon market. **This is equivalent to 16% of annual shire emissions 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 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. On-farm long-term financial dividends and investment in 'natural capital'
- Business and job opportunities in carbon drawdown, conservation and nature-based tourism

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