AUSTRALIA'S TRANSITION MINERALS: DIGGING IN DEEP FOR THE NEXT STAGE





Australia has an abundance of natural resources, and leads the world in mining equipment, technology and services, making it well-placed to meet surging demand for critical minerals as the clean energy transition gains pace.

"The path to net zero runs through the resources sector." Source: Minister for Resources, the Hon, Madeleine King

INDICATORS FOR GROWTH



The market size of key energy transition minerals doubled over five years to 2022, reaching

USD 320 billion.



2022.

13 Australian critical minerals saw a significant increase in their Economic Demonstrated

Resources (EDR) in



Australia is **#1 in the world** for lithium and rutile production - and in the Top 5 producers for zircon, cobalt, manganese, rare earths, nickel and tantalium.



Australia's share for world resources: Lithium 26% Nickel 23% Cobalt 19% Copper 11% Rare Earths 34%



The global energy sector's needs for critical minerals under a net-zero scenario could increase by as much as **6X by 2040**.



According to Wood Mackenzie, up to

USD 400 billion of capital expenditure on mining, refining and smelting of critical minerals is estimated to be needed by 2030.



At least <u>384 new</u> mines for graphite, lithium, nickel and

cobalt are predicted to be required to meet electric vehicle demand by 2035.



Australia currently lists 26 critical

<u>minerals</u> as essential to its technologies, economy and national security.

DEMAND DRIVERS

A typical electric car requires **6X** the mineral inputs of a conventional car.

An onshore wind plant requires **9X** more mineral resources than a gas-fired plant. The average amount of minerals needed for a new unit of power generation capacity has already





INCREASED BY 50%

as the amount of new investment in renewables increases.

Source: IEA

PRICE VOLATILITY

Prices for critical minerals tend to be volatile. The cause? A mismatch in the pace of demand and new project development as the sector shapes up

February 2024: BHP writes down the value of its nickel business by <u>AUD 5.4 billion</u> pre-tax after a supply surge from Indonesian nickel mines depresses prices Prices for other transition minerals, such as lithium, cobalt and copper are also volatile.



Sources: Bloomberg, Westpac Economics



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LITHIUM/SPODUMENE PRICES EX CHINA



Sources: Bloomberg, Westpac Economics,



Sources: Bloomberg, Westpac Economics

SIGNS OF RESILIENCE OF AUSTRALIA'S MINING SECTOR FOR THE LONG TERM

Australia's mining sector has many advantages.

<u>30 OF THE TOP 100</u>

mining equipment, technology and services companies are based in Australia, capitalising on the quality of its natural geology, which provides some of the world's largest and best mineral deposits.



Australia's advantages are underpinned by:









HIGHLY-SKILLED LABOUR

C

that supports the production and export of minerals.



REGULATION AND TAX LAWS

that are stable and well-understood.

from a foreign investment regime that provides a ready supply of capital.



PROXIMITY

to major buyers of mining outputs, especially China, India, Japan and Korea.

access to a large, diverse and highly-skilled labour force.



GLOBAL LEADING TECH

including remote operating vehicles, horizontal drilling, robotics and airborne exploration.



THE WAY AHEAD

Australia leads the way in mining automation, artificial intelligence, and analytics.

Australia has <u>the highest</u> <u>number of autonomous</u> <u>haul trucks in the world</u> with a fleet of almost 1000 The Australian mining sector aims to be a world leader in environmental, social and governance (ESG).

In December 2022 Australia joined the new <u>Sustainable Critical Minerals Alliance</u> with Canada, France, Germany, the UK and the US, pledging to adhere to high ESG standards for mining and processing critical minerals.

In its <u>Critical Minerals Strategy to 2030</u>, the government aims to attract investment to grow Australia's downstream processing capability and build diverse, resilient and sustainable global supply chains.



"Australia is well placed with our abundance of critical minerals and skills and experience in mining. But the energy transition will not be smooth and hence the pathway for the development and supply of these minerals will likely take a few twists and turns. As Australia's oldest bank and with dedicated focus on the sector, Westpac is continuing to work with companies as they navigate the ever-changing risk environment in pursuit of the growth required."

Andrew Strongman

Head of Mining & Metals at Westpac Institutional Bank

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