

Opinion

Australia can become a value-adding renewables superpower

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Energy transition Our resources industry is dig-and-ship. But we have a opportunity to be a electro-state that refines its critical minerals before export.

Australia is well-positioned to establish itself as a renewable energy superpower in the global shift from petro-states to electro-states. Electro-states will be those countries that supply energy transition materials such as critical minerals, or renewable energy. Australia can be both.

Our potential on these fronts was a key theme of last week's [National Press Club](#) address by Prime Minister Anthony Albanese and of the Energy and Climate Change Ministerial Council meeting of federal and state energy ministers.

The climate science is unequivocal: if we are to retain a liveable planet, the world must decarbonise.

As the world's second-largest exporter of coal and fifth-largest exporter of gas, this imperative has dramatic economic and moral implications for Australia.

The Russian war against Ukraine has brought the impetus for accelerated energy transition and energy independence into even sharper focus.

The transition is happening faster than predicted. The Chinese government's target published in 2021 was for electric vehicle sales to reach 20 per cent market share in 2025; this target was resoundingly beaten by sales of almost 28 per cent in 2022.

The [International Energy Agency's](#) forecast in 2020 was for worldwide solar installations to reach 150 gigawatts in 2022; this target, too, was emphatically beaten by installations that exceeded 260 gigawatts.

This rapid transition is fuelling the already booming demand for critical minerals. With clear direction and heightened ambition from the new government, Australia can be a leading supplier of critical minerals and decarbonised products as the world undertakes its epochal shift to the zero emissions future.

A report released this week by think tank Climate Energy Finance, *A Critical Minerals Value-Adding Superpower*, envisions the shape and scale of this once-in-a-century opportunity.

We already lead the world in the production of unrefined lithium, and we are among the top exporters globally of other key energy transition materials, including cobalt, copper, nickel and rare earth elements.

However, our resources industry is

dig-and-ship. Nearly all our unrefined mineral resources are sent to China, where they are refined for domestic use and to be sold to the rest of the world.

Now, two global factors are combining to facilitate Australia becoming a value-adding superpower that refines its critical minerals into high-grade chemicals and metals before export.

First, importing countries are determined to minimise their supply chain risk by diversifying their sources of supply.

Second, those same countries are increasingly looking for the refining process to be powered by low-emissions energy, such as the abundant solar and wind energy in Australia.

We also have significant potential to ship sunshine as hydrogen and ammonia, and to produce decarbonised commodities such as green iron, green fertiliser, green aluminium and green aviation fuel.

With appropriate policy support and private sector initiative, we could also build electrolyser and battery manufacturing industries.

The opportunity is immense, with annual global investment in clean technologies having raced past \$US1 trillion (\$1.48 trillion).

The word billion is inadequate to gauge the level of interest; trillion is the new black.

China maintains global dominance in almost all zero-emissions industries, including processing and manufacture of critical minerals, **batteries**, electric vehicles, aluminium, steel, nickel, polysilicon, graphite, solar modules and wind turbines, with energy transition investments totalling nearly \$US550 billion in 2022.

In the US, the game-changing Inflation Reduction Act will invest \$US400 billion to \$US800 billion in subsidies that will incentivise more than \$US1 trillion of private investment this decade in new solar and wind deployments, and turbocharge investment in critical minerals mining and refining, and battery and EV manufacturing.

The race is on. We need to act strategically, and with urgency and ambition, to get ahead of the game and accelerate investment here. If we do, Australia will be a world-class electro-state, helping to lead the transition from the industrial age to the electric age.

As chief scientist and strategic adviser to the Australian government, Alan **Finkel** led the National Electricity Market review, the National Hydrogen Strategy, the low-emissions technology road map, and the Sydney Energy Forum. His book, *Powering Up: Unleashing the Clean Energy Supply Chain*, will be published by Black Inc Books in June.

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