CLIMATE ENERGY FINANCE

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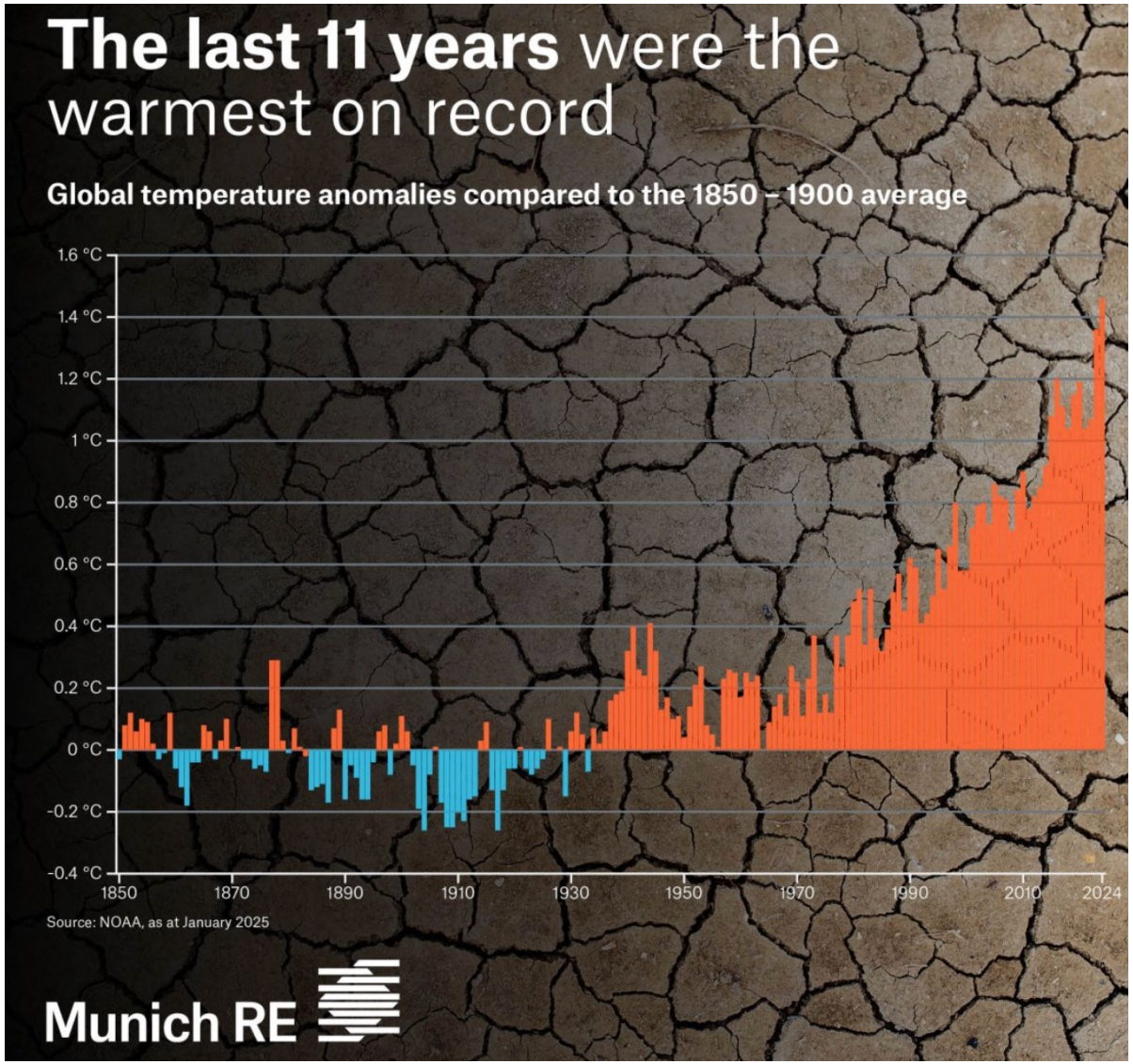
ANU College of Business and Economics

China's Green Industrial Policy and Its Financial Implications for Australia

8 October 2025

CEF accepts the climate science

CEF is a public interest thinktank with no government or corporate funding



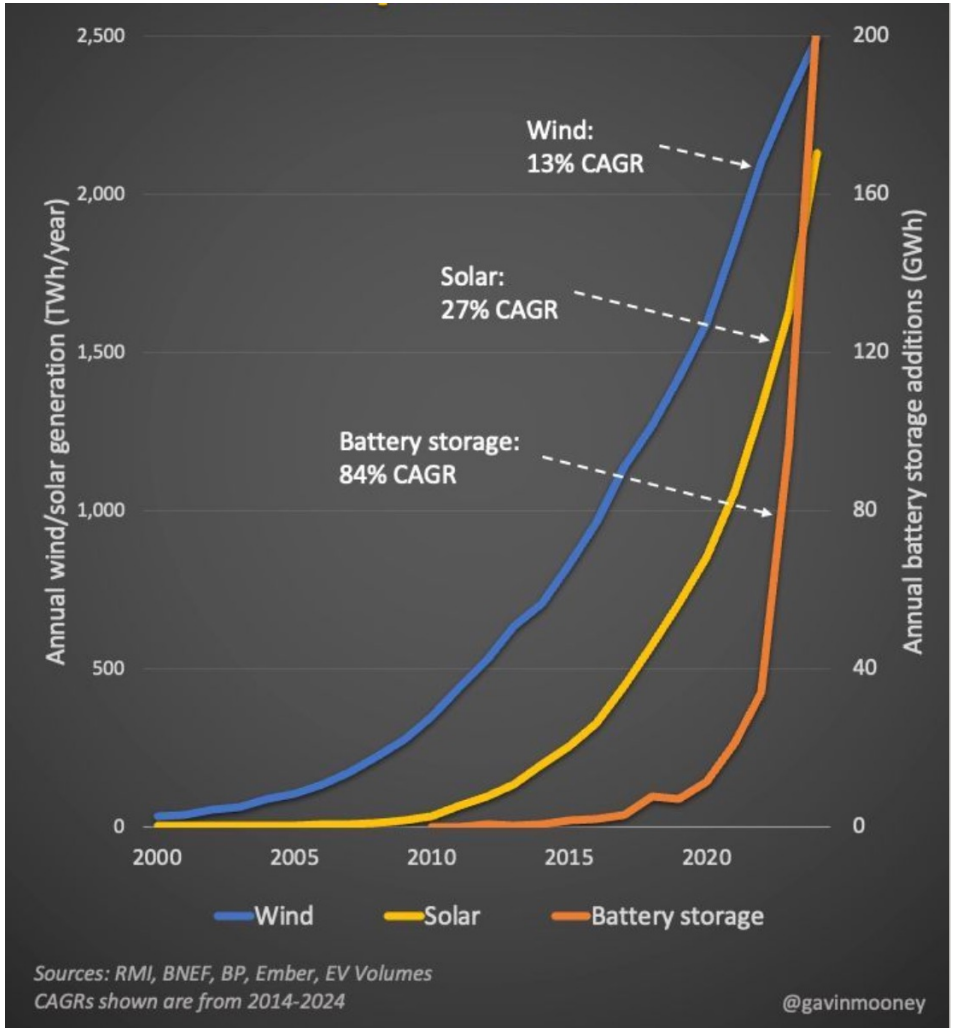
China's Green Industrial Policy and Its Financial Implications for Australia

China dominates most zero emissions industries of the future: leading in RD&D, domestic manufacturing, domestic deployments, cleantech exports and outbound foreign direct investment.

- China's state-led green technology expansion: e.g. EVs (2-wheeler, cars, trucks), BESS, solar (rooftop and utility scale, deployments and manufacturing polysilicon-wafers-cells-modules-inverters), hydrogen / green ammonia / SAF, wind (onshore and offshore – installs and manufacturing).
- Financial flows between China and Australia: risks and opportunities.
- Strategic impacts on Australia's export markets and FDI patterns.

Global Cleantech Investment is Accelerating

As Battery Prices fell 50% in 2 years, global Installations have Taken Off
Solar + BESS + V2G => Accelerated Energy System Transformation

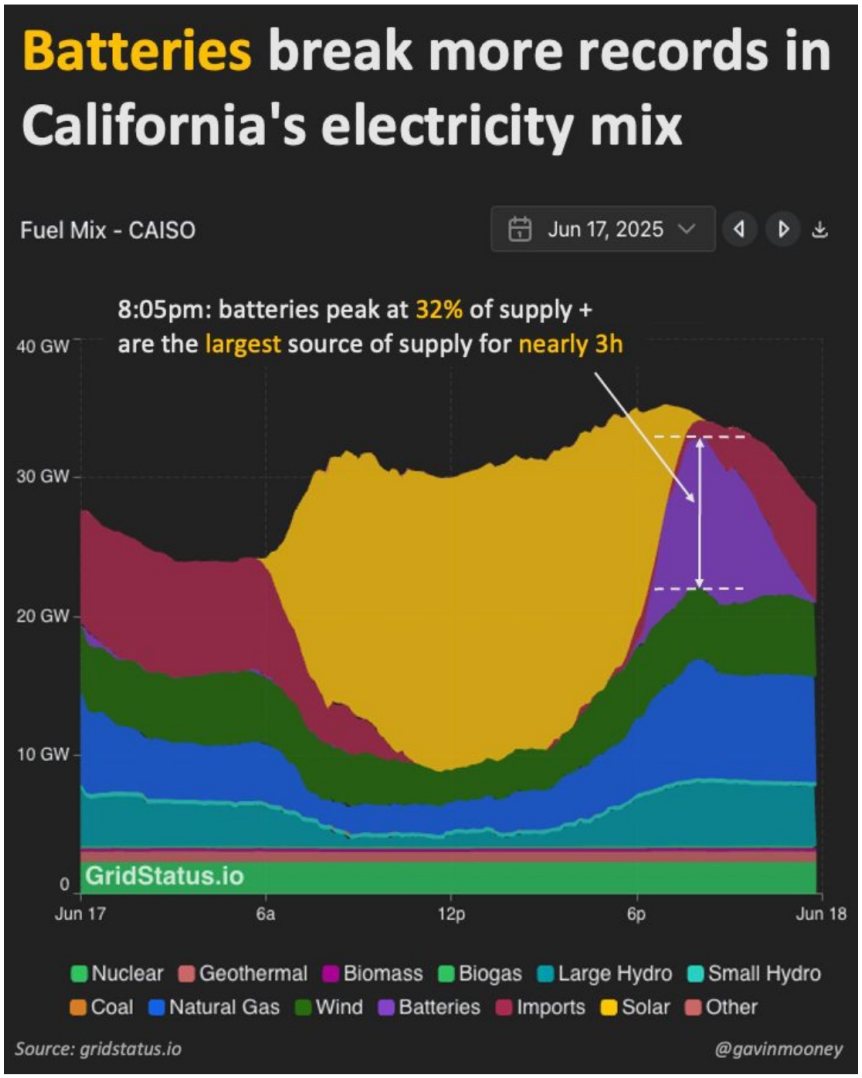


IRENA 22 July 2025: In 2024, solar PV was, on average, 41% cheaper than the lowest-cost fossil fuel alternatives, while onshore wind projects was 53% cheaper. Onshore wind remained the most affordable source of new RE electricity at US$34/MWh, followed by solar PV at US$43/MWh.

Source: Gavin Mooney, Kaluza

Global Cleantech Investment is Accelerating

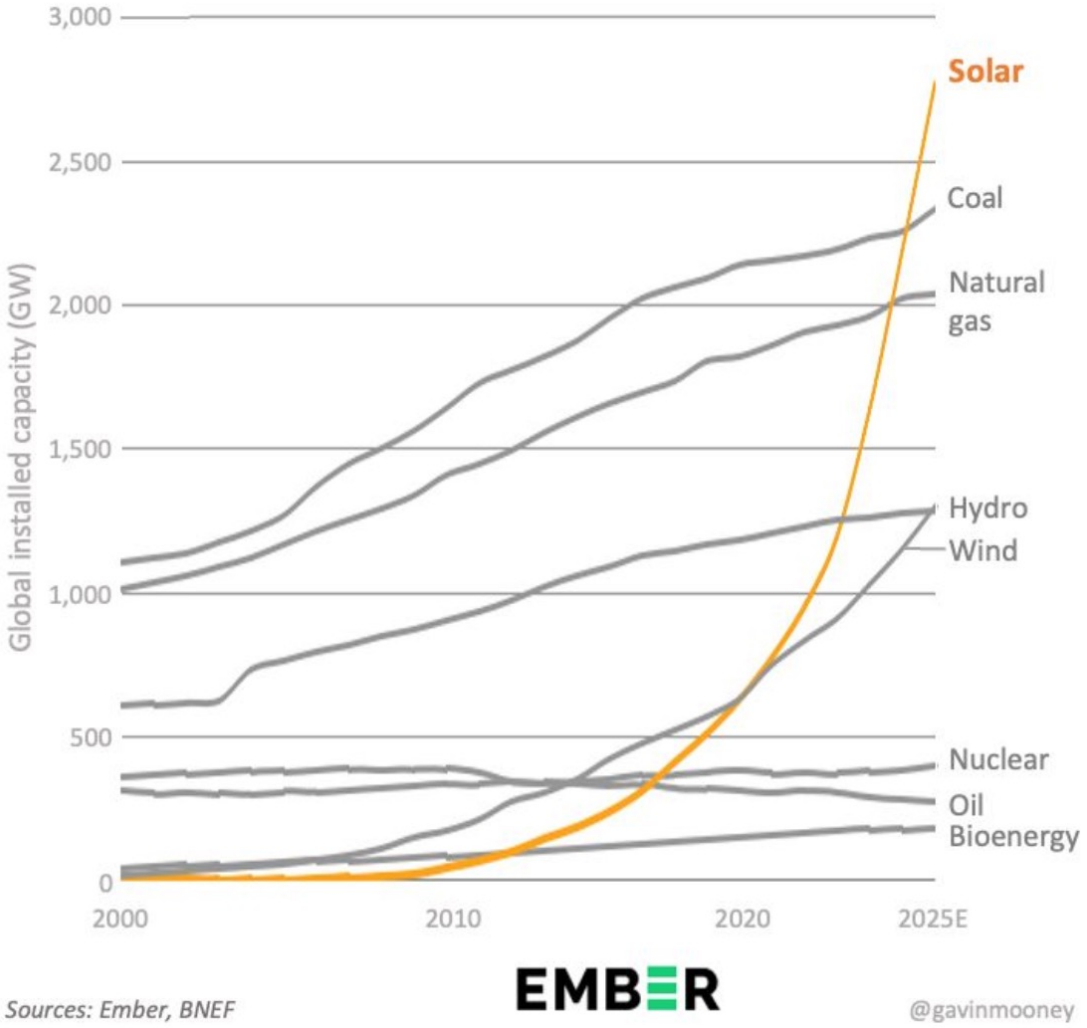
Solar + BESS + V2G => Accelerated Energy System Transformation



Source: Gavin Mooney, Kaluza

Global Cleantech Investment is Accelerating

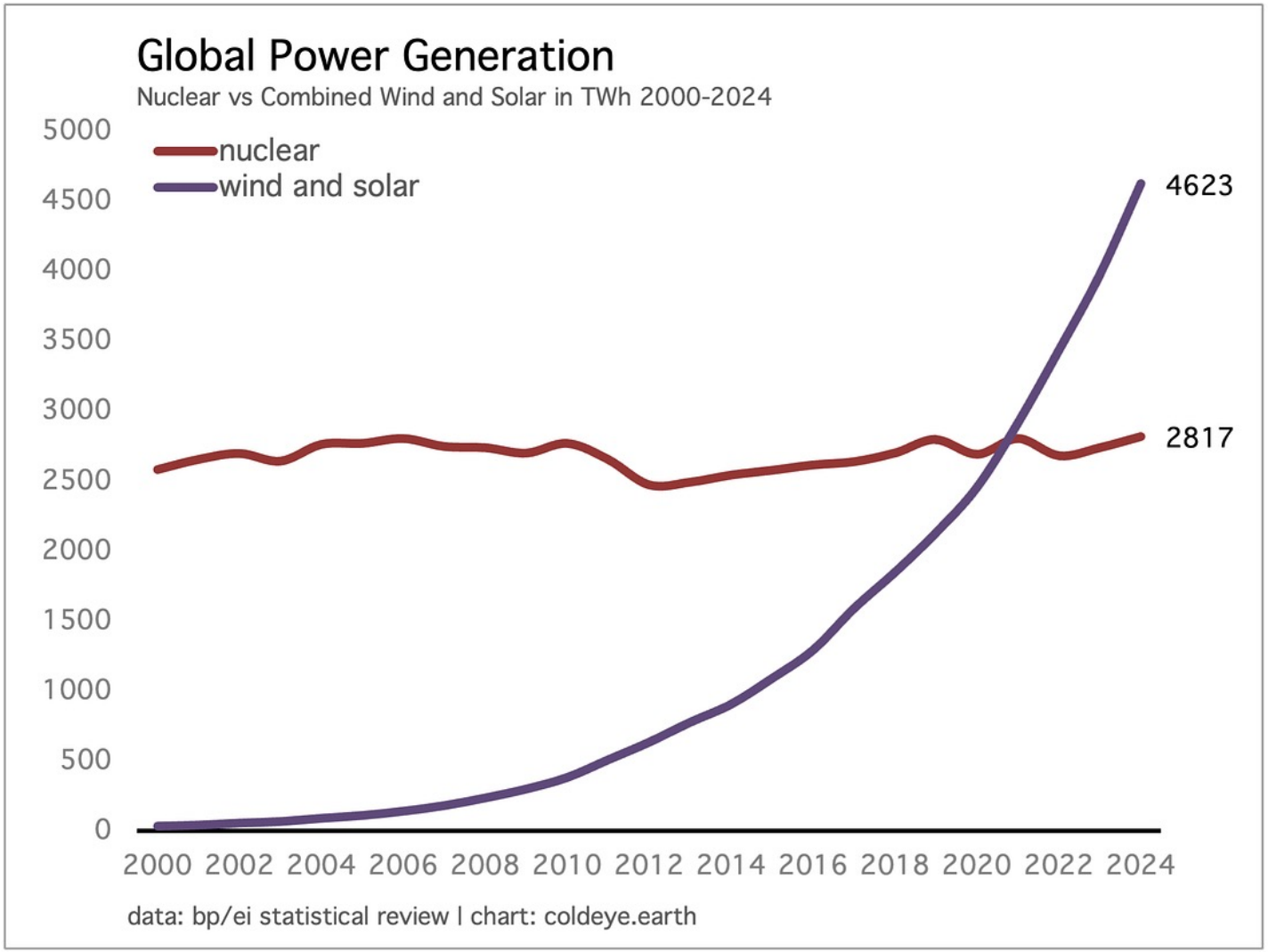
Solar has gone from the smallest to the largest source of capacity (not generation) globally in just 15 years



Source: Gavin Mooney, Kaluza, September 2025

Global Cleantech Investment is Accelerating

But Capacity is not Generation. This chart shows the Generation Globally of Wind & Solar vs the LNP's so-called Nuclear Renaissance



China is Moving in Decarbonisation, Rapidly

China is still adding flexible coal power plants (too much!), but utilization rates are down to average just 45% in 8MCY2025, balancing ever more VRE! China deployed 295GW of renewable energy capacity in 8M to-date CY2025. China deploys as much wind 4 days as Australia does each year.

New Capacity Installed in China in Jan-Aug 2025

		Jan-Aug 25	% Share of new adds	% yoy change	Aug-25	% Share of new adds
Fossil Power	GW	50	14%	74%	7.9	39%
Hydropower	GW	7	2%	4%	1.0	5%
Nuclear Power	GW	-	0%	0%	-	0%
Wind Power	GW	58	17%	72%	4.2	20%
Solar Power	GW	231	67%	65%	7.4	36%
Total capacity added	**GW**	**345**	**100%**	**64%**	**20.4**	**100%**
Renewable Energy adds	GW	295	86%	64%	12.5	61%
Zero Emissions Capacity Adds	GW	295	86%	63%	12.5	61%
YTD power grid investment	US$bn	53		14%		

Source: National Energy Administration; CEF Estimates

CEF China Energy Update September 2025, https://createsend.com/t/y-249BD71B4E2BA5D52540EF23F30FEDED

China is Moving in Decarbonisation, Rapidly

China's thermal coal use declined -0.4% yoy in 8M CY2025
This trend masks the rapid reduction in oil imports as China progressively electrifies everything, including transport thanks to EVs.

China's Power Generation Mix in Jan-Aug 2025

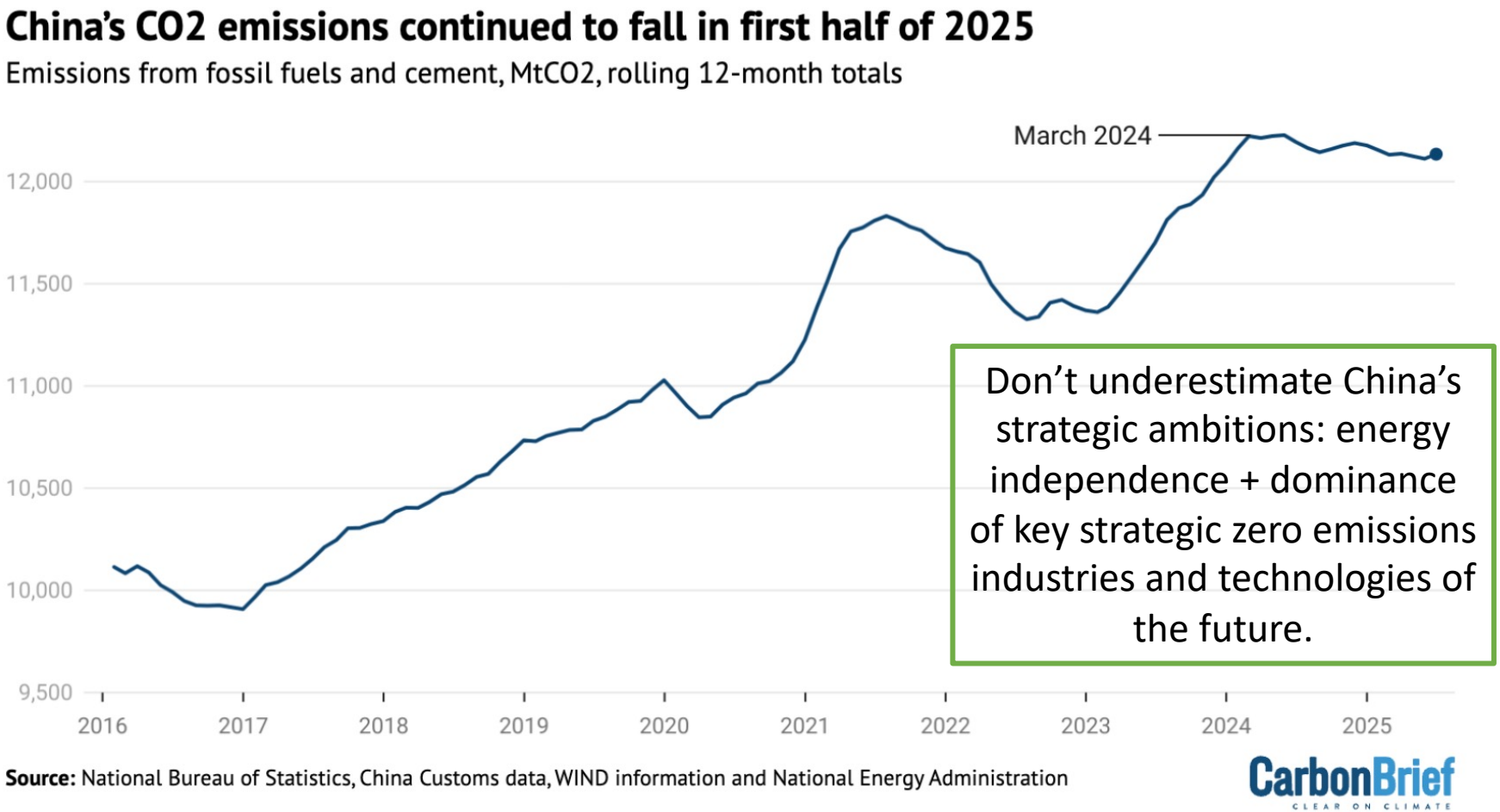
		Jan-Aug 25	% Change yoy	Share of generation	Aug-25	% Change yoy
Fossil Power	TWh	4,058	-0.4%	59%	610	2.1%
Coal	TWh	3,859	-0.5%	56%	579	1.8%
Gas	TWh	188	0.5%	3%	30	8.0%
Other Fossil	TWh	11	0.2%	0%	2	6.9%
Bioenergy	TWh	130	0.1%	2%	20	5.5%
Hydropower	TWh	847	-4.6%	12%	149	-9.4%
Nuclear Power	TWh	322	10.2%	5%	43	5.9%
Wind Power	TWh	745	16.4%	11%	71	28.7%
Solar Power	TWh	820	41.6%	12%	124	39.3%
TOTAL POWER GENERATION	**TWh**	6,922	4.8%	100%	1,016	5.3%
Variable Renewable Generation	TWh	1,565	28.4%	23%	194	35.2%
Zero Emissions Power Generation	TWh	2,864	13.2%	41%	406	10.5%

Source: Ember; CEF Estimates

CEF China Energy Update September 2025, https://createsend.com/t/y-249BD71B4E2BA5D52540EF23F30FEDED

China's electrification leadership drives decarbonisation

China's electrification is about energy security i.e. permanently reducing reliance on imported fossil fuels. Combined with lower steel and cement production => national emissions in China have plateaued.

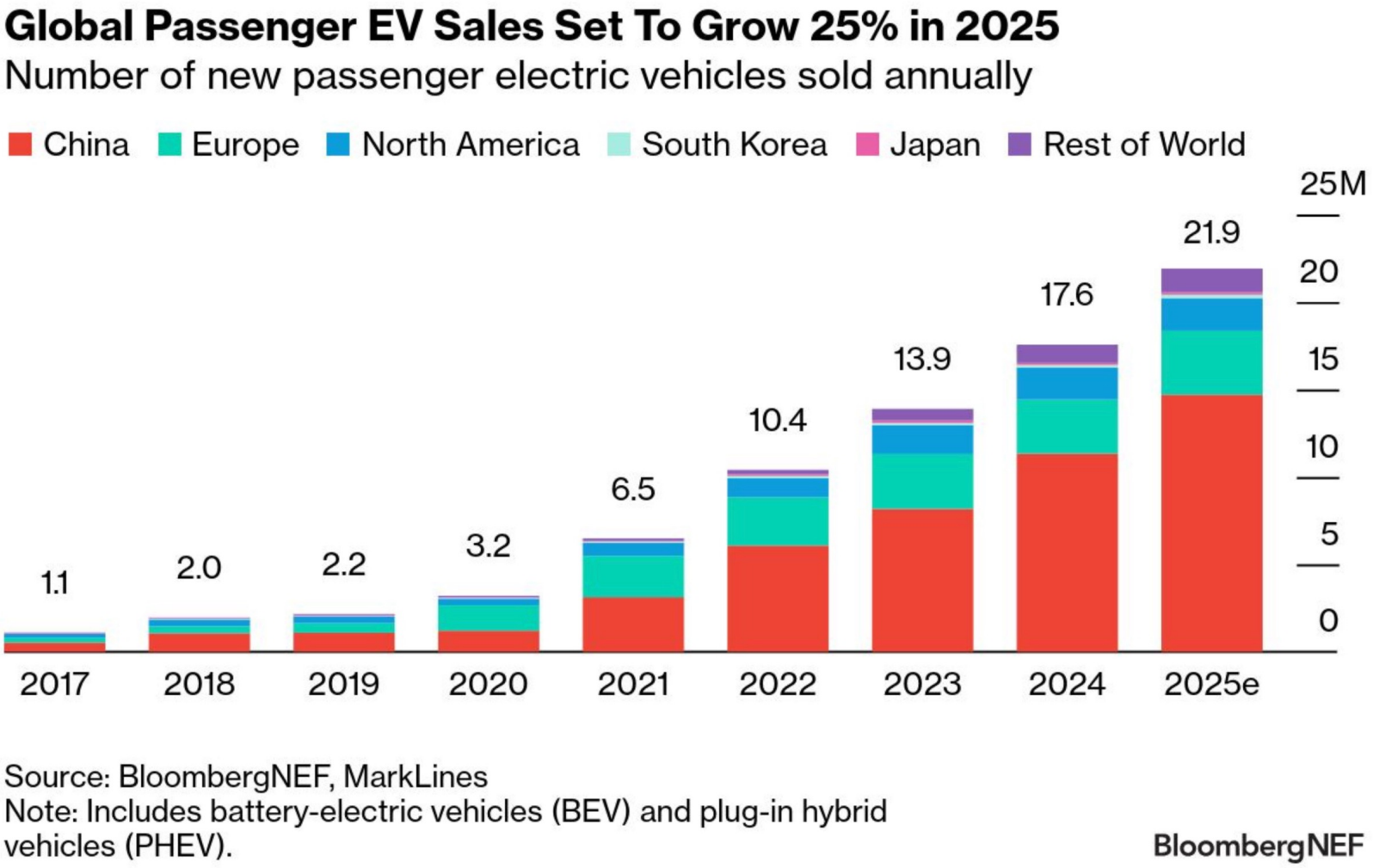


Don't underestimate China's strategic ambitions: energy independence + dominance of key strategic zero emissions industries and technologies of the future.

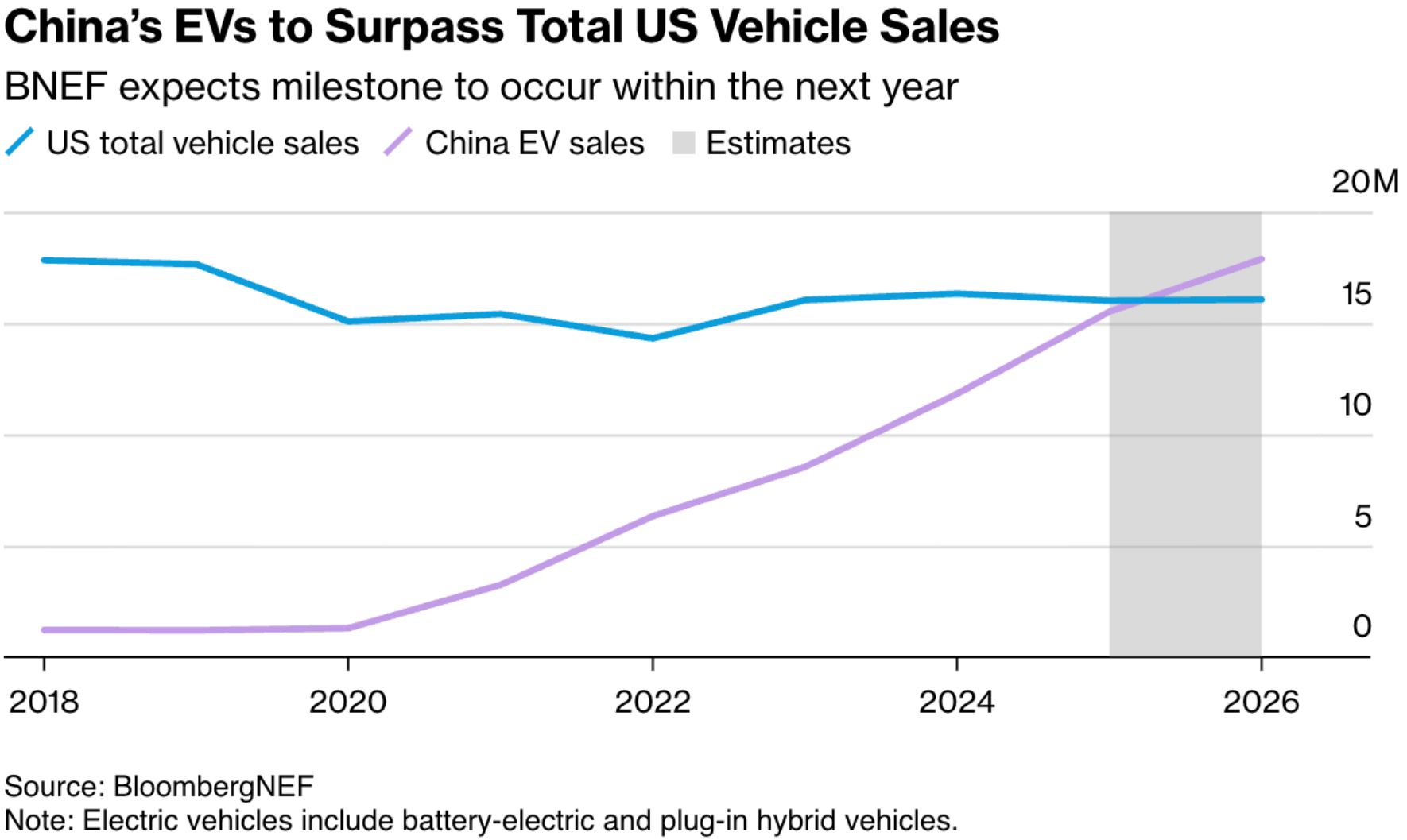
Source: CarbonBrief; https://www.carbonbrief.org/analysis-record-solar-growth-keeps-chinas-co2-falling-in-first-half-of-2025/

China's Global Cleantech Investment Dominance

Global EV Sales By Region



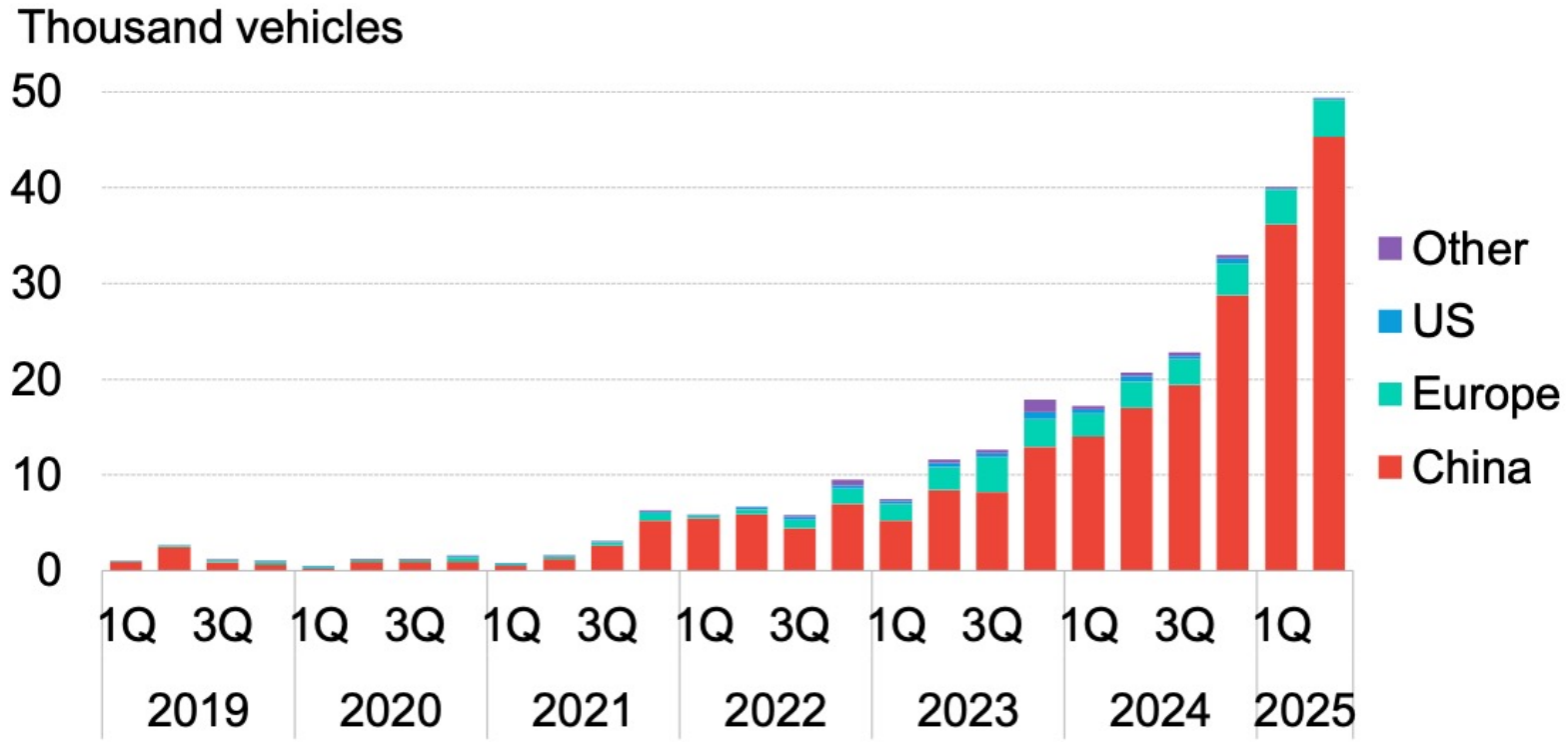
China's Global Cleantech Investment Dominance



Bloomberg June 2025 https://www.bloomberg.com/news/articles/2025-06-18/trump-weakens-electric-vehicle-market-in-us?cmpid=BBD091925_GREENDAILY&utm_medium=email&utm_source=newsletter&utm_term=250919&utm_campaign=greendaily

China's Global Cleantech Investment Dominance

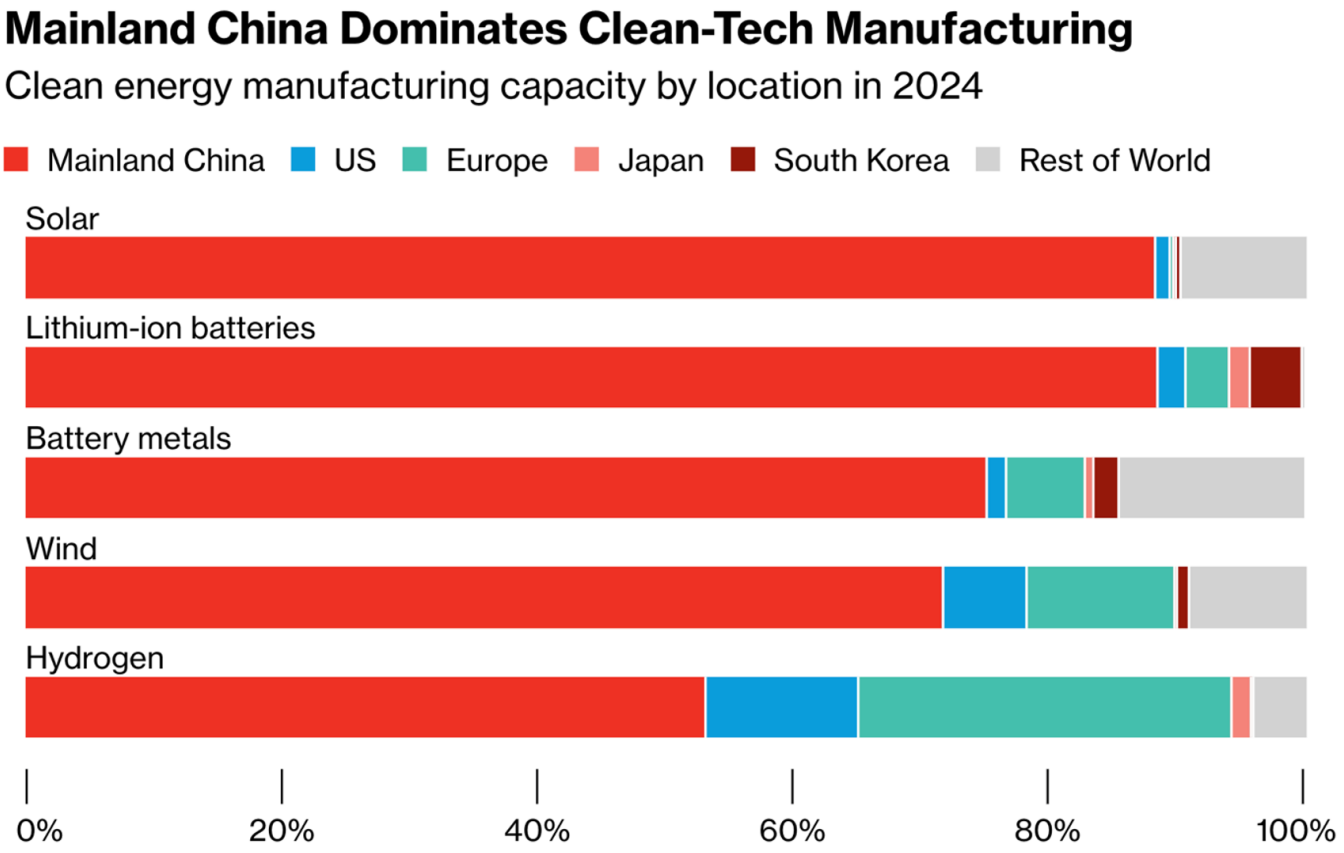
Global sales of zero emission trucks reach a record in 1H 2025



Source: BloombergNEF; see full list of sources in the Appendix. Note: Europe is the EU 27, the UK, Norway, Switzerland, Iceland and Liechtenstein. Includes medium- and heavy-duty trucks.

BloombergNEF September 2025: https://assets.bbhub.io/professional/sites/24/Zero-Emission-Commercial-Vehicles-Factbook-2025.pdf

China's Global Cleantech Investment Dominance

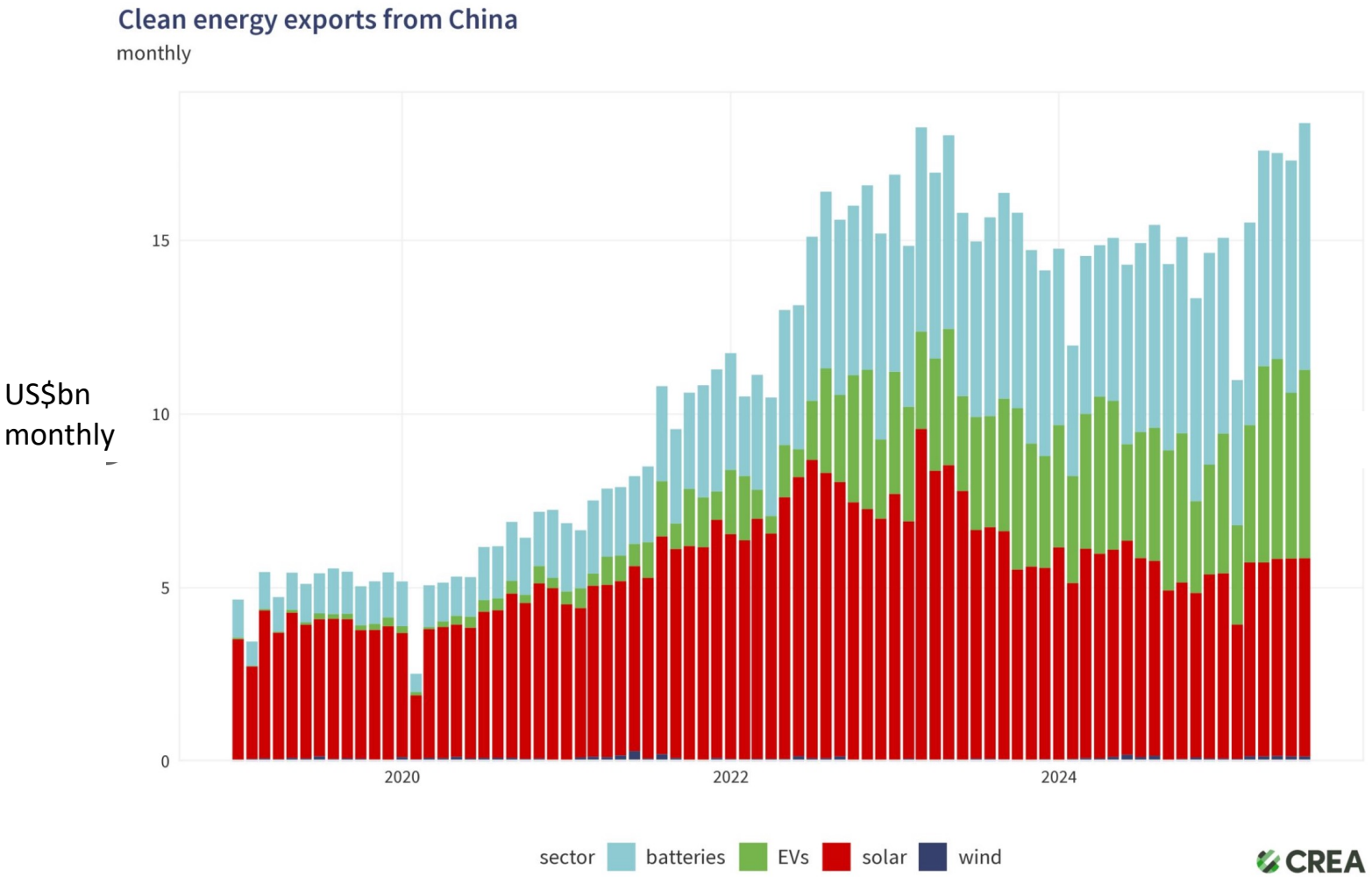


Source: BloombergNEF
Note: Bars show average shares across value chain segments for each sector. Solar includes modules, cells, wafers and polysilicon. Lithium-ion batteries include cells, cathodes, anodes, electrolytes and separators. Metal refining includes lithium, cobalt sulfate and nickel sulfate. Wind is nacelles, and hydrogen is electrolyzer stacks.

Bloomberg September 2025: https://www.bloomberg.com/news/articles/2025-09-21/china-road-trip-exposes-list-of-uninvestable-assets-in-the-west?srnd=homepage-asia

China's Global Cleantech Investment Dominance

China's leading CleanTech Export sales reached a record high US$18.4bn in the month of July 2025.



Lauri Myllyvirta @CREA September 2025: https://www.linkedin.com/posts/lauri-myllyvirta-3164703b_breaking-the-value-of-chinas-exports-of-activity-7370693371905851392-tzt9?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAK_xL4BN5TFIx7F-X4g0YfwtHJ1QLTvZoQ

China's Global Cleantech Investment Dominance

There's a Race to Power the Future. China Is Pulling Away

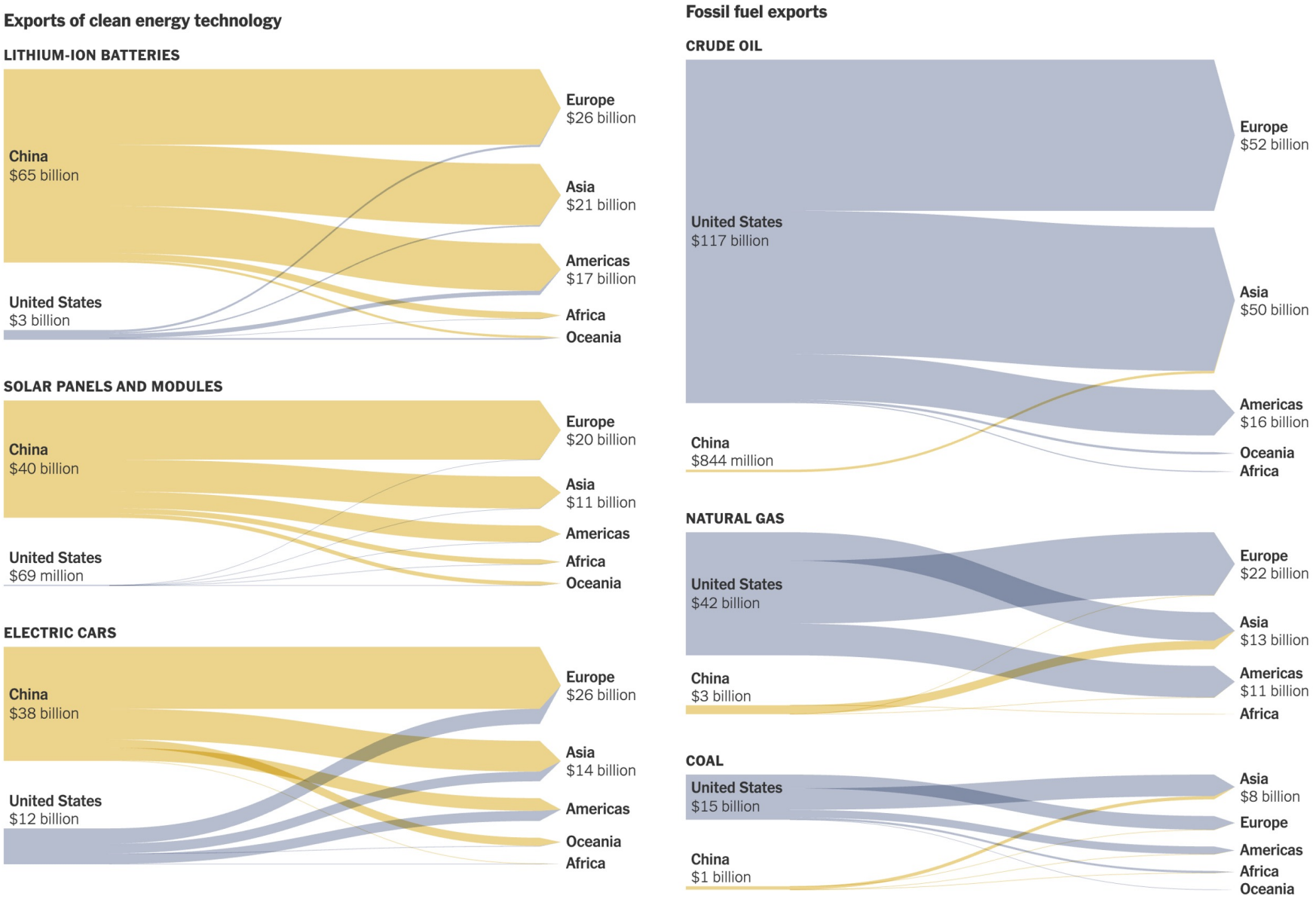
Beijing is selling clean energy to the world, Washington is pushing oil and gas. Both are driven by national security.

By David Gelles in New York; Somini Sengupta in Brasília and in Tirunelveli, India; Keith Bradsher in Beijing; and Brad Plumer in Washington June 30, 2025 ***The New York Times***

In China, more wind turbines and solar panels were installed last year than in the rest of the world combined. And China's clean energy boom is going global. Chinese companies are building EV and battery factories in Brazil, Thailand, Morocco, Hungary and beyond.

New York Times 30 June 2025: https://www.nytimes.com/interactive/2025/06/30/climate/china-clean-energy-power.html?unlocked_article_code=1.S08.97P-.69ar3PZIzbe2&smid=url-share#

China's Global Cleantech Investment Dominance



New York Times 30 June 2025: https://www.nytimes.com/interactive/2025/06/30/climate/china-clean-energy-power.html?unlocked_article_code=1.S08.97P-.69ar3PZIzbe2&smid=url-share#

China's Global Cleantech Investment Dominance

China A Chinese E.V. factory in Brazil

U.S. An export terminal for American gas in Mexico

CEF tracks over 230 transactions since the start of 2023 totalling over US$175bn in Chinese OFDI in cleantech.

https://climateenergyfinance.org/wp-content/uploads/2025/05/How-Xi-sparked-Chinas-electricity-revolution-FT-12-May-2025.pdf

New York Times 30 June 2025: https://www.nytimes.com/interactive/2025/06/30/climate/china-clean-energy-power.html?unlocked_article_code=1.S08.97P-.69ar3PZIzbe2&smid=url-share#

China's Global Cleantech Investment Dominance

Australia Needs to Collaborate More with our Top Trade Partner

Chinese PV and storage giant Trina wins rapid green light for another big solar hybrid project

Rachel Williamson 18 September 2025 Renew Economy

Western Australia planners have approved a huge new solar-battery hybrid project in what may be record time, with Trina Solar's latest proposal taking just two and a half months to get through the system. The $700m Killawarra solar-battery hybrid will consists of 400MW of solar and a 400MW, four-hour integrated battery.

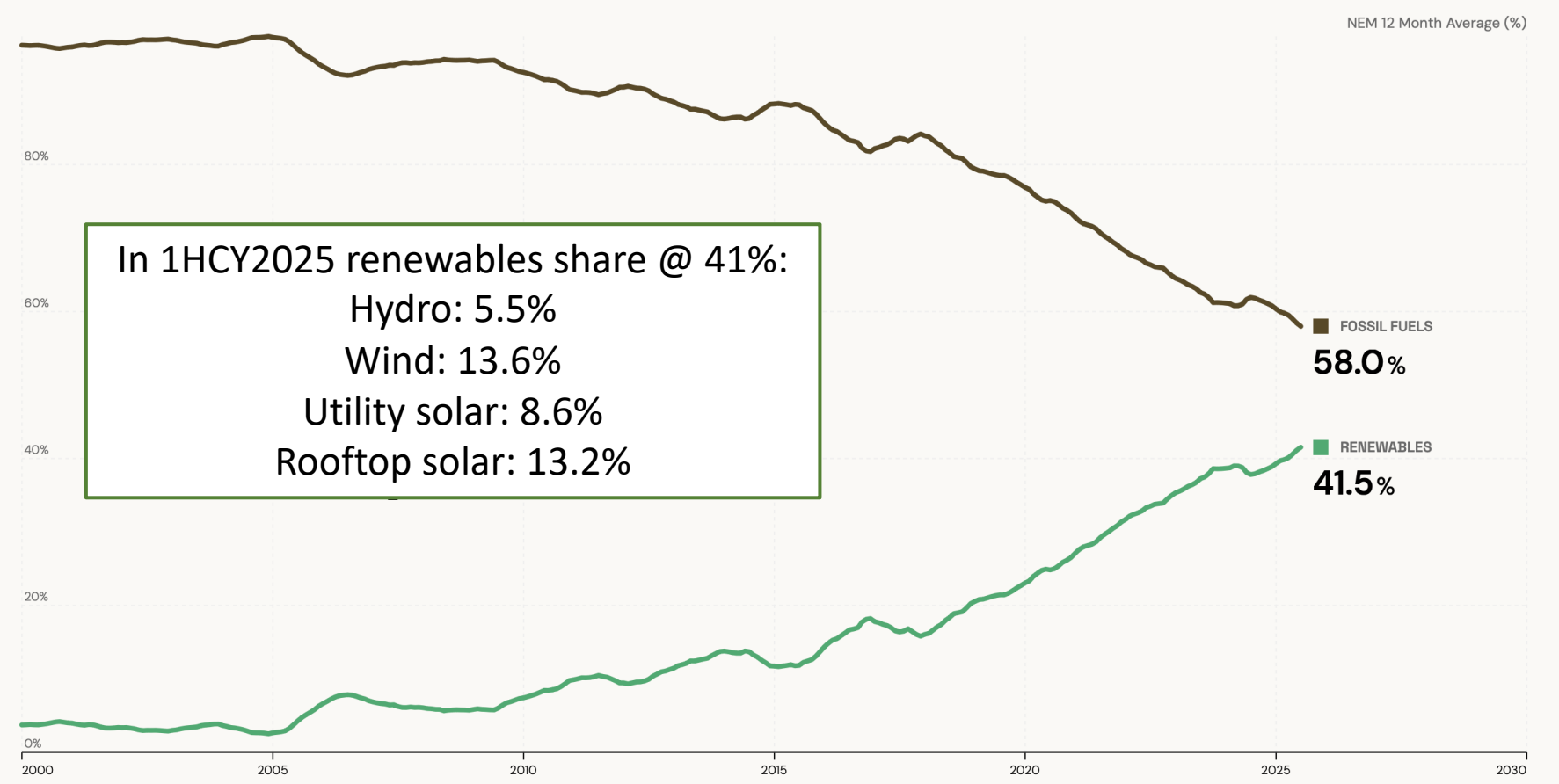
There are only four other batteries bigger than the Killawarra proposal in Western Australia – and one of them is also being built by **Trina Solar** – the **Kemerton BESS** in an industrial zone south of Perth. This is the biggest battery currently proposed for Western Australia and is a 660 MW, 2,640MWh monster. It too raced through the development approval process in just four months last year. Trina Solar expects for this to be switched on in 2026.

The approval of the Killawarra project comes just days after Victoria announced approval to Trina Solar's 500MW, 1,000MWh Kiewa Valley battery.

Renew Economy September 2025: https://reneweconomy-com-au.cdn.ampproject.org/c/s/reneweconomy.com.au/chinese-pv-and-storage-giant-trina-wins-rapid-green-light-for-another-big-solar-hybrid-project/amp/

Australia is Half-way to 82% Renewables by 2030

Australia has reached 41.5% renewable share in FY2025;
Halfway to 82% by 2030



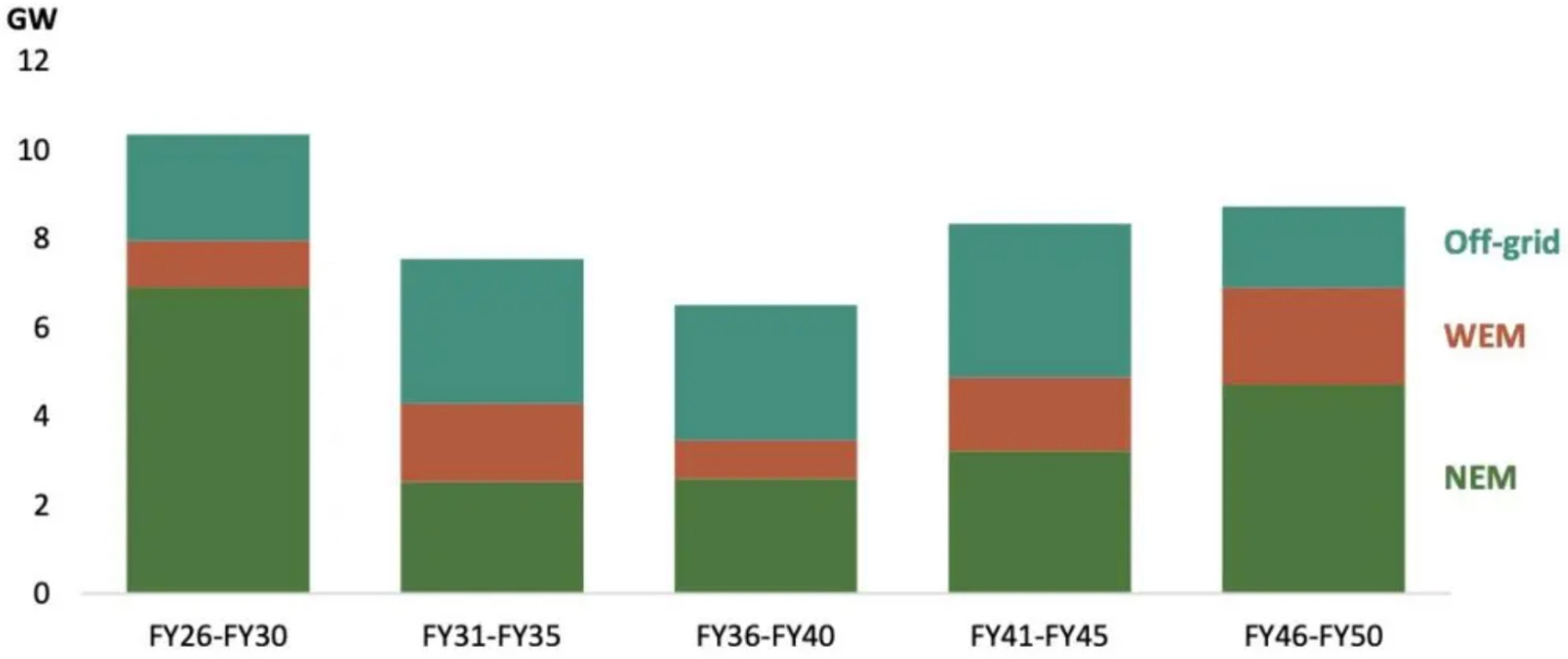
Open Electricity

Australia is Half-way to 82% Renewables by 2030

Australia needs to double VRE capacity deployments annually till 2050

Figure 3.17: A high renewable build rate will be sustained to 2050, including significant off-grid investment

Average annual VRE capacity build, GW, Baseline Scenario



Source: DCCEEW and Treasury modelling

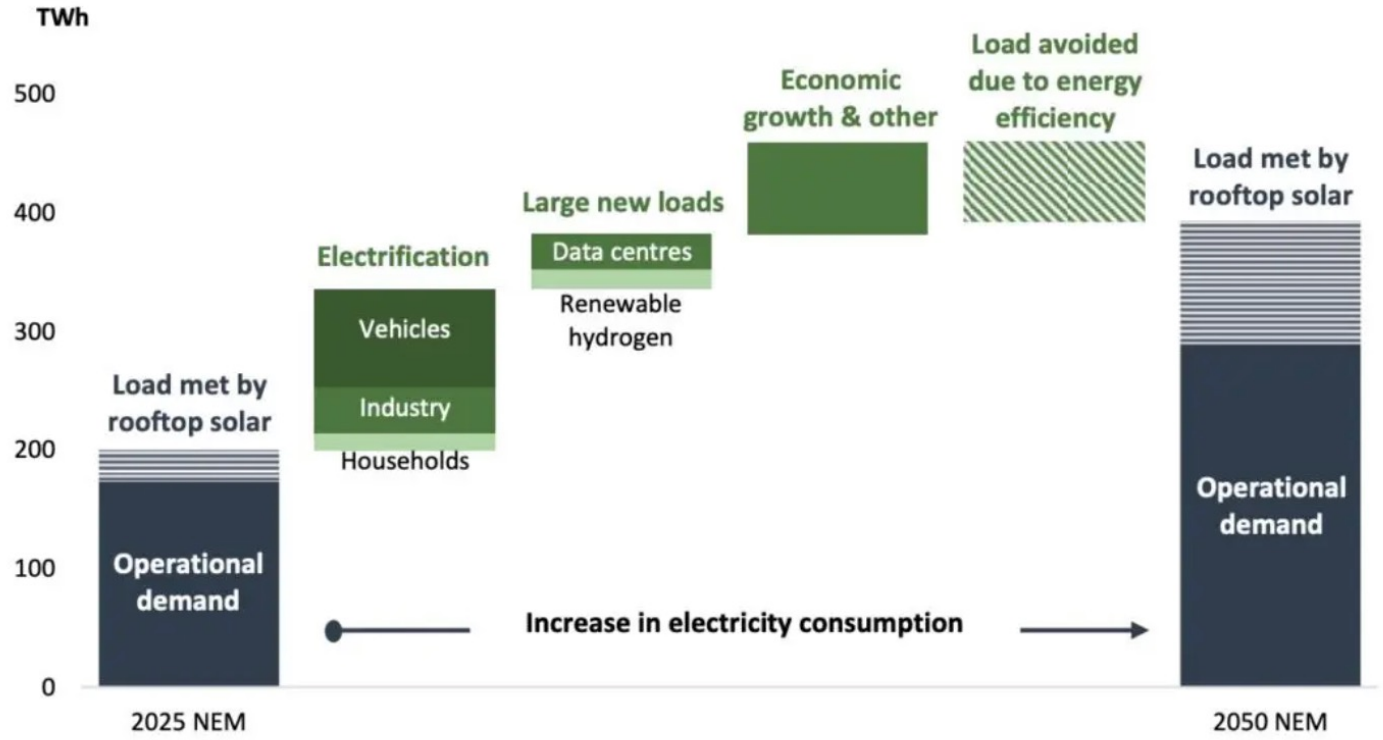
Renew Economy 19 September 2025: https://reneweconomy.com.au/cefc-to-get-new-mandate-for-rapid-rollout-of-wind-and-solar-as-australia-aims-for-97-pct-renewables/

Australia is Half-way to 82% Renewables by 2030

Progressive ‘Electrification of Everything’ builds electricity demand, and Rooftop Solar (CER) is a key Solution.

Figure 3.16: Underlying demand in the NEM will increase significantly to 2050 – with energy efficiency and rooftop solar playing an important role to limit the increase in operational demand.

Electricity consumption in the NEM, TWh, Baseline Scenario

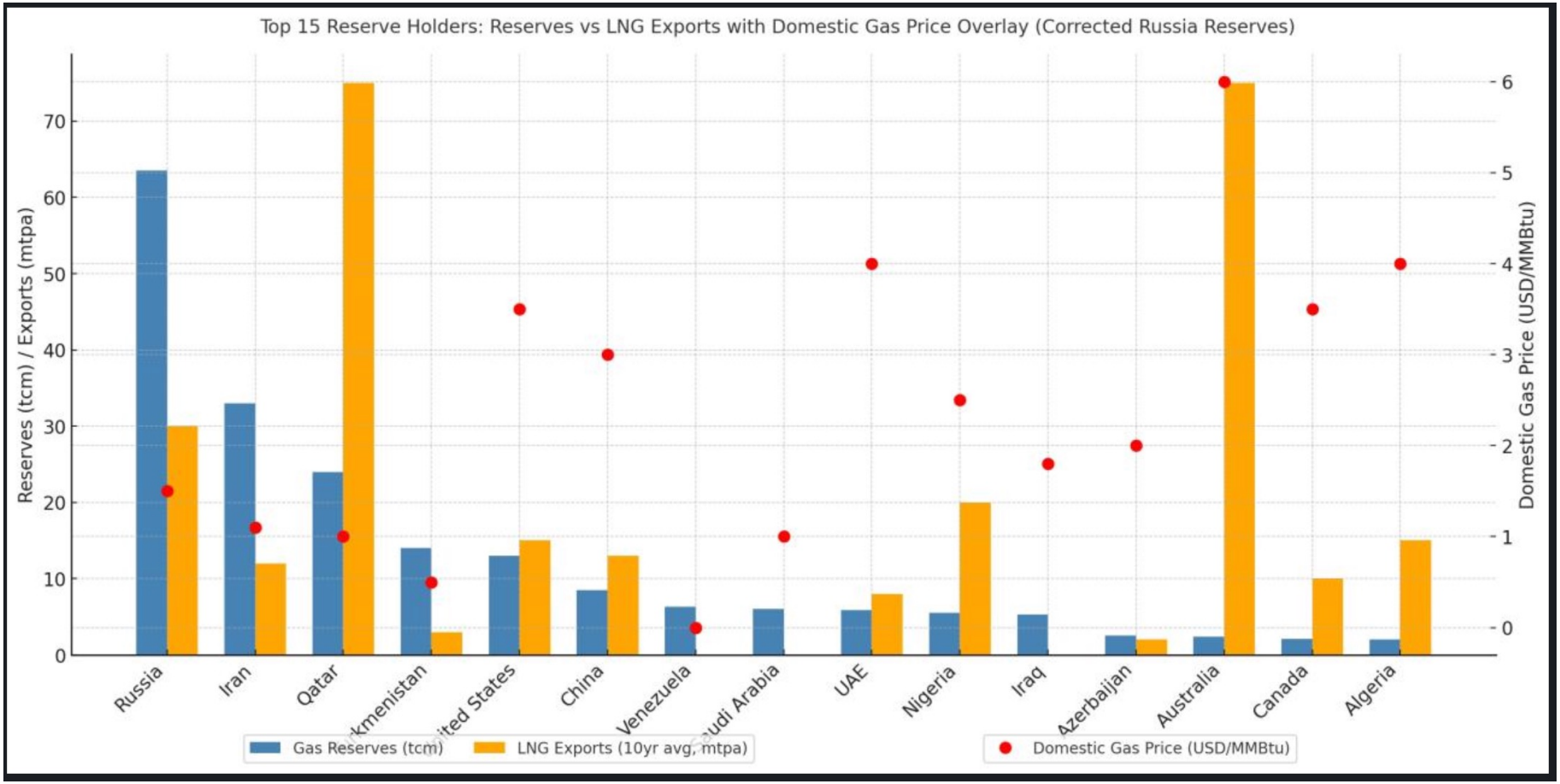


Source: DCCEEW and Treasury modelling. Note: Rooftop solar includes other distributed solar.

Renew Economy 19 September 2025: https://reneweconomy.com.au/cefc-to-get-new-mandate-for-rapid-rollout-of-wind-and-solar-as-australia-aims-for-97-pct-renewables/

Australia is Half-way to 82% Renewables by 2030

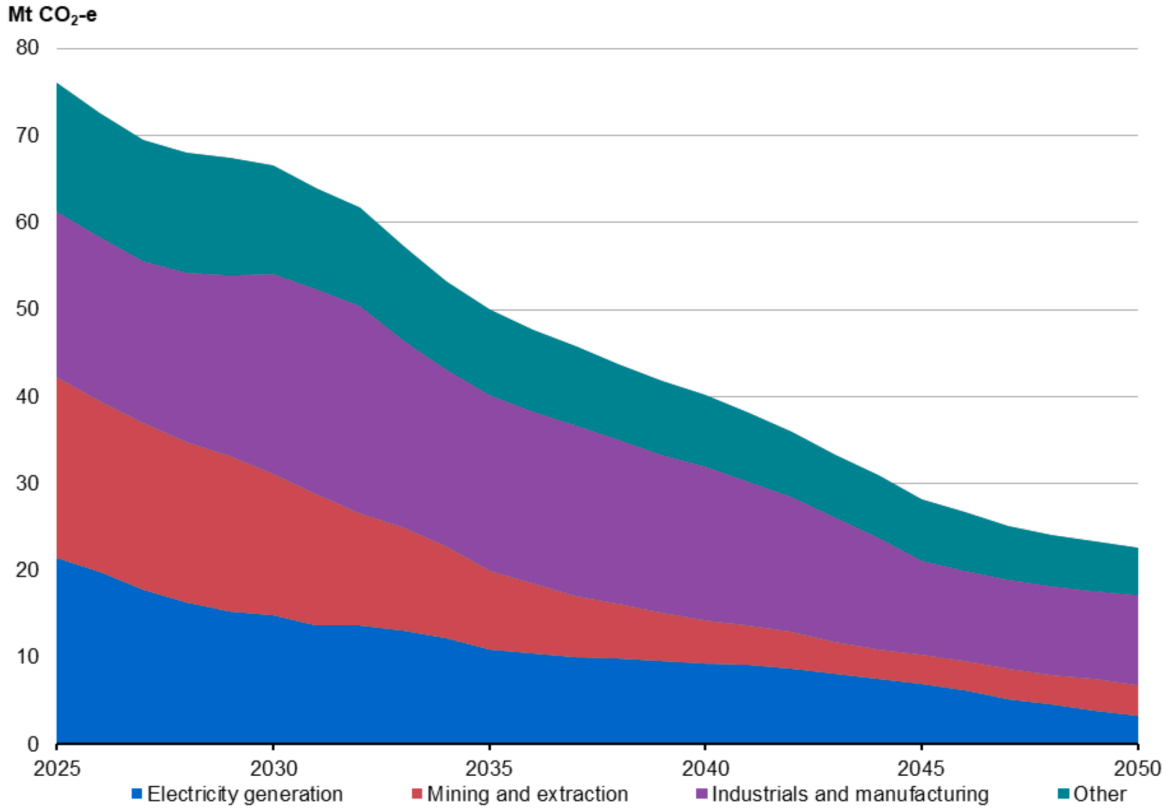
East Australia has some of the highest domestic methane gas prices in the world, massively undermining Australia's manufacturing competitiveness



Pivoting from Petrostate to Electrostate

Methane is not a transition fuel – it is a fossil fuel, and in decline

Chart 3.12: Projected emissions from domestic gas use by industry grouping, Baseline Scenario



Note: 'Other' includes agriculture, built environment, and transport industries. Some emissions reduction from the use of gas is achieved via carbon capture and storage technologies.

Source: Treasury modelling.

Source: Federal Treasury, September 2025 https://treasury.gov.au/publication/p2025-700922

Australia is Responding to China's Challenge

Strategic public capital is a key facilitator, in the absence of a CO_2 price signal

FMIA, CIS, RTN, NRF, Future Fund, CEFC, ARENA, EFA, NAIF

Capacity Investment Scheme

The Capacity Investment Scheme (CIS) is an Australian Government revenue underwriting scheme to accelerate investment in:

- 23 GW of renewable capacity representing $52 billion in investment
- 9 GW of clean dispatchable capacity representing $15 billion in investment.

South Australia

Australian Associated Press

20 Feb 2025

Troubled Whyalla steelworks gets $2.4bn government bailout as hunt for new owner begins

"Crucial support:" Federal Labor launches $2bn green aluminium production credit scheme

RENEW ECONOMY Andrew Brown Jan 20, 2025

$19bn Rewiring the Nation Fund

The $19 billion Rewiring the Nation (RTN) Fund is a significant expansion of CEFC investment capacity, with a particular focus on facilitating the timely delivery of grid and transmission projects, using CEFC capital to accelerate the benefits of grid transformation to consumers, including helping to lower consumer energy costs.

Rio Tinto says aluminium could run on renewables and batteries

FINANCIAL REVIEW Feb 6, 2025

$200 million investment in critical minerals to build Australia's future

The Hon Ed Husic MP

Minister for Industry and Science

15 January 2025

The Albanese Government's National Reconstruction Fund Corporation (NRFC) will invest $200 million in Arafura Rare Earths to help build Australia's Future.

CEF's Report Advocating for Carbon Pricing

Climate Energy Finance
05 June 2025

CLIMATE ENERGY FINANCE

A Price on Carbon: Building Towards an Asian CBAM

A focus on the harmonisation and integration of carbon pricing mechanisms in Asia-Pacific for the steel, aluminium and cement value chains.

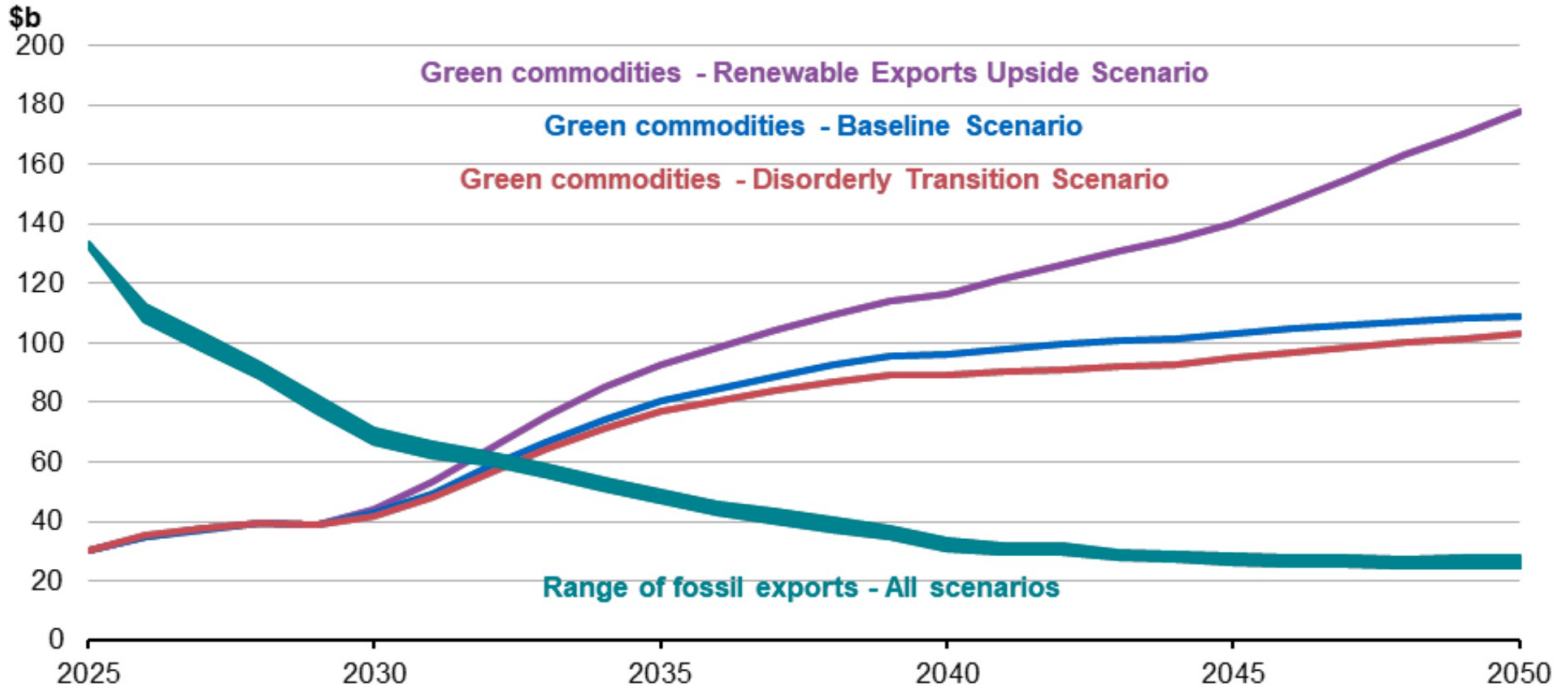
Authors:
Matt Pollard, Net Zero Transformation Analyst, CEF
Tim Buckley, Director, CEF

Source: Climate Energy Finance,
https://climateenergyfinance.org/wp-content/uploads/2025/06/CEF_A-Price-on-Carbon-Building-Towards-an-Asian-CBAM-Report_05June2025.pdf

Pivoting from Export Petrostate to Electrostate

Our Trade Balance is Fundamentally Challenged, Australia's iron ore and fossil fuel exports are expected to decline dramatically in the next 15 years

Chart 4.5: Projected value of Australian exports, 2025 to 2050



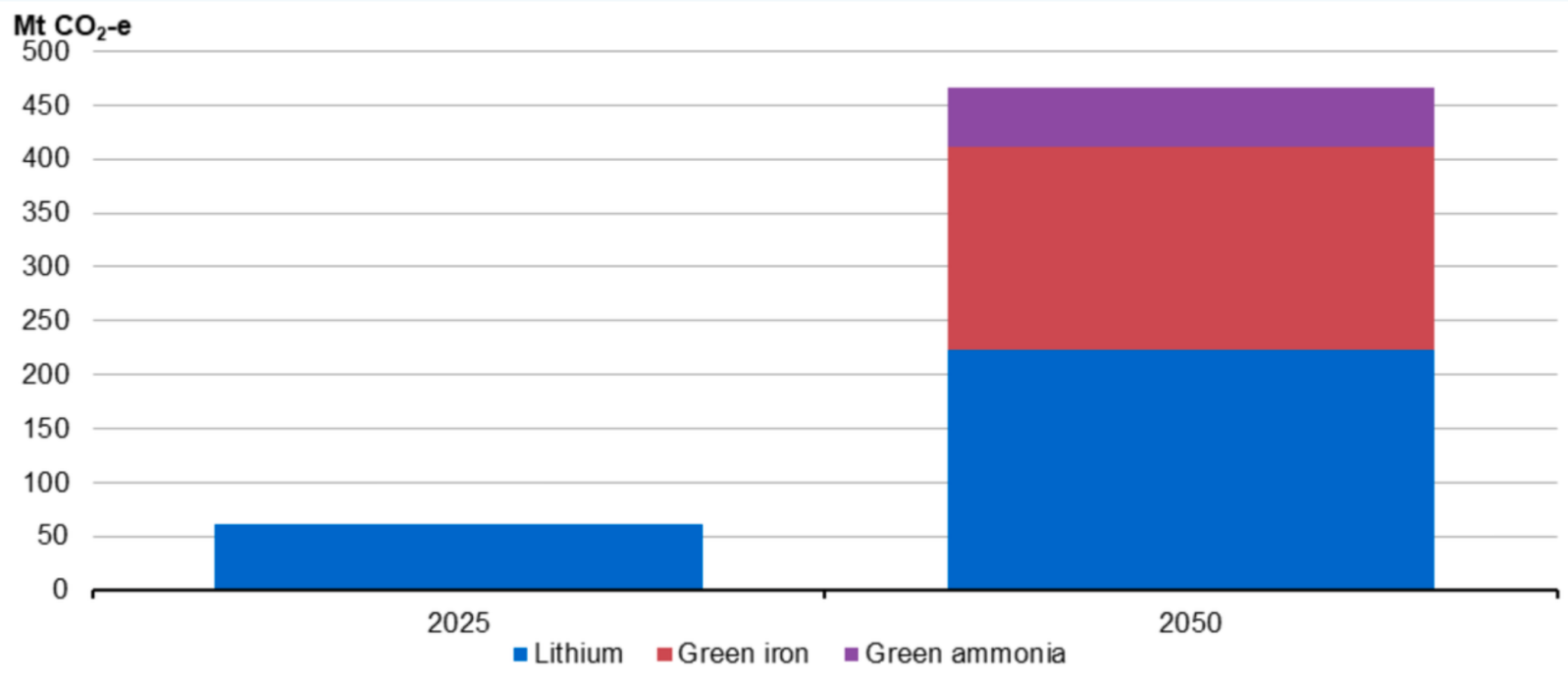
Note: Fossil fuels include coal and LNG. Green commodities are those which are broadly covered by the Future Made in Australia agenda. These include green ammonia, green iron, alumina and aluminium, and raw and refined critical minerals. These projections reflect an assessment of Australia's export potential based on a range of sources.
Source: Treasury analysis.

Source: Federal Treasury, September 2025 https://treasury.gov.au/publication/p2025-700922

Pivoting from Export Petrostate to Electrostate

The opportunity for Australia to reduce our Asian trader partners domestic emissions by >400Mtpa by 2050 is huge.

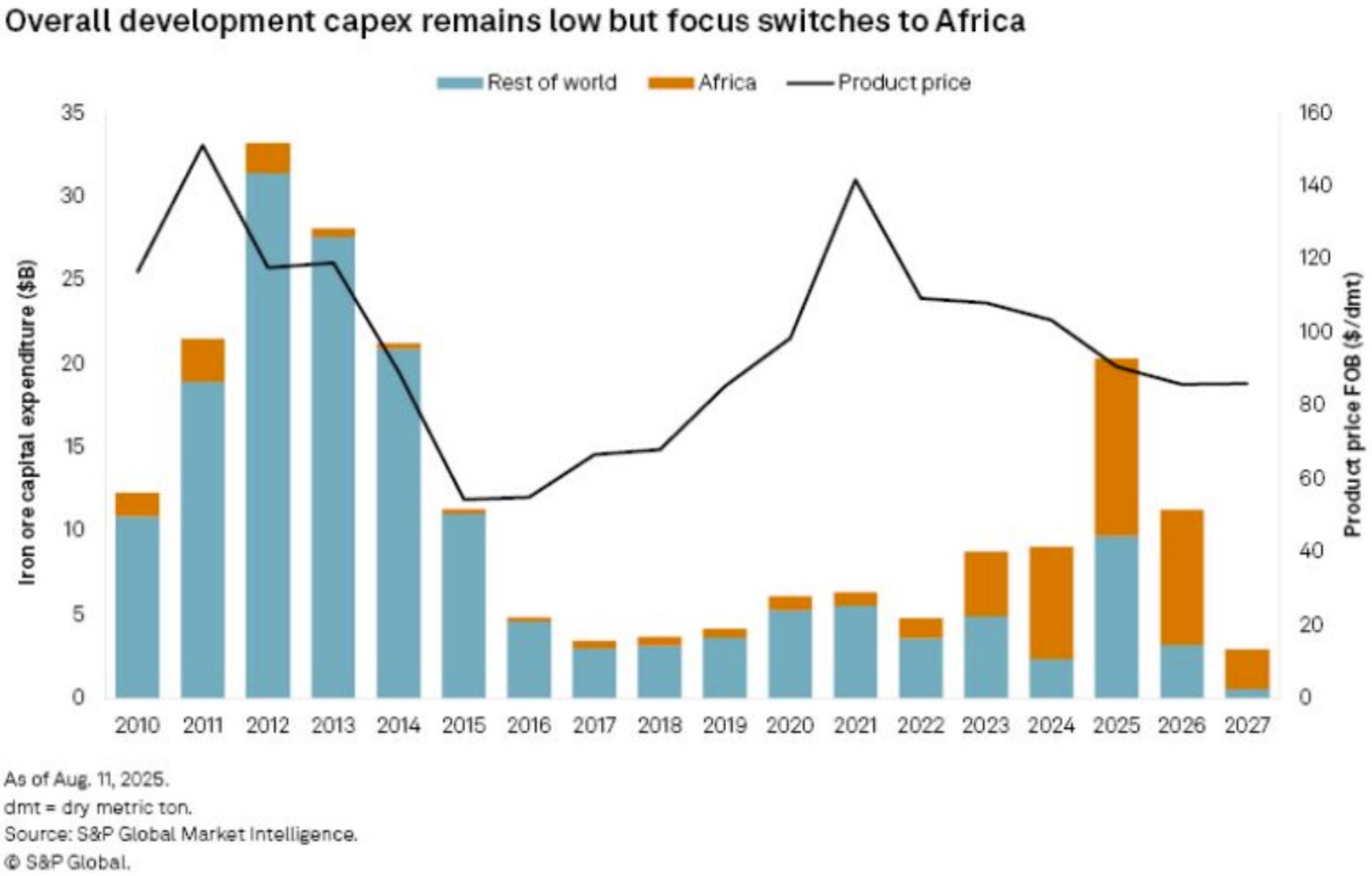
Chart 3.11: Australia's impact on global abatement, selected products, Renewable Exports Upside Scenario



Source: Federal Treasury, September 2025 https://treasury.gov.au/publication/p2025-700922

A Green Commodity Superpower? it's a Global Race!

Follow the Capex – Iron Ore Shifting to Africa



Source: S&P Global 4 September 2025 https://www.spglobal.com/market-intelligence/en/news-insights/research/2025/09/simandou-iron-ore-project-a-game-changer-for-global-supply