



A Beyond Zero Future
for South East NSW

Climate Action in Shellharbour

About Shellharbour—Dharawal Country

Industries—health and social assistance, manufacturing, retail

Population—68,460. Emissions—9.7t CO₂ per person p.a.

Residences—26,424. Emissions per residence—25t CO₂ p.a.

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

- 62% of emissions from electricity use in homes and businesses
- 24% of emissions from road transport

Home solar installs to 2020—7,049 (new installs in 2020—1339)

Tackling Energy First

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

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

- Keep installing at least 1000 residential rooftop PV p.a. to move from 30% to over 50% of roofs with solar by 2030
- Increase commercial and industrial uptake to 1030 by 2030, creating local jobs, reducing costs and saving power

The 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.

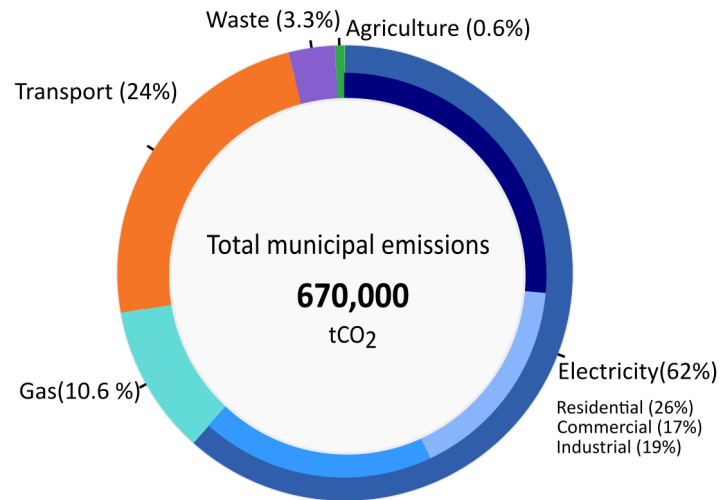
Home Energy Retrofits

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

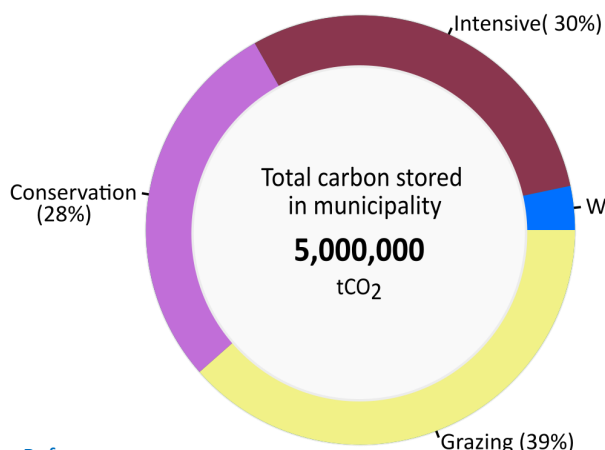
E-bikes are great for distances up to 15km.

What Else is Needed?

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

- Subscribe to the [Sustainable Shellharbour](#) newsletter
- 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.

Shellharbour - 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. Shellharbour is rich in trees—62% is forest or woodlands.

Livestock

Methane (CH₄) emissions from burping livestock are a major contributor to world greenhouse gases. In Shellharbour, only 0.7% of all emissions are from livestock, but if just 10% of Shellharbour farmers supplemented their animals' diet with *Asparagopsis* seaweed, 400 tonnes of CO₂ emissions would be avoided annually, equivalent to 16 houses' emissions.

Soil

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

If 10% of Shellharbour farmers oversow their perennial pastures with legumes and practise optimal grazing methods, this would draw down 1,900 tonnes of CO₂ each year and earn \$152,000 p.a. on the international carbon market.

Retaining 1% of Shellharbour perennial pasture each year would save 6,000 tonnes of CO₂.

Planting Trees

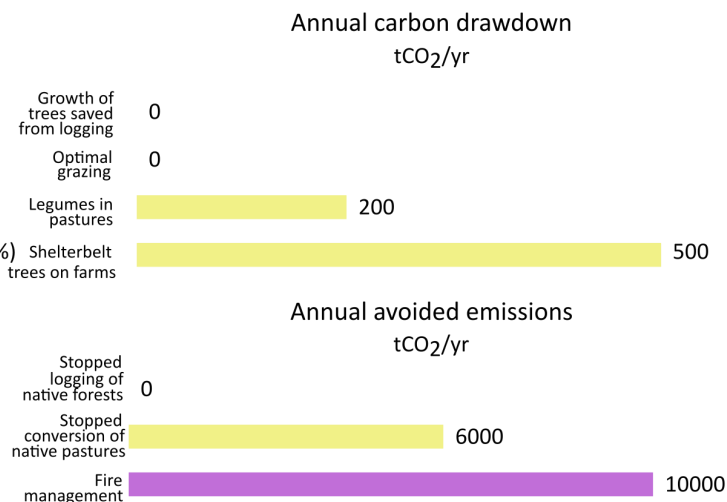
One hectare of farm land planted with trees draws down 3.7 tonnes of CO₂ p.a.

Shellharbour has 5,633 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 5,400 tonnes of CO₂ into trees and soil, earning local farmers \$432,000 on the international carbon market.

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.

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
- More liveable homes, towns and cities