



A Beyond Zero Future
for South East NSW

Climate Action in Shoalhaven

About Shoalhaven— Yuin Country

Industries— manufacturing, government (defence), retail & tourism, construction, community services, education.

Population—105,648 Emissions—13t CO₂ per person p.a.

Residences—56,291 (2016). Emissions per residence—5.7t CO₂ p.a.

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

- 59% of emissions from electricity use in households and industry, 22% of emissions from transport, mostly cars, 11% from gas
- Home solar installs to 2020—12,170 (new in 2020—2,030)

Tackling Energy First

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

In Shoalhaven LGA, [Repower Shoalhaven](#) makes a difference through community solar projects for businesses and householders including:

- Building community photovoltaic (PV) solar installations
- Facilitating commercial installations and energy efficiency
- 3MW Solar Farm in Nowra, with Flow Power.

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

- Increasing current residential rooftop PV installations from 2000 to 2250 installs p.a to 2025 to reach 53% of residential roofs by 2030.
- Increase commercial & industrial installations to 1700 by 2030 (650 in 2019) - Repower is working with installers, Council and business to get power savings and create jobs.

Payback period for residential solar 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.

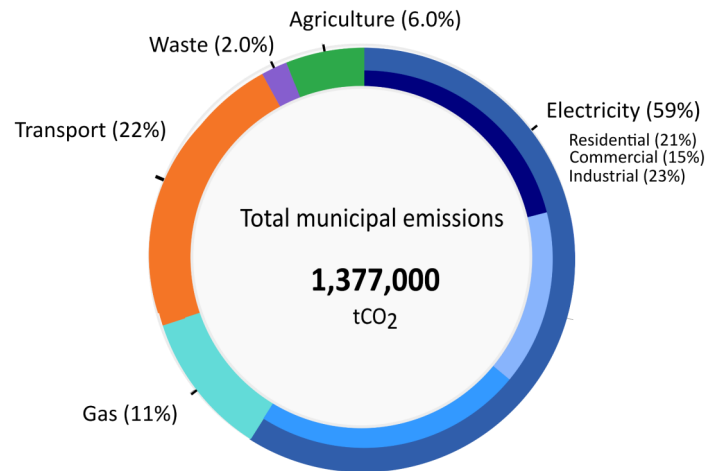
Home Energy Retrofits

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 Shoalhaven 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

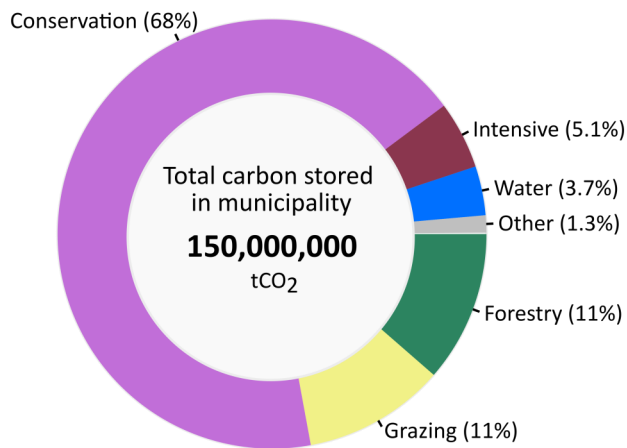
E-bikes are great for distances up to 15km.

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 & job opportunities in local clean energy technologies

Shoalhaven - Current Land Use



References

Carbon Wealth in Farms and Trees

Agriculture is key to solving the climate crisis. South East NSW is well placed to implement solutions including draw-down of carbon through changed farming practices and retaining the vast store of carbon in soils and trees. Shoalhaven is rich in trees with 66% forest or woodlands.

Livestock

Methane (CH₄) emissions from burping livestock are a major contributor to world greenhouse gases. In Shoalhaven, 2% of all emissions are from livestock.

If 10% of Shoalhaven farmers supplemented their animals' diet with *Asparagopsis* seaweed, 2,000 tonnes of CO₂ would be avoided annually, worth \$160,000 on the international carbon market.

Soil

Soil contributes to climate solutions through carbon draw-down into organic matter and avoiding disturbance.

If 10% of Shoalhaven farmers oversow perennial pastures with legumes and practise optimal grazing methods, this would draw down 7,400 tonnes of CO₂ each year and earn \$600,000 per annum on the international carbon market.

Retaining 1% of Shoalhaven's perennial pasture each year would avoid 29,000 tonnes of CO₂ emissions.

Planting Trees

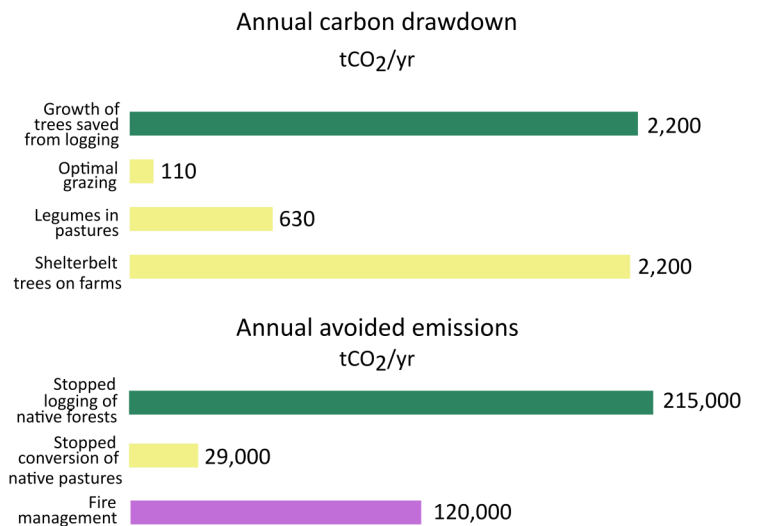
One hectare of farm land planted with trees draws down 3.7 tonnes of CO₂ p.a.

Shoalhaven has 48,000 hectares of cleared farm land available for trees.

If 10% of this was planted with trees in



With 1% Land Use Change



shelterbelts, ridgelines and creeklines, (1% p.a. for 10 years), it would draw down 20,000 tonnes of CO₂ into trees and another 1,600 tonnes into soil, earning farmers \$1.7 million p.a. on the international carbon market and injecting 5 local jobs for 10 years.

Keeping Trees

If logging in Shoalhaven's 52,000 ha of native forests ceased, 215,000 tonnes of CO₂ emissions would be avoided annually, potentially generating \$17 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/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
- For tree planting on farms, start-up costs are high
- Carbon marketing is complex and costly
- 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