A Beyond Zero Future for South East NSW

Climate Action in Kiama

About Kiama— Dharawal Country

Population—23,386

Number of residences—9,530. Emissions per residence 11.9tCO_2 p.a.

Industries— construction, professional services, agriculture, health care, retail, real estate.

Current energy profile (from Snapshot 2019)

- 51% of emissions from electricity use
- 36% of emissions from on road transport
- Solar installations to 2020—2629
- Installations new in 2020—435

Tackling Energy First

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

In Shoalhaven and nearby LGAs, Repower Shoalhaven makes a difference through community solar projects for businesses and householders including:

- Facilitating commercial photovoltaic (PV) solar and battery and energy efficiency initiatives, working with Mondo and Flow Power, Council, and local solar providers
- A 3MW Solar Farm in Nowra, with Flow Power—more community solar farms are being developed in the region

In Kiama, Zero by 2050 target requires halving our CO_2 emissions by 2030. This means:

- Increasing residential PV installations each year to reach at least 53% of residences by 2030
- Increasing commercial and industrial installations to 410 by 2030 (110 in 2020) creating jobs and saving power

Endeavor Energy will build a community battery storage facility for solar connected homes in Kiama Downs.

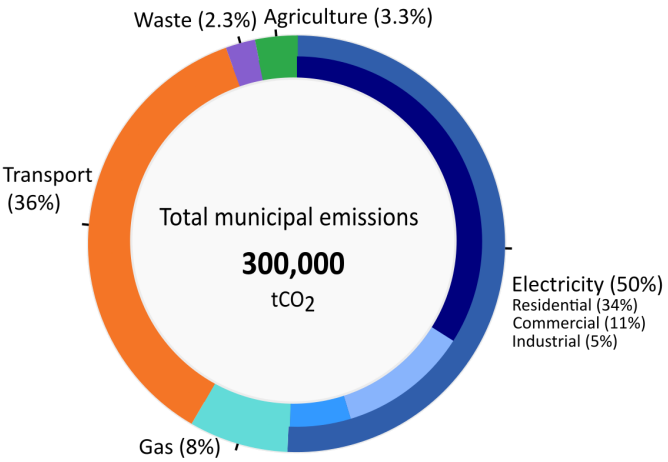
The technology is quick and easy to install, and will save people thousands of dollars. It replaces the need for many behind-the-meter batteries in homes.

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 Kiama each year would see a 50% cut in total residential energy use by 2030. 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.

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

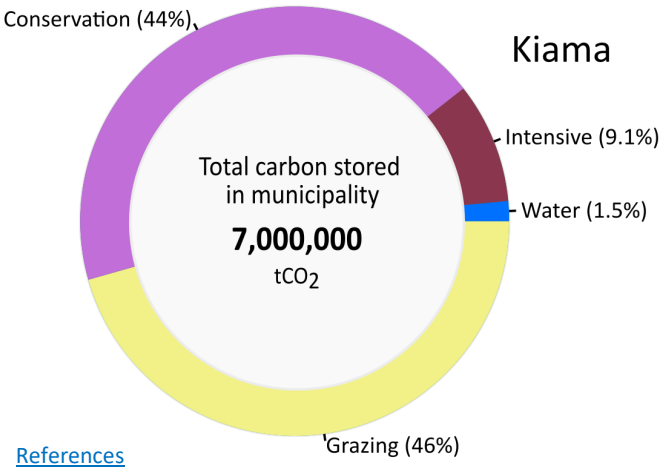
E-bikes are great for distances up to 15km.

What Else is Needed?

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

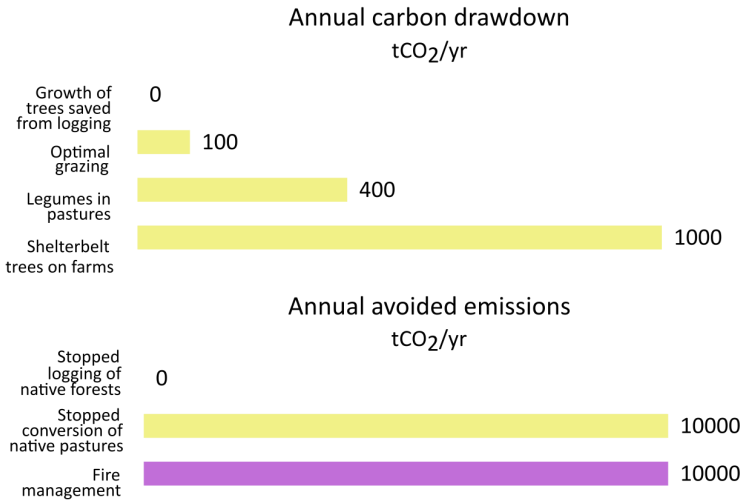
- Get behind the #RePowerOurCommunities campaign
- Ask federal, state and local government to enable community scale projects - solar farms, batteries and microgrids
- Expect clear targets for emission reductions & technology uptake, and hold governments & companies accountable
- Share information and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

Kiama - Current Land Use



References

With 1% Land Use Change



Carbon Wealth in Farms and Trees

In Australia, agriculture is one 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. Kiama has limited agriculture, but is rich in trees, considering its small area, 41% of which is forest or woodland.

Livestock

Methane (CH_4) emissions from burping livestock are a major contributor to world greenhouse gases. In Kiama, 3.6% of all emissions are from livestock.

If 10% of Kiama graziers supplemented their animals' diet with *Asparagopsis* seaweed, 900 tonnes of CO_2 would be avoided annually, worth $100,000 on the international carbon market.

Soil

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

If 10% of Kiama farmers oversow perennial pastures with legumes and practise optimal grazing methods, this would draw down 4,500 tonnes of CO_2 each year and earn $360,000 per annum on the international carbon market.

Retaining 1% of Kiama's perennial pasture each year would avoid 10,000 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.

Kiama has 10,062 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 9,200 tonnes of CO_2 into trees and another 800 tonnes into soil, earning farmers $800,000 on the international carbon market and injecting 10 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 significant trees on farms, in the forest and in towns 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
- Cost and complexity 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