



Australia China Business Council
澳大利亚中国工商业委员会

Australia-China Relations
Institute
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CRITICAL FACTS, CRITICAL MINERALS AND CHINA: What Australians need to know

Critical Insight 2 :

An enduring partner: What Australians need to understand about China's contribution to Australia's critical minerals sector.

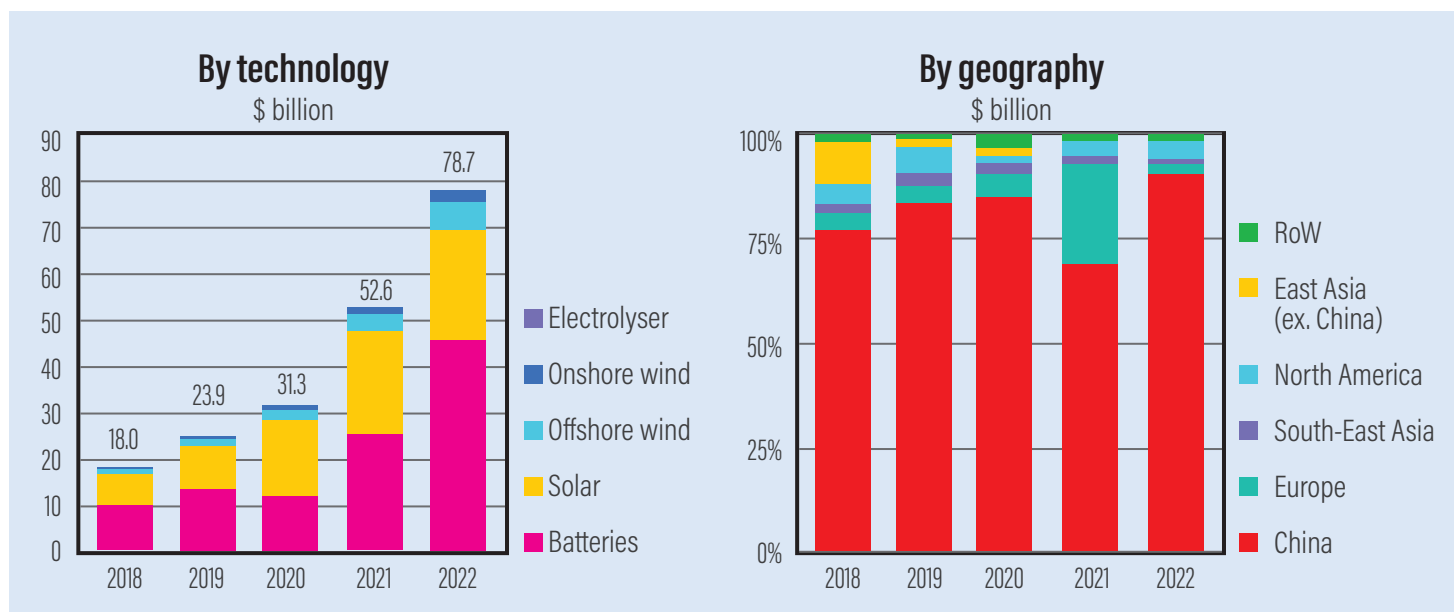
Critical facts, critical minerals and China: What Australians need to know

CRITICAL INSIGHT 2.

Understanding China's role in developing Australia's critical minerals sector

In an international environment of rising geopolitical competition, being “more assertive about encouraging investment” in Australia's critical minerals sector from geopolitically aligned countries, such as the U.S. and Japan, is sensible policy.¹ But blanket prohibitions on participation by Chinese companies would stunt the sector's resilience and sophistication. It would fail to recognise the role that patient Chinese capital and world-leading technology has played in developing Australia's critical minerals sector to date – and the economic reality that China is now leading the clean energy transition globally, accounting for 91% of total clean energy factory investment last year.² And even Australia's closest geopolitical friends have an incentive to attract value-adding activities to their own jurisdictions, potentially at Australia's expense.

Clean energy factory investment



Today, Australia is known as a powerhouse producer of lithium spodumene concentrate. But a decade ago, Australia had only one lithium mine in operation: Greenbushes in Western Australia. Prices for lithium were also in the doldrums.³ It was in this environment that Chinese companies started investing in Australia's critical minerals sector. In 2014, Chengdu Tianqi Industry Group spent \$204 million acquiring a 51% share of Talison Lithium, Greenbushes' owner. Tianqi partnered with U.S. company, Rockwood, which acquired the remaining 49%.⁴ Another U.S. company, Albemarle subsequently acquired Rockwood's share.⁵

China is now leading the clean energy transition

1. Chalmers, J. 2022, 'Address to the Australian Critical Minerals Summit, Sydney', November 25, <https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/speeches/address-australian-critical-minerals-summit-sydney>.

2. BloombergNEF, 2023, 'Global low-carbon energy technology investment surges past \$1 trillion for the first time', January 26, <https://about.bnef.com/blog/global-low-carbon-energy-technology-investment-surges-past-1-trillion-for-the-first-time/>.

3. Statista, 2023, 'Average lithium carbonate price from 2010 to 2022', August 29, <https://www.statista.com/statistics/606350/battery-grade-lithium-carbonate-price/>.

4. Businesswire, 2013, 'Rockwood to acquire 49% interest in Talison Lithium through a joint venture with Chengdu Tianqi Industry Group', December 2, <https://www.businesswire.com/news/home/20131202005410/en/Rockwood-to-Acquire-49-Interest-in-Talison-Lithium-Through-a-Joint-Venture-with-Chengdu-Tianqi-Industry-Group>.

5. Albemarle Corporation, 2015, 'Albemarle Corporation completes acquisition of Rockwood Holdings', January 12, <https://www.prnewswire.com/news-releases/albemarle-corporation-completes-acquisition-of-rockwood-holdings-300019165.html>

In 2017, Tianqi and Albemarle announced they would be investing \$320 million to expand Greenbushes' output. The following year, Greenbushes' owners poured in a further \$516 million to more than double the mine's capacity.⁶

Tianqi was not the only Chinese company putting their capital at risk while many other foreign investors stayed on the sidelines. In 2015, Jiangxi Ganfeng Lithium Co., Ltd. acquired a 25% share of the still-under-construction Mt Marion lithium project. It further underwrote the mine's commercial viability by signing a long-term offtake that included an agreed price floor and committed to purchasing 100% of the mine's output in the first three years.⁷ In 2018, Ganfeng increased its ownership stake to 50%. Ganfeng's investment was alongside Australian company, Mineral Resources, which acquired the other 50%.⁸ The Chinese and Australian owners have since funded multiple rounds of expansion in the mine's capacity.⁹

Whilst Australia produces more than 50% of the world's largely unprocessed lithium, it has been estimated to capture only 0.53% of the entire lithium value chain.¹⁰



6. Smith, S. 2018, 'More jobs as Talison tips in extra \$500m to double Greenbushes lithium expansion', The West Australian, July 25, <https://thewest.com.au/business/mining/more-jobs-as-talison-tips-in-extra-500m-to-double-greenbushes-lithium-expansion-ng-b88906961z>.

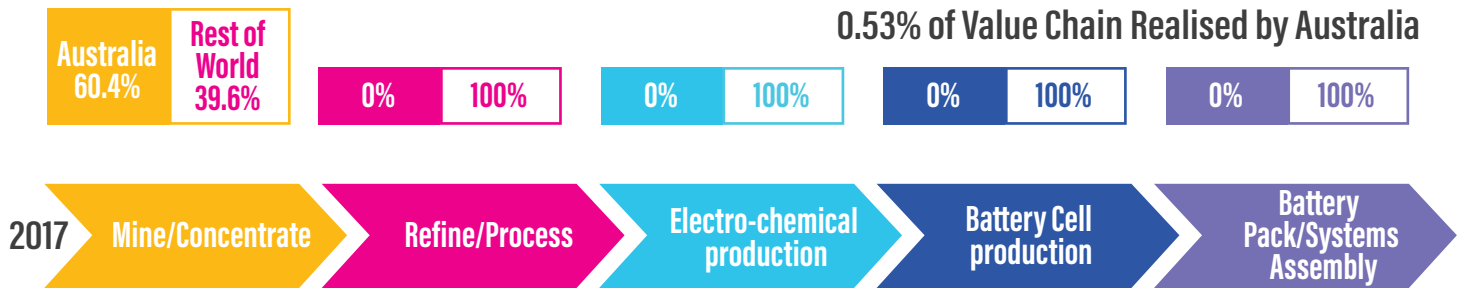
7. Neometals, 2015, ASX Release, October 29, <https://announcements.asx.com.au/asxpdf/20151029/pdf/432hssjpxqqc57.pdf>.

8. Creagh, B. 2019, 'MinRes completes Mt Marion acquisition as Neometals shifts focus', Australian Mining, March 19, <https://www.australianmining.com.au/minres-completes-mt-marion-acquisition-as-neometals-shifts-focus/>

9. Reuters, 2022, 'Australia's Mineral Resources to raise spodumene output as demand soars', April 5, <https://www.reuters.com/business/energy/australias-mineral-resources-raise-spodumene-output-demand-soars-2022-04-05/>.

10. Austrade, 2018, 'The lithium-ion battery value chain: new economy opportunities for Australia', Analysis & Policy Observatory, December 11, <https://apo.org.au/node/210341>. Notes -The shares in the original source appear to be based on total revenue at each stage of production. Ideally, shares would be calculated based on value-added revenue and also incorporate the battery reuse and recycling component of the value chain. Some mining companies assess that, at least in terms of Australia-based operations, the value-added revenue available upstream exceeds that available downstream (Evans, N. 2023, 'Mineral Resources boss Chris Ellison picks Australia over China for lithium business', The Australian, July 26, <https://www.theaustralian.com.au/business/mining-energy/mineral-resources-boss-chris-ellison-picks-australia-over-china-for-lithium-business/news-story/a0908f9c8ad6d78cb31839f38a966835>

Lithium Value Chain



To the extent that Australia has downstream capabilities, Chinese investors have played a prominent role. Australia currently has only one facility capable of transforming spodumene into battery-grade lithium hydroxide. Located in Kwinana, Western Australia, this \$700 million project was announced by China's Tianqi in 2016. In late 2020, Australian company, IGO acquired a 49% share of the venture.¹¹The project's successful completion not only leveraged Chinese capital but also lent heavily on world-leading Chinese technology and specialist construction skills.¹²The lithium hydroxide produced by the China-Australia joint-venture is now exported globally, including to South Korea's LG Chem, SK Innovation and EcoPro, as well as Sweden's Northvolt.¹³A second lithium processing facility is being built by the U.S. Albemarle in Kemerton, Western Australia. Yet Albemarle acknowledges that "a lot of the knowhow that we learn by operating in China is how we built these plants in Australia."¹⁴Australia is not alone in leveraging Chinese connections to build downstream capability. U.S. company MP Materials is currently building a rare earths processing facility in Mountain Pass, California. According to one independent expert assessment, vital to the project's development has been the contribution of Shenghe Resources, a Chinese company and one of MP Materials shareholders.¹⁵

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Geopolitical alignment will not automatically see a leap in demand for Australia's critical minerals, nor investment pour in to develop Australia's downstream aspirations.



11. McKinnon, S. Enciso, C. 2022, 'Lithium hydroxide from Tianqi's Kwinana plant comes after years of 'challenges'', The West Australian, May 20, <https://thewest.com.au/business/mining/tianqi-celebrates-first-battery-grade-product-from-kwinana-plant-c-6867542>.
 12. Ker, P. 2023, 'We're a 'like-minded foreign investor', Chinese lithium miner says', Australian Financial Review, April 17, <https://www.afr.com/companies/mining/we-re-a-like-minded-foreign-investor-chinese-lithium-miner-says-20230414-p5d0lj>.
 13. IGO, 2021, Annual report, <https://www.igo.com.au/annualreport/2021/>.
 14. Thompson, B. 2023, 'Why all electric vehicle roads leads to Australia', Australian Financial Review, March 2, <https://www.afr.com/companies/mining/why-all-electric-vehicle-roads-lead-to-australia-20230301-p5coiy>.
 15. Rachman, J. 2023, 'Japan might have an answer to Chinese rare-earth threats', Foreign Policy, August 15, <https://foreignpolicy.com/2023/08/15/japan-rare-earth-minerals-green-transition-china-supply-chains/>.

It would be naïve to imagine, for example, that if offered competitive domestic supply, then American companies would still choose to import lithium from Australia. A recent “huge lithium discovery”¹⁶ in Nevada raises this very prospect. The U.S. Department of Energy is reportedly in the throes of lending \$US1 billion to bring the project to fruition, covering up to 75% of the capital costs for construction.¹⁷

The key actors in critical minerals supply chains are private companies, meaning that commercial considerations will remain paramount. Another example: Korean mining giant, POSCO opted to build a lithium processing facility at home in Gwangyang rather than next to the Australian mine that will feed it and in which it holds an equity stake. The reason? POSCO estimated the costs per unit of output are 40% cheaper in Korea. It no doubt helped that the Gwangyang project was being bankrolled by two Korean government-owned development banks.¹⁸

There are hopes that industrial policy initiatives in geopolitically friendly capitals might be a boon for Australia's critical minerals sector, particularly its downstream ambitions. The Biden administration's Inflation Reduction Act (IRA) pays a tax credit when a battery in a qualified vehicle contains critical minerals above a specified threshold that have been extracted or processed in the U.S. – or in a country with which the U.S. has a free trade agreement, like Australia. Companies in Australia are excluded, however, from another IRA tax credit of equal value that requires final battery assembly to take place in North America.¹⁹

The bigger picture of the IRA is to drive a diversion of capital in clean energy supply chains, as well as “people and expertise to the US and know-how which is migrating to the US and not coming to places – places such as here [Australia]”.²⁰ This is not to say that Australian companies can't benefit from the subsidies and grants that Washington is offering. But doing so will usually involve setting up downstream operations in the U.S., such as the rare earths processing facility that Lynas is building in Texas. Australian business leaders invested in the clean energy transition explain that “you now have to allocate capital where it's most competitive, and that means we have to allocate capital away from Australia into North America.”²¹ Independent experts in the clean energy transition assess that the IRA's “protectionist character is bad news for Australia”.²² Australian government ministers are aware of the problem and hoping that diplomatic engagement with Washington will resolve it.²³



16. Cowan, T. 2023, 'A huge new discovery that economists were expecting', The Washington Post, September 11, https://www.washingtonpost.com/business/energy/2023/09/11/discovery-of-vast-new-lithium-deposit-in-us-shows-power-of-market/baad25be-50d2-11ee-accf-88c266213aac_story.html.

17. Lorinc, J. Natter, A. Li, Y. 2023, 'US weighing record \$1 billion loan for massive lithium mine in Nevada', Bloomberg, September 30, <https://www.bloomberg.com/news/articles/2023-09-29/us-weighing-record-1-billion-loan-for-massive-lithium-mine-in-nevada>.

18. Ker, P. 2023, 'Lithium processing is 40pc cheaper in South Korea, says POSCO', Australian Financial Review, May 22, <https://www.afr.com/companies/mining/lithium-processing-is-40pc-cheaper-in-south-korea-says-posco-20230518-p5d9k8>.

19. U.S. Department of the Treasury, 2023. 'Treasury releases proposed guidance on new clean vehicle credit to lower costs for consumers, build U.S. industrial base, strengthen supply chains', March 31, <https://home.treasury.gov/news/press-releases/jy1379>.

20. Poljak, V. Tran, J. 2023, 'Debelle bemoans distortion created by Biden's \$US1trn green bill', Australian Financial Review, February 15, <https://www.afr.com/markets/equity-markets/debelle-bemoans-distortion-created-by-biden-s-us1trn-green-bill-20230215-p5ckoz>.

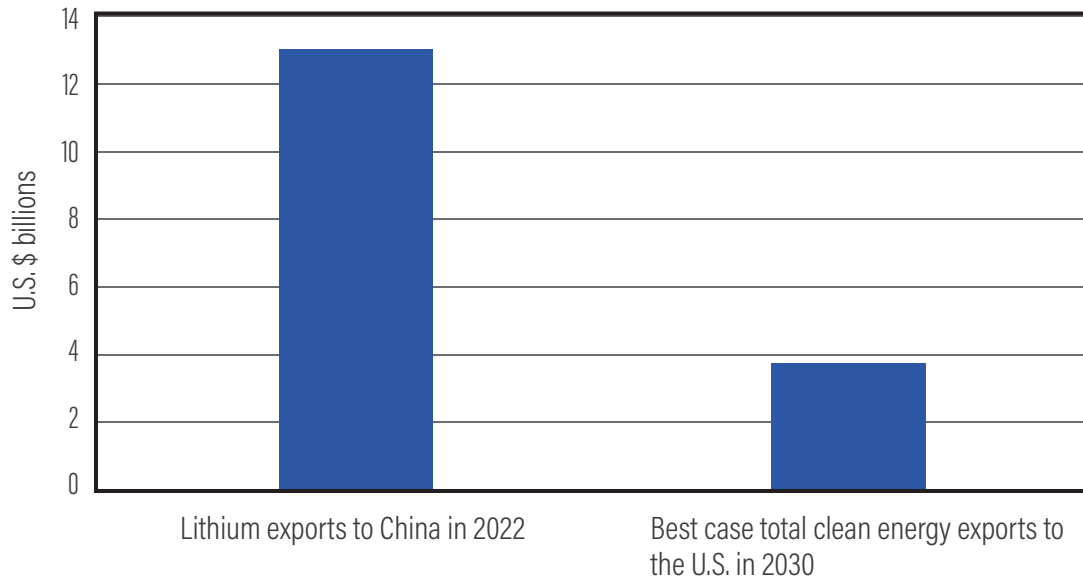
21. Hewett, J. 2023, 'US subsidies change the global energy game', Australian Financial Review, March 7, <https://www.afr.com/business-summit/us-subsidies-change-the-global-energy-game-20230307-p5cq5w>.

22. Garnaut, R. 2023, 'Australia doesn't need America's destructive green protectionism', East Asia Forum, April 3, <https://www.eastasiaforum.org/2023/04/03/australia-doesnt-need-americas-destructive-green-protectionism/>.

23. King, M. 2023, 'Q&A session with Paul Kelly at the National Bush Summit', August 15, <https://www.minister.industry.gov.au/ministers/king/transcripts/qa-session-paul-kelly-national-bush-summit>.

The need for Australia to build its economic resilience and sophistication is and should be at the forefront of Australian policy makers' attention. However, the scale of the potential upside that might flow from working more closely with geopolitically aligned countries also needs to be kept in perspective. A recent U.S. industry lobbying report touted that in a best-case cooperation scenario, Australian clean energy exports to the U.S. could grow from \$US370 million now to \$US3.75 billion in 2030.²⁴ Yet over the past year, Australian exports to China of lithium alone totaled \$US13 billion.²⁵ And out to 2030, China's demand for lithium is expected to increase by three times that of the U.S.²⁶

Australia's clean energy market opportunity



China's need to access reliable upstream supply provides a clear opportunity for Canberra, in whose possession are a range of policy levers, to advance Australia's national interests. For example, Chinese investment in local mines might be welcomed if it takes the form of a joint venture with a local partner, or approval could be conditioned on output being made available on global markets and/or supporting Australia's downstream aspirations. Investment proposals from proven good corporate citizens, like Tianqi, might also be looked upon more favourably against the "national interest test" that Canberra applies to all foreign investment. Resources Minister Madeleine King's statement in October that a company being headquartered in China would not automatically rule out its participation in Australia's critical minerals sector is an important signal in the right direction.²⁷ Last month, Trade Minister Don Farrell also emphasised that "We need investment whether its the Europeans..., the United States or China".²⁸

The more international interest in Australia's critical minerals sector, the better. This certainly involves encouraging investment and technology from geopolitically aligned countries. But framing Australia's strategy towards developing the sector principally through a zero-sum geopolitical lens that excludes China will not support resilience and sophistication objectives. Chinese companies have played an important role in developing Australia's critical minerals sector to date – and there's scope for these mutually beneficial partnerships to expand in the future.

24. KPMG, 2023, A Prosperous Future: Clean Energy – clean energy opportunities for Australia and the United States, July, <https://assets.kpmg.com/content/dam/kpmg/au/pdf/2023/a-prosperous-future-clean-energy-report.pdf>.

25. Australian Government - Department of Industry, Science and Resources, 2023, Resources and Energy Quarterly – June 2023, <https://www.industry.gov.au/sites/default/files/2023-07/resources-and-energy-quarterly-june-2023.pdf>.

26. McKinsey & Company, 2023, 'Australia's potential in the lithium market', June 9, <https://www.mckinsey.com/industries/metals-and-mining/our-insights/australias-potential-in-the-lithium-market>.

27. Ker, P. 2023, 'Australia's critical minerals list set for a major rethink', Australian Financial Review, October 10, <https://www.afr.com/companies/mining/there-s-a-big-shift-coming-to-australia-s-critical-minerals-list-20231010-p5eb29>

28. Cranston, M. 2023, 'Farrell welcomes Chinese investment in critical minerals', Australian Financial Review, November 16, <https://www.afr.com/world/north-america/farrell-welcomes-chinese-investment-in-critical-minerals-20231116-p5ekg0>

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ABOUT CRITICAL FACTS, CRITICAL MINERALS AND CHINA: WHAT AUSTRALIANS NEED TO KNOW

ACBC and UTS:ACRI collaborative project

As the Australian Federal Government implements its critical minerals strategy, the ACBC together with the UTS:ACRI have embarked on releasing "Critical facts, critical minerals and China: what Australians need to know" - a series of thought leadership analysis pieces around China's historical and potential future involvement in Australia's critical minerals and rare earths sectors.

Aside from China being a major market, it is not well known that whether it be through foreign investment, labour up-skilling or technology transfer, Chinese companies have played a crucial role in Australia's emergence in the critical minerals and rare earths sector. With China's booming green economy, the demand for such resources and interest in partnering with Australia is likely to continue and to increase. However, there have been questions raised in the Australian national debate as to whether Chinese interests are welcome in the sector. This series of analysis pieces explores and unpacks some of the history and facts that are required to have a wholistic understanding of what an ongoing presence or lack thereof of Chinese involvement in the sector is likely to mean for Australia. The views and opinions expressed are those of the authors and do not necessarily reflect the official policy or views of the ACBC. UTS:ACRI also does not take an institutional position on any issue.



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