Global Sustainability

The critical minerals opportunity in Australia

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Australia's opportunity to be a global leader (further detail on page 2)

We hosted Tim Buckley, founder of Climate Energy Finance Australasia, and formerly Managing Director of Australasian Research, Citi Group. He emphasised that Australia has the potential to establish itself as a "renewable energy superpower" during the global shift to decarbonise, due to Australia's abundant geological reserves, the opportunity to extract more value both up and downstream, and the long-run deflationary trend of renewables. There is a significant concentration across many clean energy supply chains (see Figure 2), more so than in oil and gas. China has secured a dominant position in mineral processing, >50% of the world's global raw material processing of lithium, cobalt and graphite (IEA), manufacturing capacity of solar PV cells and EV batteries, and investment into the energy transition (see Figure 1). Other global peers have announced policies to ramp up their decarbonisation spend (see page 2). Australia and Germany have signed a joint Declaration of Intent to support a critical minerals study to help Australia develop value-added industries, and help Germany secure reliable supplies. In the opinion of our speaker, increased demand for clean energy on the back of these policies, along with a desire for import countries to minimise supply chain risk through diversification, could be a significant opportunity for Australia.

Financing needed from public and private

In the speaker's view, public-private partnerships, coupled with strategic public funding, would be an effective way for Australia to tackle critical mineral demand. In his view, strategic public investment (potentially through the Future Fund) would be an effective way to de-risk projects and send a clear signal to investors to "crowd-in" private investment. The Australian government has responded to the critical mineral opportunity through >$2B in allocated funding, outlined on page 2. The speaker highlighted that putting a price on carbon and methane is supportive to the critical minerals industry as it sends a price signal for markets to respond to through decarbonisation. This is a trend we have seen globally, with China operating the world's largest ETS since 2021, Japan's Dec-22 GX Roadmap proposed a staged ETS from 2026, the US IRA in 2022 put a US$1,500/t cost on methane emissions, and the recently passed Australian Safeguard Mechanism reforms (see here). It was the speaker's view that Australia doesn't have the funding capacity needed to meet demand by itself, however it could attract foreign investment to co-invest in these projects. He noted the importance (in his view) of scaling global trade relations, potentially through bilateral agreements with nations including Korea, Japan and India.

Tension building out renewable capacity and maintaining energy security

As we highlighted (here), we expect the "trilemma" of energy security, sustainability and affordability to remain in focus in 2023. Our speaker expects the long-run relative affordability of renewables vs fossil fuels to continue to improve (deflation), coupled with supportive government policy ramping up. However, recent events (including the war in Ukraine) illustrate weaknesses in energy supply chains impacting affordability and reliability. This is increasingly important as coal-fire power operators exit the market (and renewables enter). Despite this, UBS's global oil & gas team still expects companies to continue building their portfolios of renewable projects (see here). The speaker highlighted the important role the circular economy could play in easing the tension between building out renewable capacity and maintaining a secure energy supply. This is particularly important in regions without onshore critical mineral reserves (ie, the US and EU), as evidenced by the $2b conditional loan from the US Dept of Energy to Redwood Materials, the US's largest battery recycler (see here).

Further detail

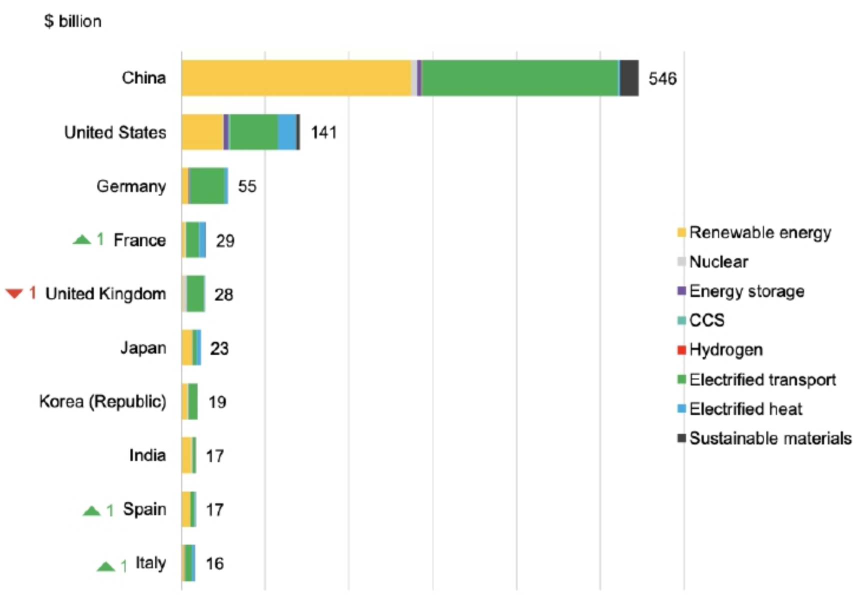
- **Australia's competitive advantage:** Australia has a competitive advantage due to its abundant geological reserves, the opportunity to extract more value both up and downstream, and the long-run deflationary trend of renewables. Despite Australia's favourable access to minerals critical to decarbonisation, such as lithium, as described by our speaker, resource companies in Australia are largely "dig-and-ship". This leaves significant opportunity for Australia to participate in the value-adding process and refine critical minerals into high-grade chemicals and metals prior to exporting or selling domestically. Our speaker also highlighted the long-run deflationary attributes of renewables, driven by technological advances, economies of scale and supportive government policies. While this long-run trend remains intact, according to our speaker, we have seen a recent uptick in the price of renewable energy, due to factors including inflation of key fossil fuels inputs, COVID-19 lockdown disruption, global renewables demand increases, the relative strength of the Australian dollar, government rebates, and the cost of shipping and labour, among others. More recently the focus has shifted to energy supply security due to geopolitical tensions caused by events such as the war in Ukraine and Covid supply disruptions.

- **Global peers increasing their decarbonisation policy and funding:** As highlighted here, the US Inflation Reduction Act (IRA) includes ~$390B (~A$550) of spending/credits over the next 10 years related to energy and climate change. The EU has committed an additional €210b (~A$350b) until 2027 through REPowerEU to diversify energy supplies and accelerate the roll-out of renewable energy. India has adopted a Production-Linked Incentive (PLI) Scheme, aimed at incentivising domestic and global companies to build capacity for sectors including High Efficiency Solar PV Modules and Advanced Chemistry Cell (ACC) Battery.

- **Australian government critical mineral funding:** The Australian government has responded to the critical mineral opportunity through the $1b allocated from the National Reconstruction Fund for value-adding in resources (see here), $2b Critical Minerals Facility (see here), and ~$100m for Critical Minerals Development Program (grants to support early and mid-stage critical mineral projects and Critical Minerals R&D Hub (see here).

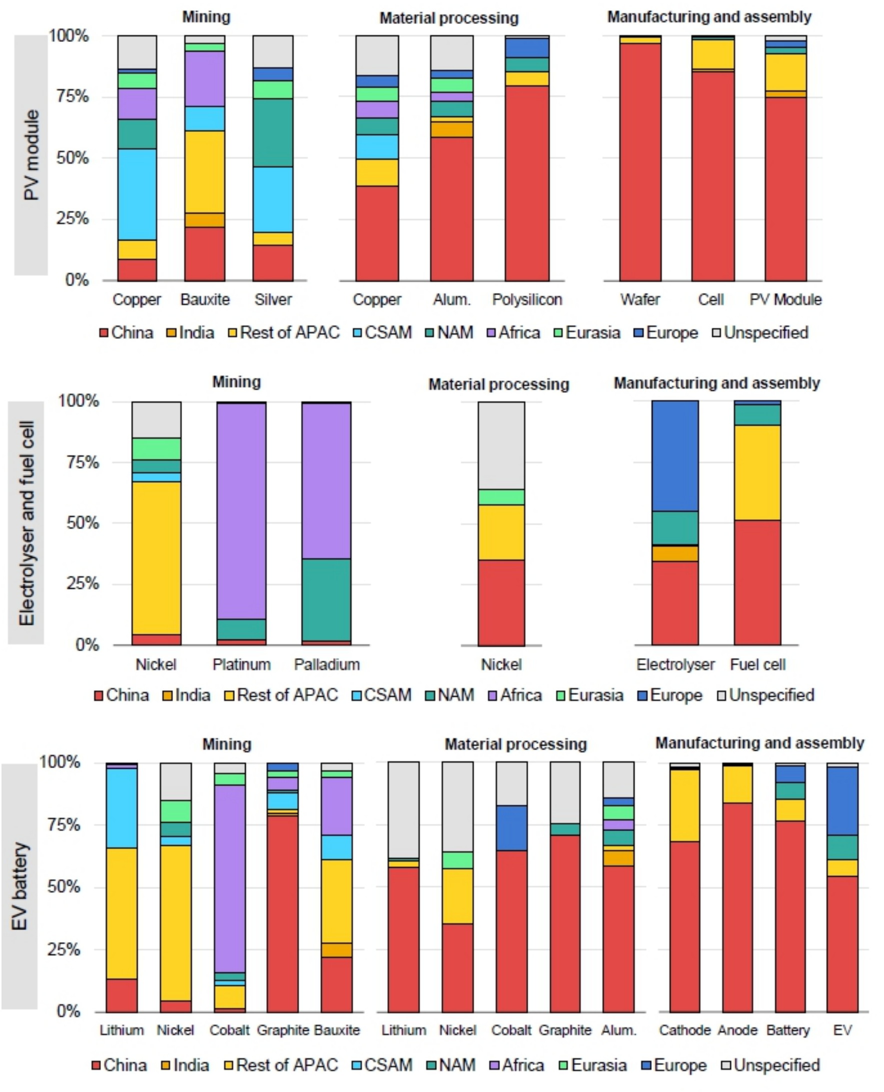
- **Making the industry attractive:** Our speaker highlighted that there is a need for the Australian government to step in and accelerate immigration, along with investing in education and training, in order to attract talent. Further emphasising the mining industry's role in decarbonisation could enhance its social license to operate and attract more capital to expand to further support decarbonisation.

Figure 1: China's 2022 Investment in Energy Transition Leads the World



Source: BloombergNEF, Energy Transition Investment Trends, January 2023

Figure 2: Geographic concentration of selected clean energy technologies by supply chain stage and country/region, 2021



Source: IEA (2022) Global Supply Chains of EV Batteries; IEA (2022) Special Report on Solar PV Global Supply Chains; and IEA analysis based on internet data and US Geological Survey (2022). Notes: NAM: North America; Rest of APAC: Asia-Pacific excluding China and India; CSAM: Central and South America. Alum: Aluminium. Although Indonesia produces around 40% of total nickel, little of this is currently used in the EV battery supply chain. The largest Class 1 battery-grade nickel producers are Russia, Canada and Australia.

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The field covers an enormous range of potential issues and, over time, their importance fluctuates. At the time of writing, we believe the issues raised in this research to be relevant to investors, but this may change. Additionally, this research should not be read as a complete or definitive account of all relevant issues for firms. Although we attempt to address all significant or nascent issues, these may not always be apparent, and these may change over time.

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Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 31 March 2023.
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