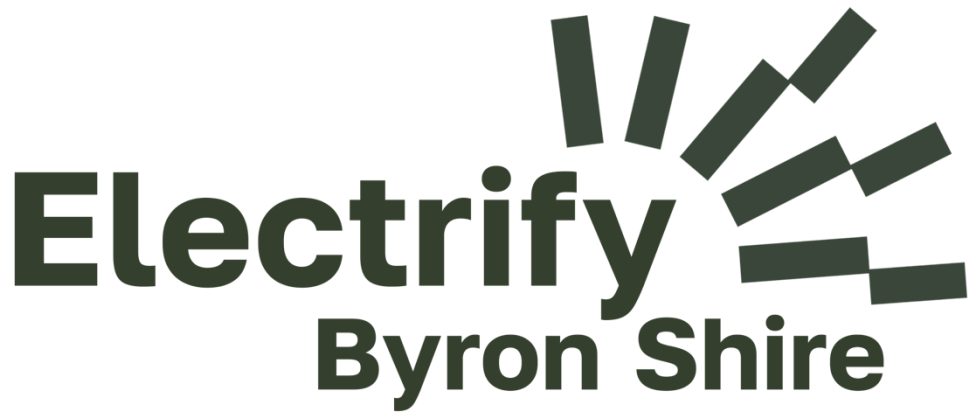
Can I persuade you?

The transition to renewable energy

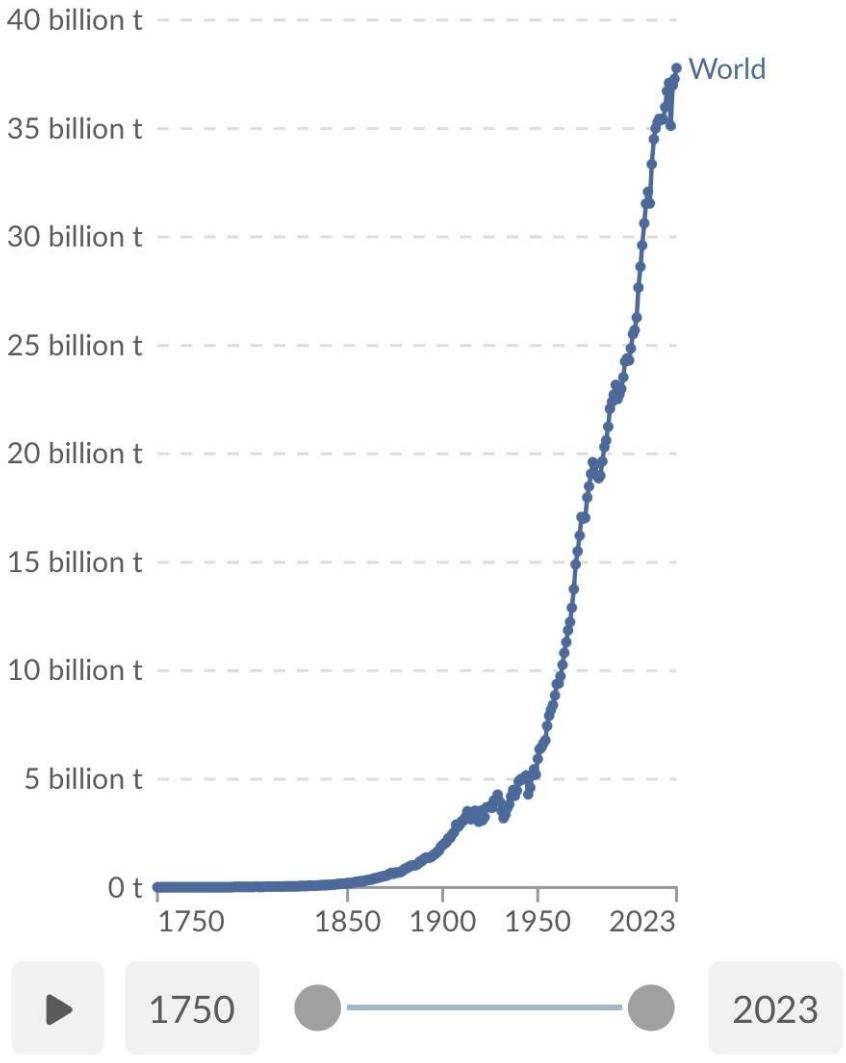

Electrify
Byron Shire

The IPCC has predicted that sea levels could rise by 0.84 metres by 2100, if high carbon emissions continue.

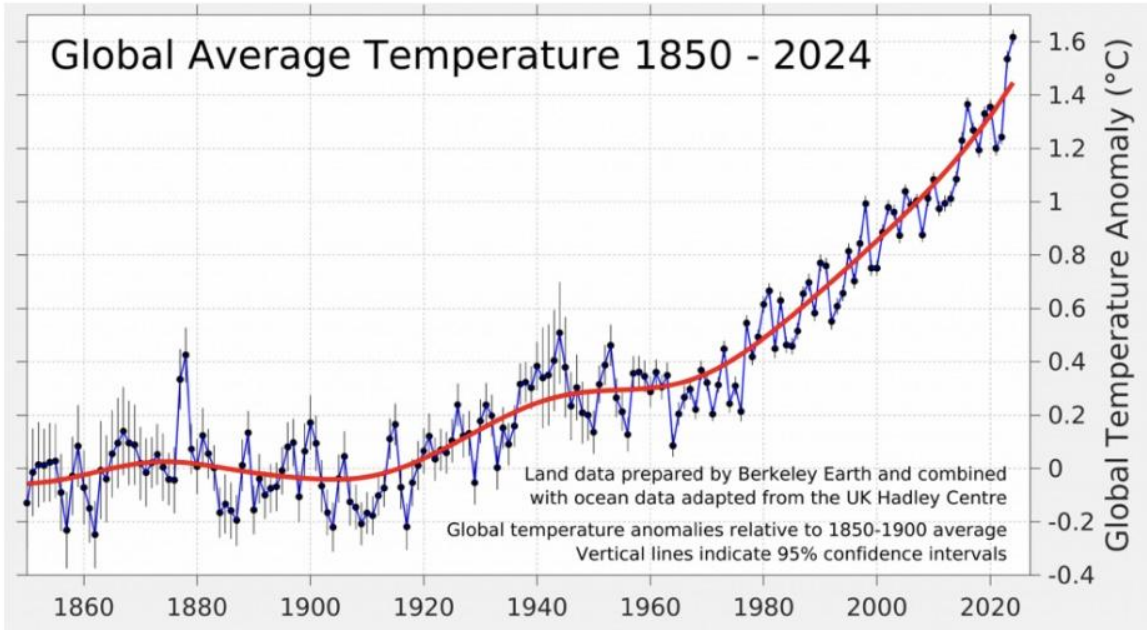
Annual CO_2 emissions

Our World in Data

Carbon dioxide (CO_2) emissions from fossil fuels and industry. Land-use change is not included.

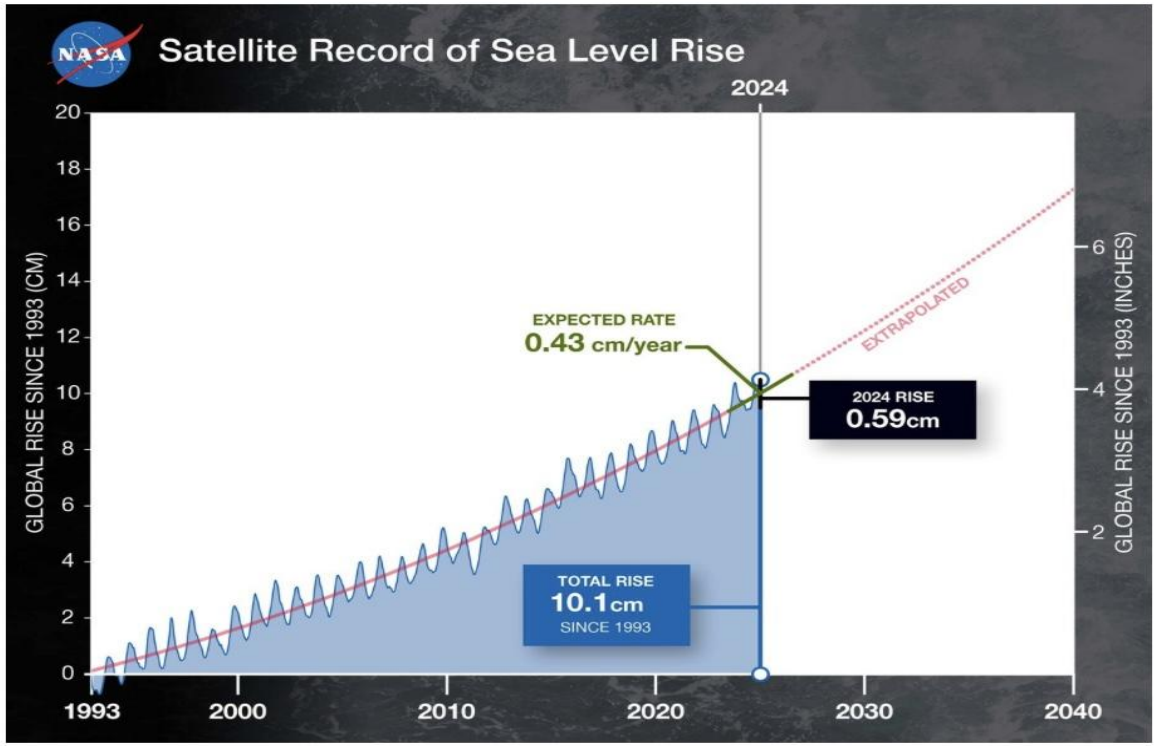


Annual Temperature Anomaly



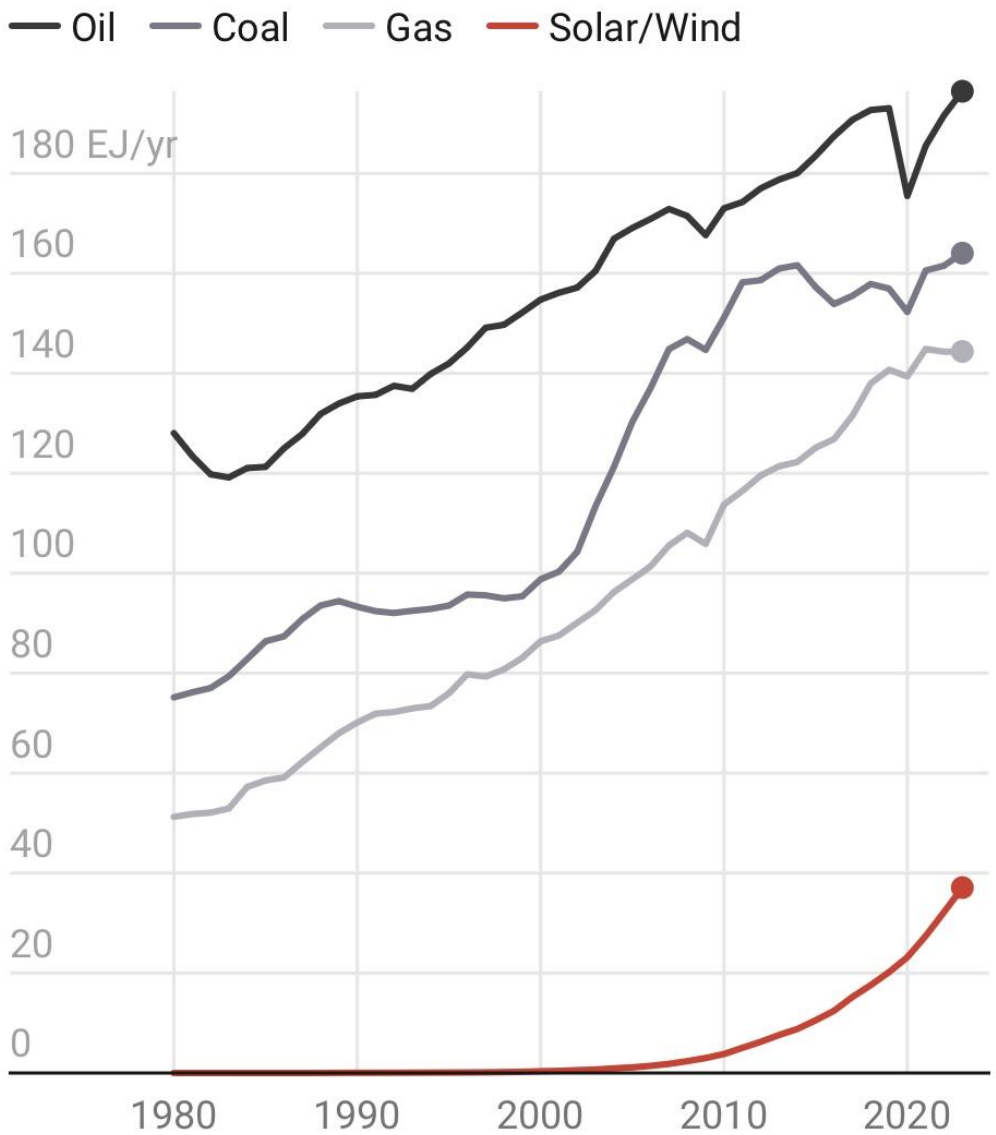
In Berkeley Earth's analysis the global mean temperature in 2023 is estimated to have been 1.62 ± 0.06 °C (2.91 ± 0.11 °F) above the average temperature from 1850-1900, a

faster."



This graph shows global mean sea level (in blue) since 1993 as measured by a series of five satellites. The

Global energy consumption by source, exajoules/year



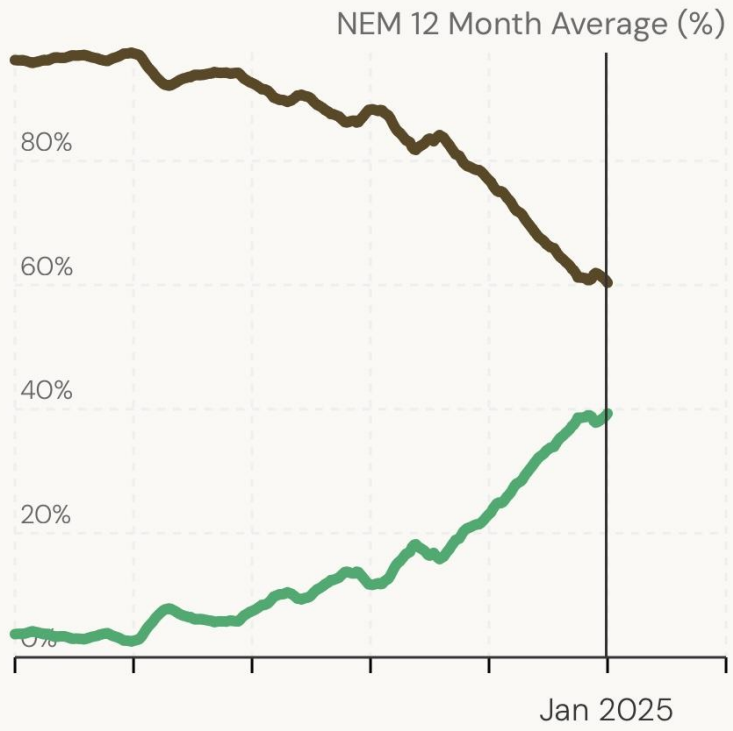
What is the answer?
The Paris Climate agreement of 2015, ratified in Nov 2016, required the 195 signatory nations to reduce their emissions to pre-industrial levels in order to keep the global temperature below 2.0 degrees of warming and preferably to 1.5 degrees

Currently Australia's energy consumption is about 6,000 petajoules = 1,667 terawatt hours. This has stayed stable since 2018. The mix is roughly 41% oil, 25% coal and 24% gas. Renewables account for 9%
Australia's electricity generation is 290 terawatt hours, in 2024, it has increased by 2% since 2023. It is likely that coal, gas and oil now contribute 60% (40% coal) of this and renewables 40%

In an attempt to comply with the Paris agreement, the Australian government has set the following targets

The Renewable Energy Target is to have Australia's energy be 82% renewable by 2913 and Net Zero by 2050.
Also to reduce emissions by 42% below 2005 levels by 2030, and by 62-70% below 2005 levels by 2030

tracking Australia's electricity transition



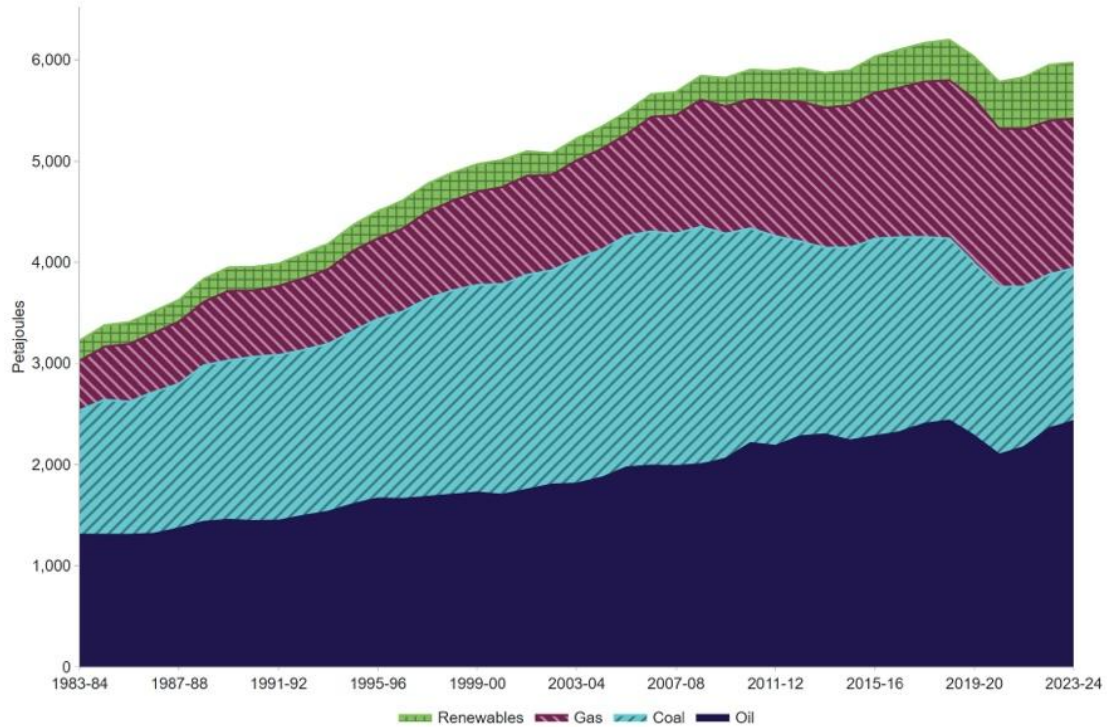
FOSSIL FUELS

60.4%

RENEWABLES

39.3%

Australian energy consumption - by fuel type - chart



	Location	Renew.
	World	30
1	Albania	100
2	Bhutan	100
3	Central African Republic	100
4	DR Congo	100
5	Ethiopia	100
6	Lesotho	100
7	Nepal	100
8	Paraguay	100
9	Iceland	100
10	Costa Rica	100
11	Norway	99
12	Namibia	98
13	Uganda	97
14	Eswatini	96
15	Malawi	96

16	Sierra Leone	95
17	Tajikistan	93
18	Uruguay	92
19	El Salvador	91
20	Kenya	90
21	Luxembourg	89
22	Zambia	89
23	Brazil	89
24	Belize	89
25	New Zealand	88
26	Greenland	87
27	Denmark	87
28	Afghanistan	87
29	Kyrgyzstan	86
30	Austria	85
31	Lithuania	84
32	Mozambique	84
33	Venezuela	78

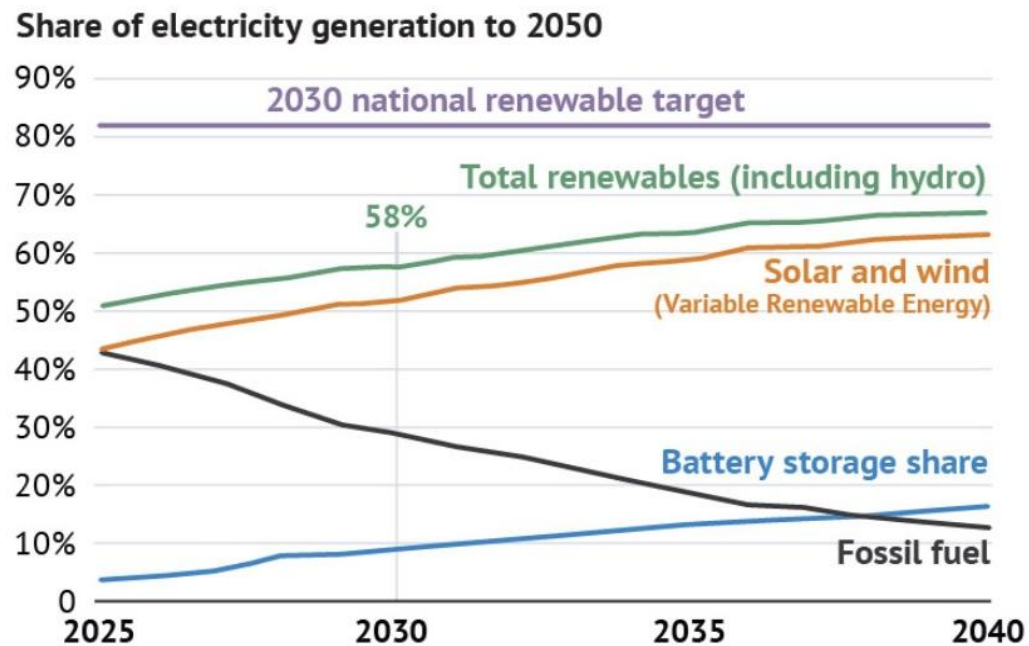
34	Latvia	78
35	Ecuador	77
36	Laos	77
37	Angola	76
38	Georgia	76
39	Guinea	75
40	Guatemala	75
41	Portugal	75
42	French Guiana	71
43	Sudan	70
44	Croatia	70
45	Sweden	69
46	Burundi	69
47	Zimbabwe	68
48	Canada	67
49	Colombia	66
50	Chile	65

51	Nicaragua	65
52	Cameroon	64
53	Fiji	63
54	North Korea	63
55	Switzerland	63
56	Panama	62
57	Honduras	62
58	Montenegro	60
59	Rwanda	57
60	Peru	55
61	Germany	53
62	Spain	51
63	Finland	51
64	Cook Islands	50
65	Romania	50
66	Greece	50
67	Estonia	49
68	Gabon	48

67	Estonia	49
68	Gabon	48
69	Lebanon	47
70	United Kingdom	47
71	Netherlands	47
72	Faroe Islands	46
73	Ireland	45
74	Italy	45
75	Cambodia	45
76	Suriname	43
77	Vietnam	43
78	Mali	43
79	Turkey	42
80	Macau	41
81	Slovenia	41
82	Bosnia and Herzegovina	40

Renewable energy transition

Australia is so far on track to achieve 58 per cent renewable electricity generation by 2030



Source: Wood Mackenzie

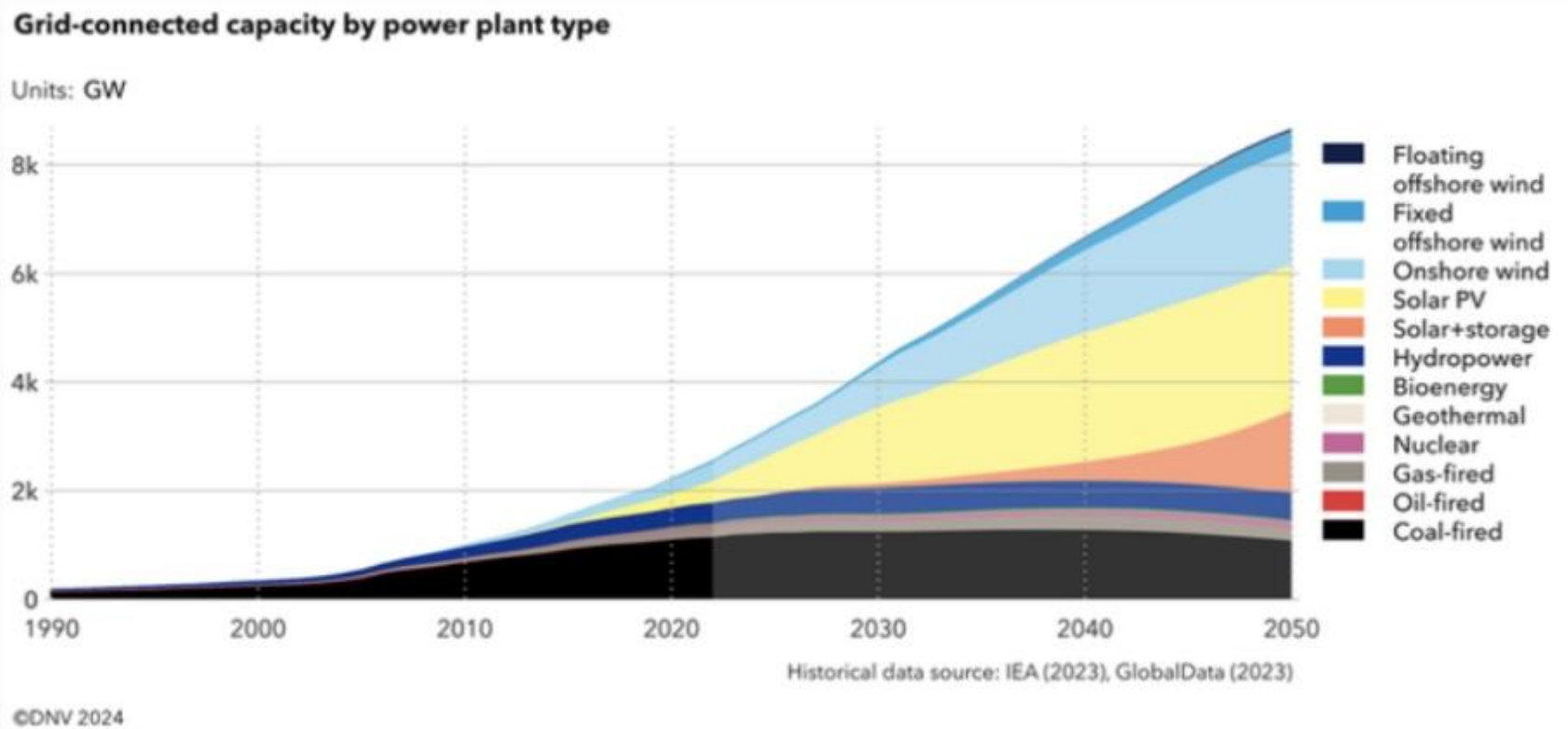


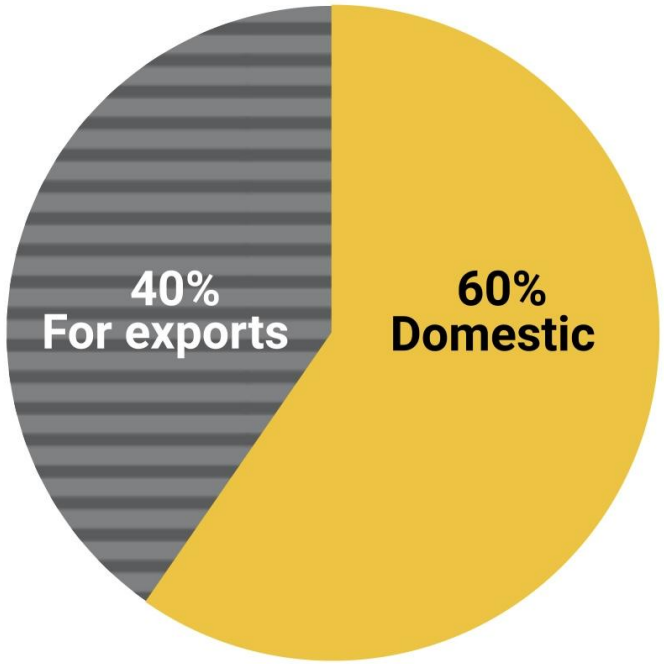
Chart showing how wind and solar are growing

Rewiring Australia

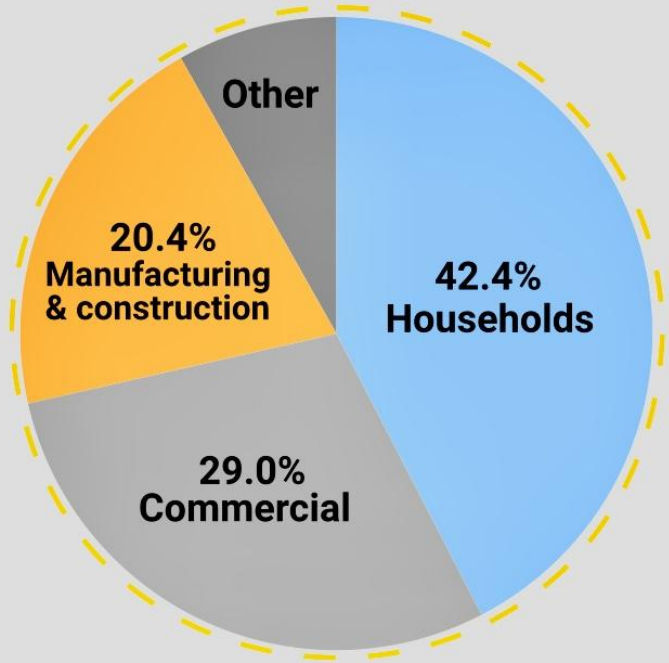
Menu

Australian emissions can be split into two major categories. **Export emissions** and **Domestic emissions.**

Export emissions are the emissions created for the products we send overseas to be used by other countries. Domestic emissions are the result of our daily lives in Australia. They are our direct responsibility and under our control.



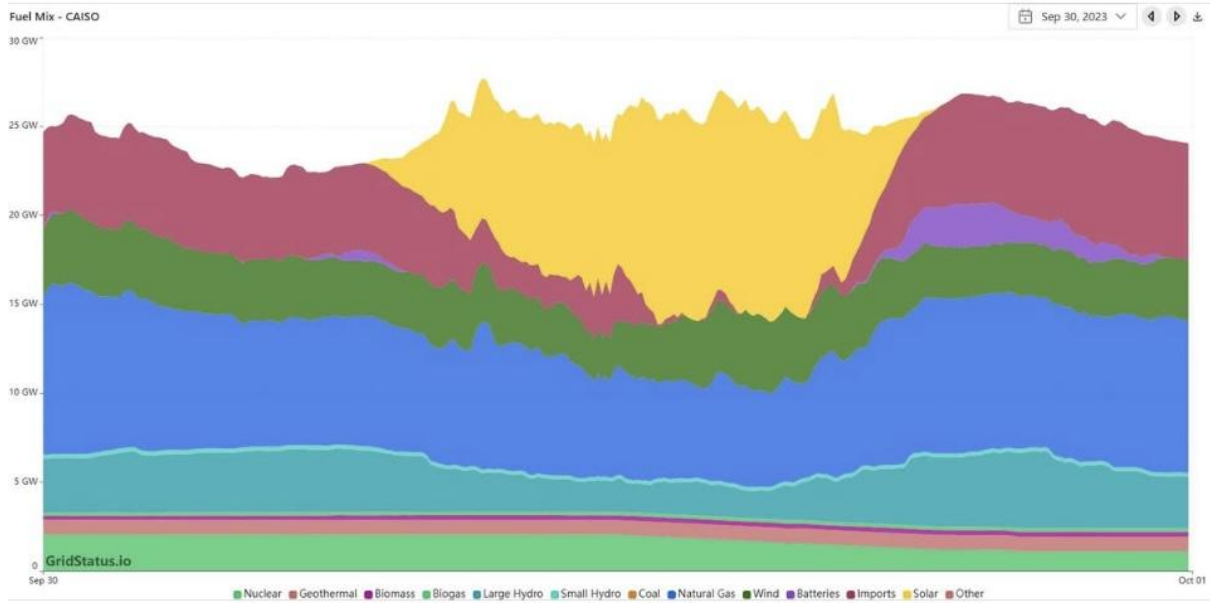
The **largest portion of domestic emissions are our households**, followed by our businesses. **They both use similar machines**.

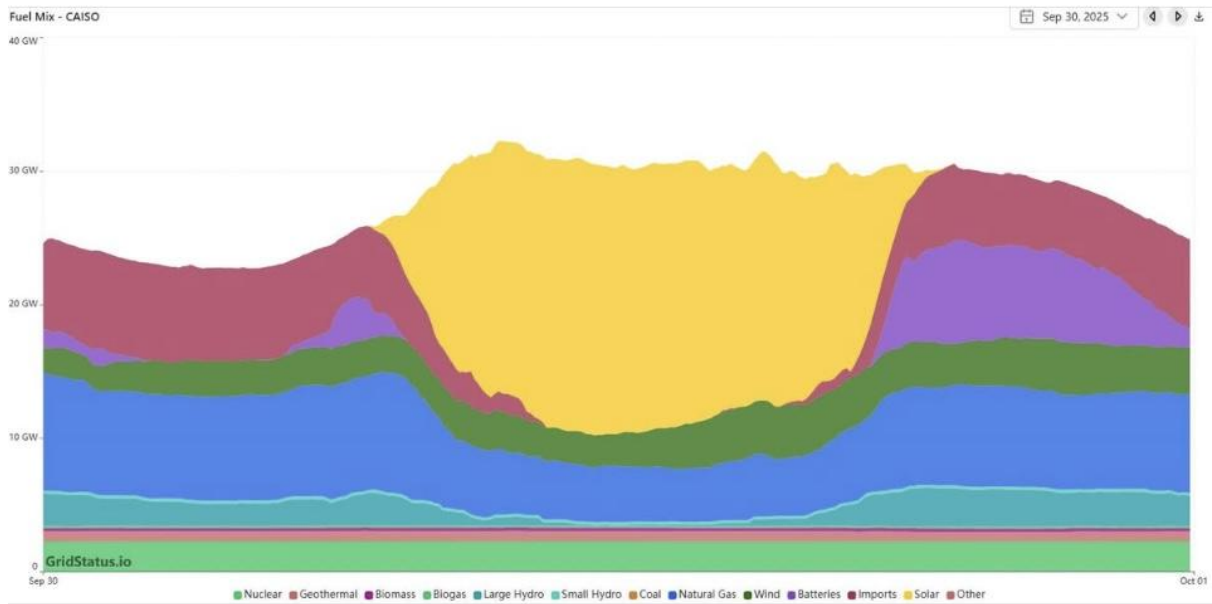


If we fully electrify our lives

1/ we stop burning fossil fuels
2/ we do our bit to protect the environment for our kids and grandkids
3/ we save money
4/ we can power our houses during power cuts
5/ we gain independence from the grid and the continued increases in power prices
6/ we use local tradesmen and money stays local
7/ we put less pressure on the electricity grid
8/ we are going to have to do it sooner or later

What a difference two years makes....
look at all that solar and storage 🤩





National transport emissions (2022)

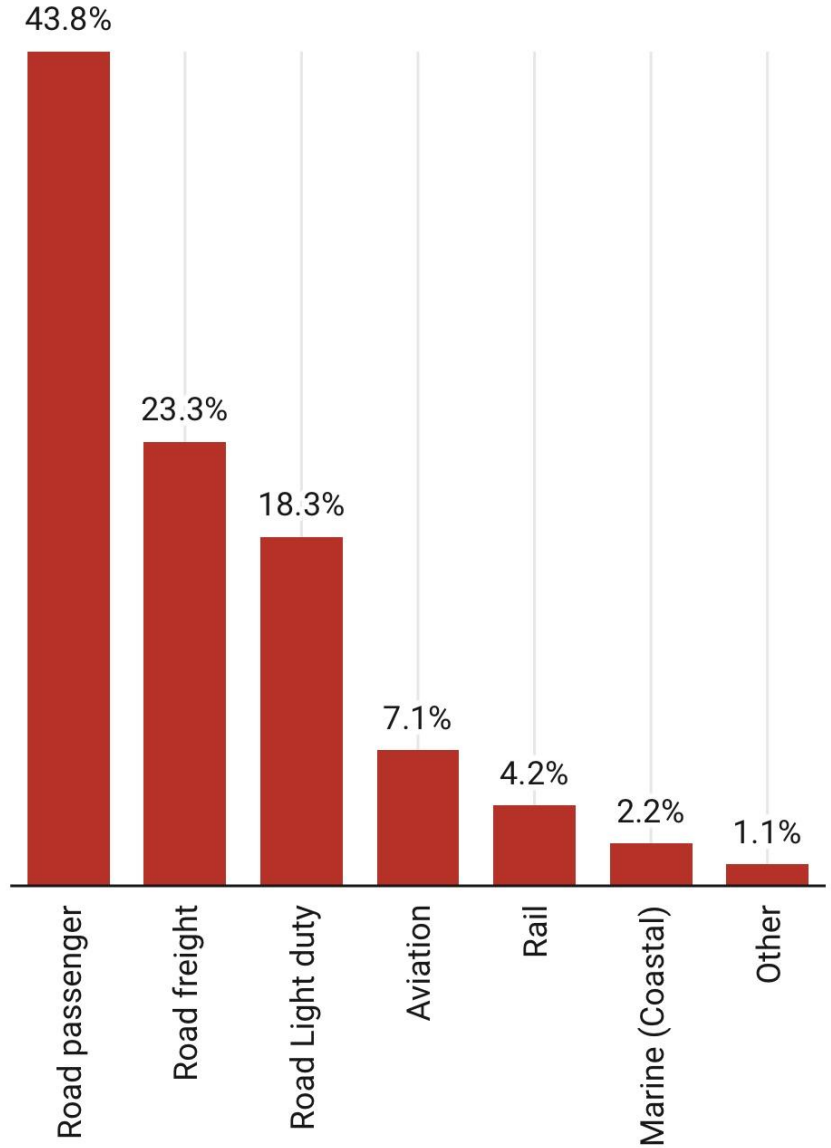
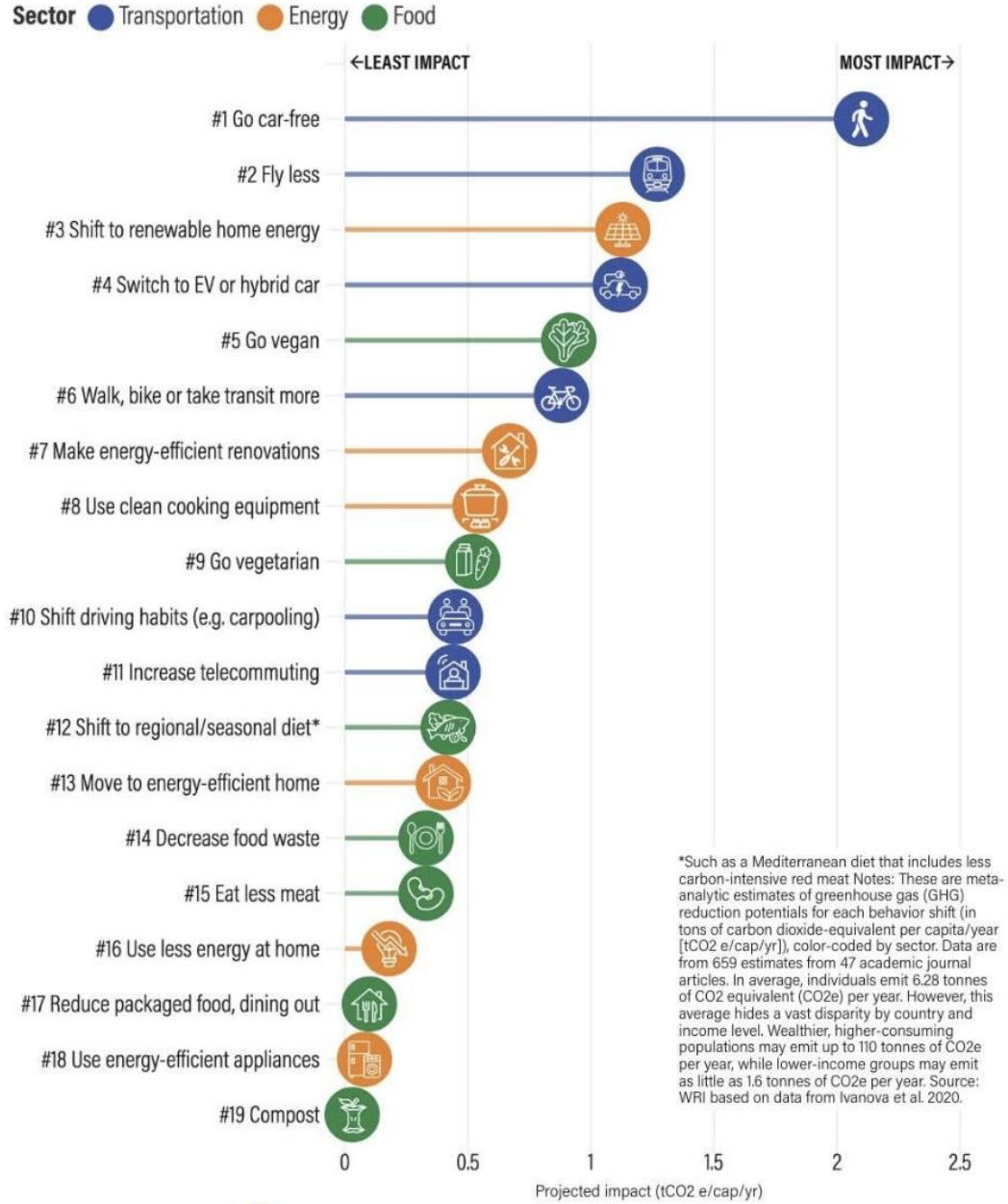
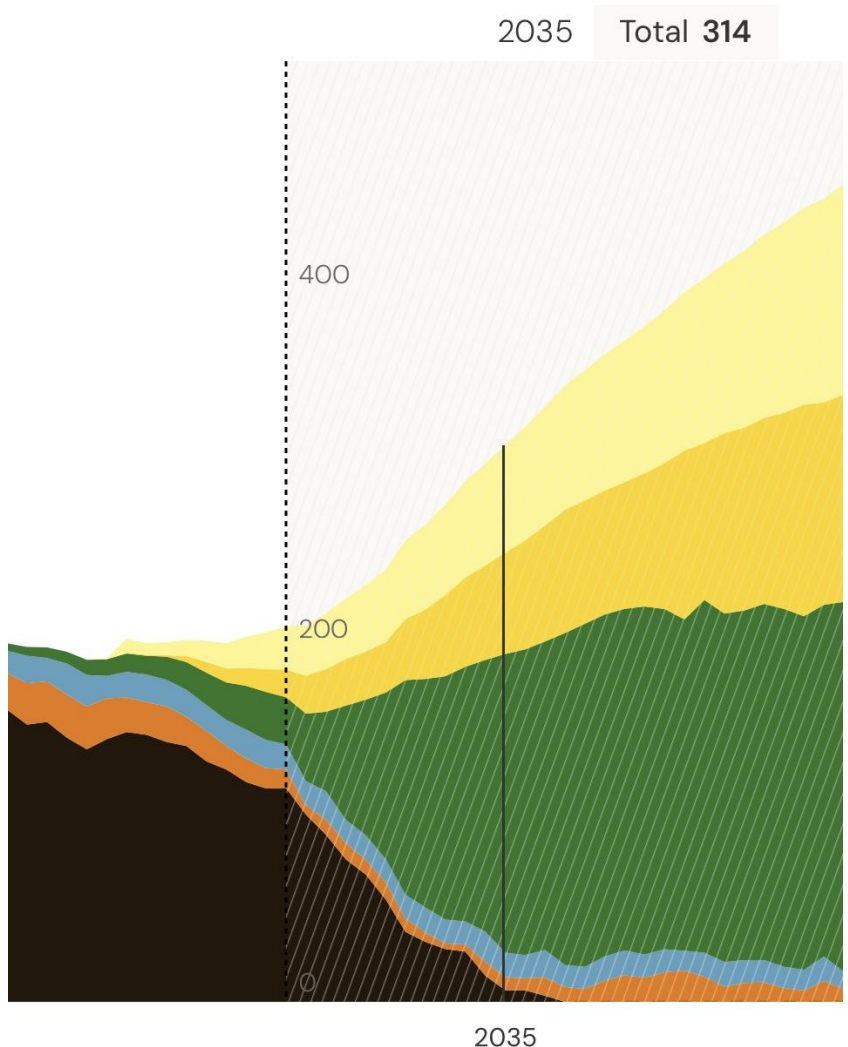


Chart: Swinburne University of Technology • Source:

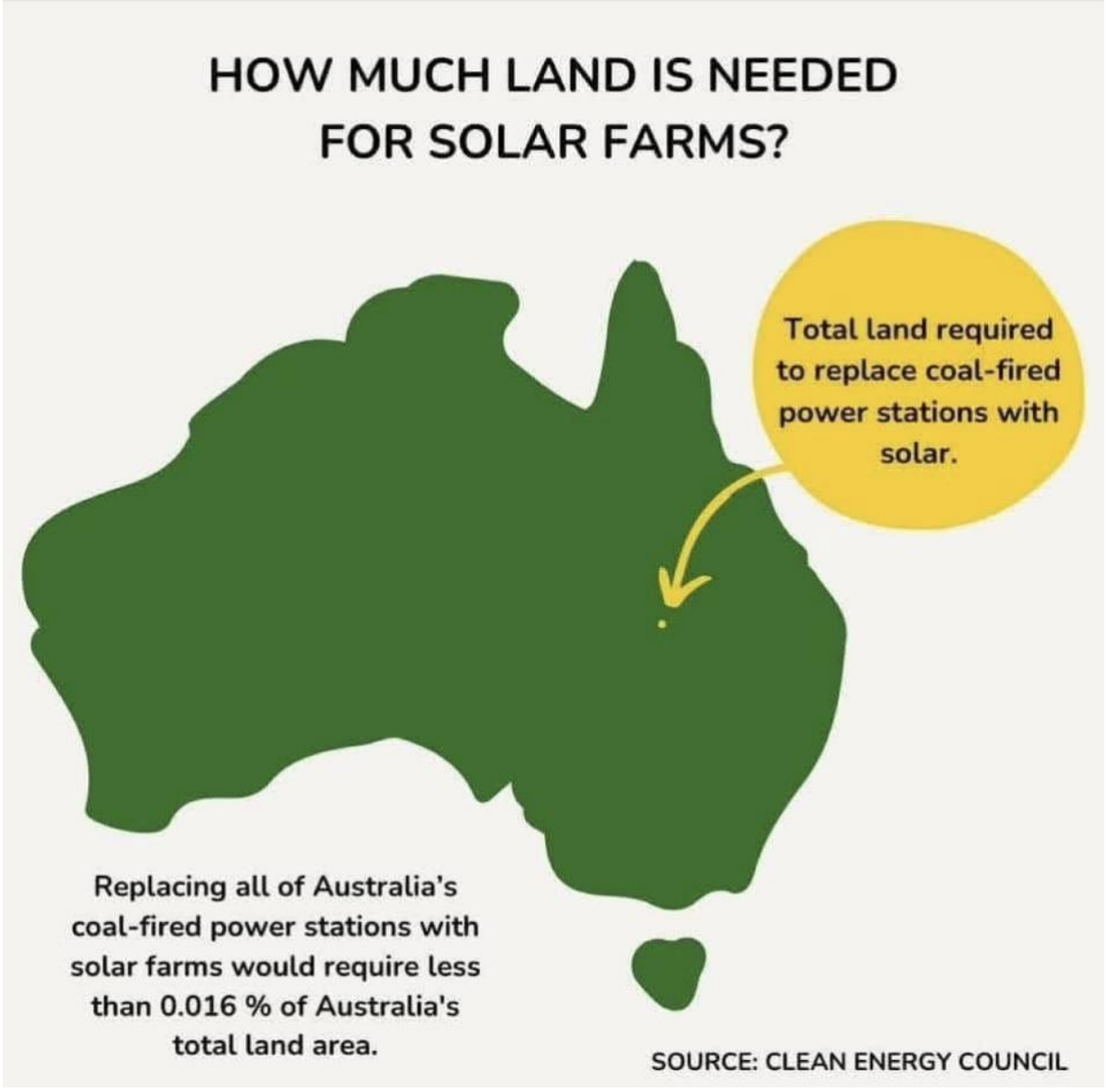
19 climate-friendly choices, ranked

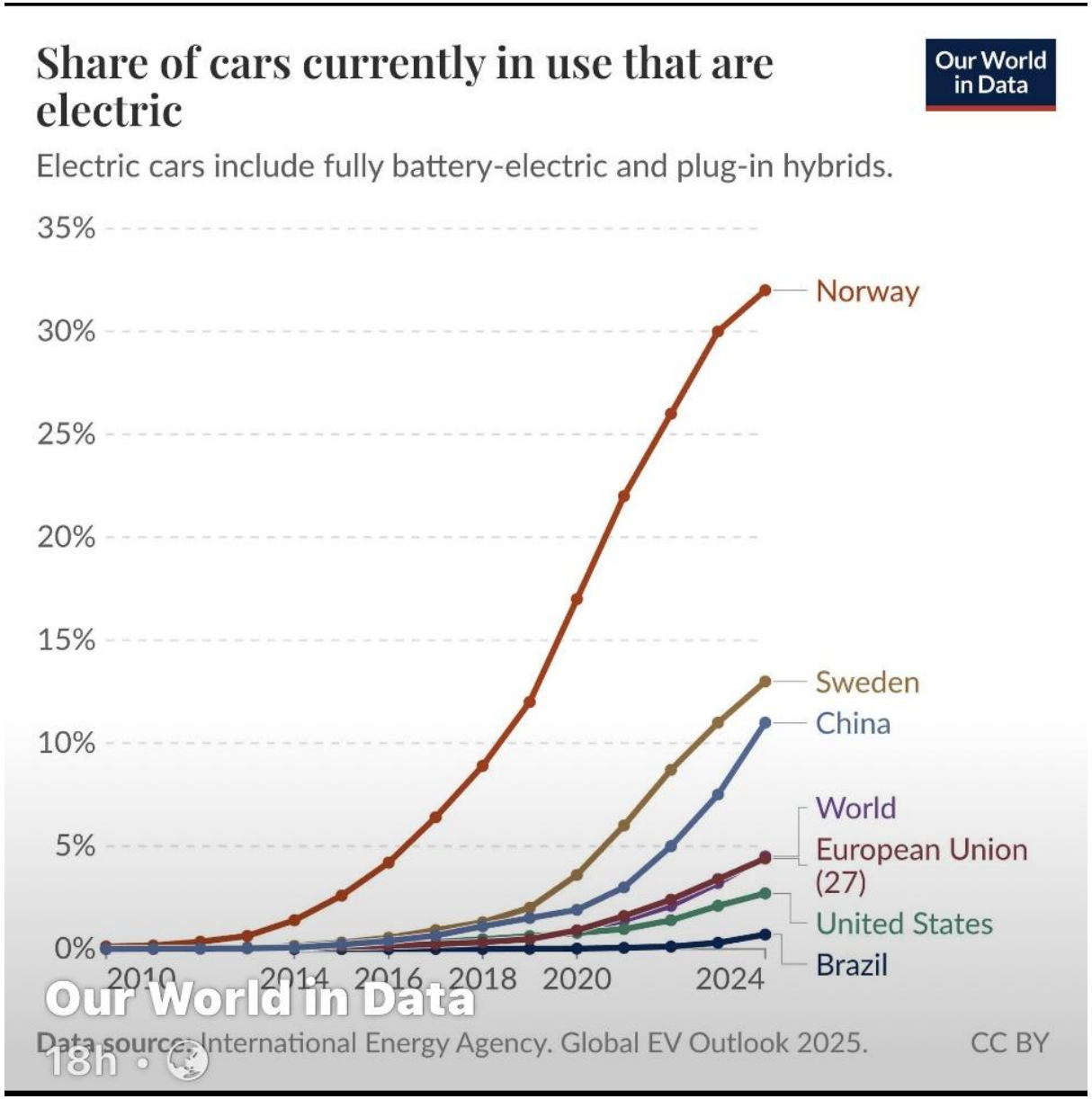


Considered the most likely scenario, Step Change forecasts a rapid energy transition aligned with Australia's emissions reductions commitments within a growing economy.



Anyone would think they need to cover half the country in solar panels.. the truth is much different.




Share of cars currently in use that are electric
Our World in Data
Electric cars include fully battery-electric and plug-in hybrids.
35%
30%
25%
20%
15%
10%
5%
0%
2010
2014
2016
2018
2020
2024
Norway
Sweden
China
World
European Union (27)
United States
Brazil
Our World in Data
Data source: International Energy Agency. Global EV Outlook 2025.
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