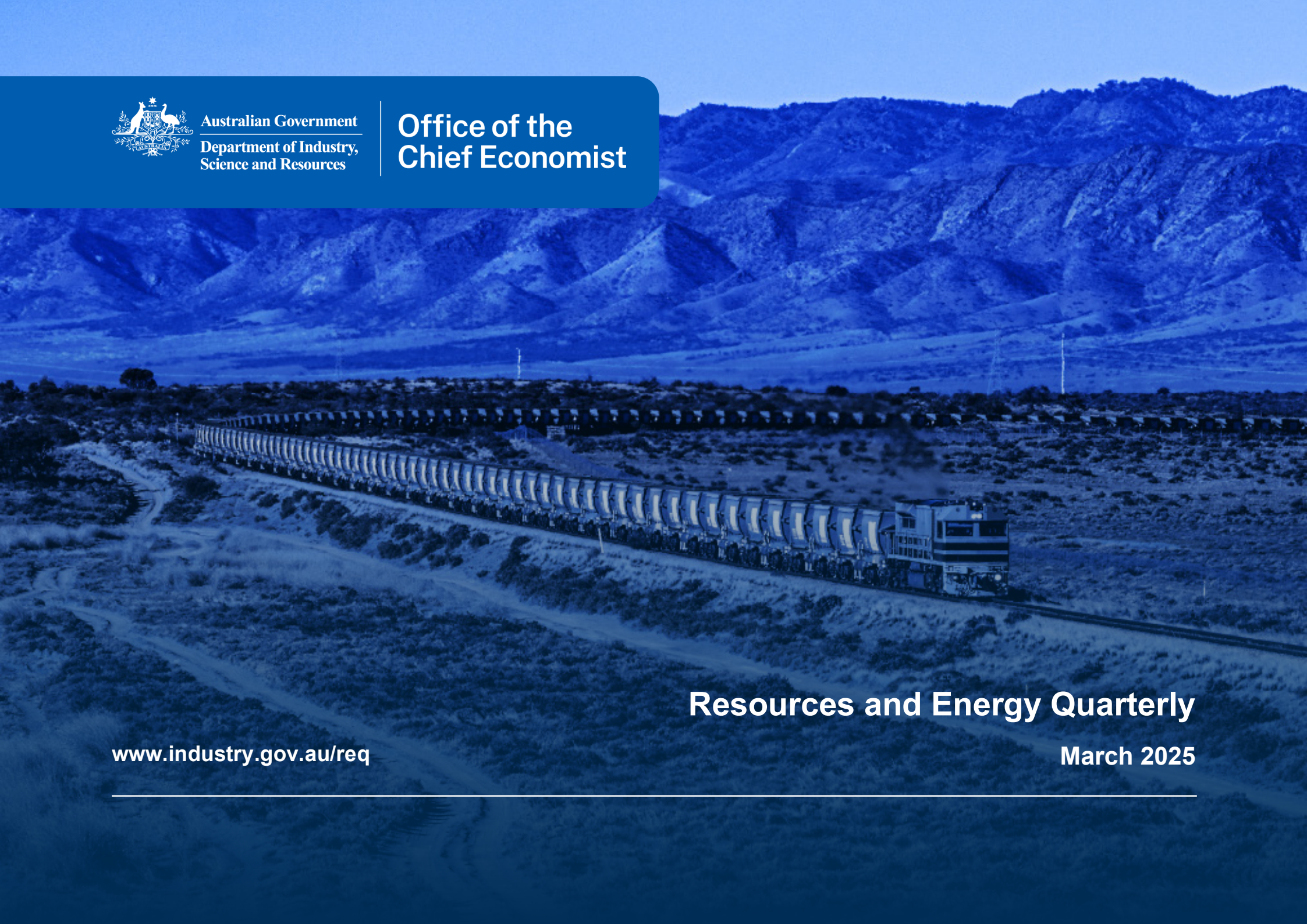

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Further information

For more information on data or government initiatives please access the report from the Department's website at: www.industry.gov.au/oce.

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Contents

Executive Summary	4
Overview	5
Macroeconomic outlook	16
Iron ore	22
Metallurgical coal	35
Thermal coal	45
Gas	54
Oil	65
Uranium	72
Gold	78
Aluminium, Alumina and Bauxite	85
Copper	95
Nickel	104
Zinc	113
Lithium	120
Emerging opportunities in critical minerals	127
Principal markets for Australia's resource and energy exports	138
Appendix A: Definitions and classifications	144
Appendix B: Glossary	146
About this edition	152

Executive Summary

Australian resource and energy commodity exports are forecast to fall to $387 billion in 2024–25 from $415 billion in 2023–24. Further modest falls in earnings are likely over the five-year outlook period, steadying at $343 billion near the end. The two-year outlook has improved since the December 2024 *Resources and Energy Quarterly* (REQ), driven by the impact of a lower-than-expected AUD/USD exchange rate and higher than expected prices for iron ore, gold and LNG.

Modest global economic growth is expected over the outlook period, as lower inflation allows some central banks to make further small cuts in official interest rates. Trade actions and retaliatory measures will likely detract from global growth and may further geopolitical tensions. Geopolitical tensions should sustain safe haven demand for gold and lift commodity price volatility, especially in energy commodities. In volume terms, most of Australia's resource exports are likely to show a modest pick up through the outlook period.

However, the impacts of trade and retaliatory actions on supply chains and trade patterns will likely be larger than on growth. Supply chain impacts will be compounded by efforts to increase sovereign manufacturing capability.

Increased global overcapacity and price heterogeneity are likely results at the global level. Changes to steel capacity and production in China will impact key Australian resources exports (iron ore and metallurgical coal). However, Australia's price and quality advantages in these raw materials means diversion to other Asian markets will likely outweigh volume decreases.

China remains a leader in a number of sectors, including solar panels, batteries, electric vehicles and metal refining. These are among the fastest growing in the world and China will likely continue to find markets for those products. This will also likely be supported by action by the Chinese Government to mitigate the impacts of changes in foreign manufacturing and industrial policies.

The energy transition will continue, although the pace remains uncertain. Policy plays a role — net zero progress may slow in some nations, reducing demand for inputs to low emissions technologies while extending fossil fuel demand. However, technology (adoption rates and innovation) will remain a key determinant of the composition and scale of commodity demand. For example, advances in battery technology are rapidly lifting efficiency, lowering cost and addressing practical barriers to mass market entry. A technical breakthrough in EV charging times in early 2025 could rapidly accelerate EV adoption rates, although the recent slump appears likely to persist in the short to medium term.

Irrespective of the pace of the energy transition, fossil fuel demand will persist. Asia remains the core growth market for LNG and seaborne coal.

The digital transition will also continue to shape commodity markets and Australia's place in them. Digital technologies' need for critical minerals inputs is contributing to the increasing focus on Australia's critical mineral export potential, which is explored in a special chapter of this edition of the REQ. Increasing energy demand from artificial intelligence and data centres is influencing energy commodity and base metal markets, especially for uranium, copper and its substitute, aluminium.

The REQ's earnings forecasts remain sensitive to the AUD/USD exchange rate. A two cent decline in the AUD/USD increases forecast 2025–26 export revenues by AUD 7.5 billion. The REQ adopts consensus on the outlook for the AUD/USD, which is for the AUD/USD to appreciate over the outlook period.

Overview

Australia's resources and energy sector

Contributes around **11.4% of GDP**

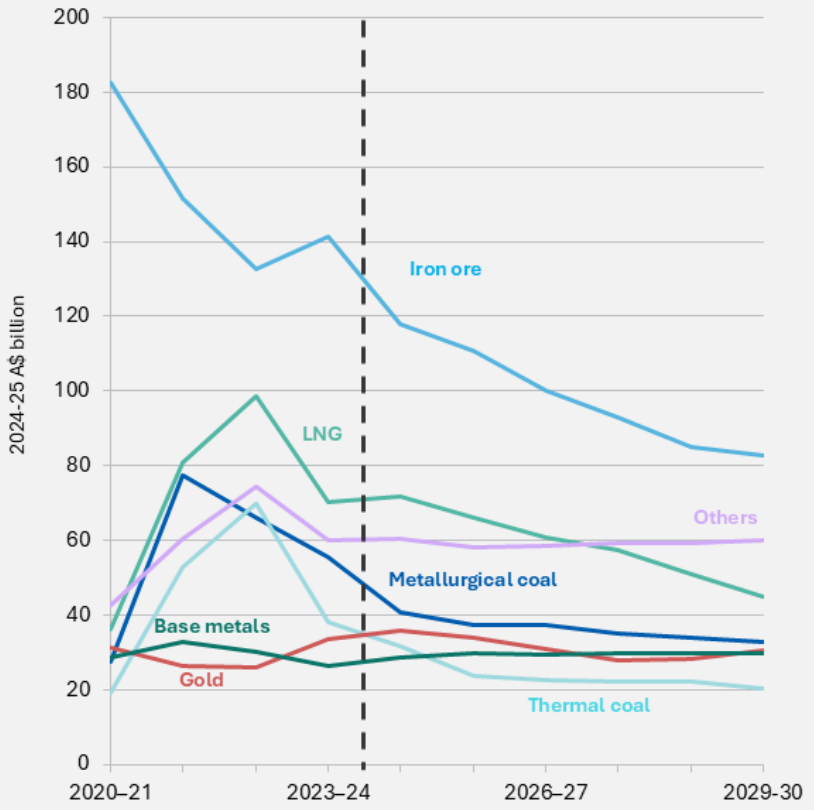
Makes up around **two-thirds** of Australia's total merchandise exports

Directly employs around 300,000 people

Outlook

- Near-term outlook for resource and energy exports is for further normalisation
- World GDP growth outlook is improving in the near-term
- Energy transition continues
- Investment in new Australian deposits and mines to grow

Australia's resources & energy exports



Source: ABS; DISR; OCE

1.1 Summary

- Modest global economic growth is expected over the outlook period, as lower inflation allows some central banks to make further small cuts in official interest rates. Trade actions and retaliatory measures will likely detract from global growth and may further geopolitical tensions.
- Trade actions and retaliatory measures will also shape supply chains, which were already impacted by policy efforts to boost resilience in the wake of COVID-induced disruptions. Continued relocation of global manufacturing capacity will likely worsen global overcapacity.
- The energy transition will continue, although the pace remains uncertain. Policy plays a role, but technology (adoption rates and innovation) will remain the key determinant of commodity demand.
- Australian resource and energy commodity exports are expected to fall to $387 billion in 2024–25 from $415 billion in 2023–24. Modest further falls are likely over the outlook period, with exports steadying at about $343 billion (or $300 billion in real terms) as the decade ends.

1.2 Macroeconomic, geopolitical and policy factors

Rising trade barriers to cut world growth slightly, lower commodity demand

Easing monetary conditions in major economies are likely to see the world economy grow at close to trend rates over the outlook period. However, changes in trade and industrial policy in early 2025 have raised uncertainty over the global growth outlook.

With trade barriers still being negotiated, and the possibility of retaliatory measures, it will take time for the full impact on the world economy to become apparent. Ultimately, world economic growth is likely to be slightly lower and inflation slightly higher (at least in the short term) than they might otherwise have been.

The impacts of trade and retaliatory actions on supply chains and trade patterns will likely be larger than on growth. Supply chain impacts will be compounded by efforts to increase sovereign manufacturing capability, which will continue the relocation of global manufacturing capacity. This will lift manufacturing activity in some nations, but lower capacity utilisation in others. Global overcapacity in manufacturing will likely worsen. As a raw material supplier, Australia will have some losses and gains and see changing demand patterns amongst our trade partners. Australia's price and quality advantages in these raw materials means diversion to other Asian markets will likely outweigh volume decreases.

Emerging economies are forecast to continue their relatively strong growth during the outlook period. These nations will consume more resource and energy commodities, with some produced at home and some imported.

The move to net zero will continue, impacting commodities

The energy transition will continue, although the pace remains uncertain. Policy plays a role — net zero aims may slow in some nations, cutting demand for inputs to low emissions technologies while extending fossil fuel demand. However, technology (adoption rates and innovation) will remain a key influence on the composition and scale of commodity demand. For example, advances in battery technology are rapidly lifting efficiency, lowering cost and addressing practical barriers to mass market entry. A technical breakthrough in EV charging times in early 2025 could rapidly accelerate EV adoption rates, although the recent slump appears likely to persist in the short to medium term.

New applications in low emission technologies are making rapid advances: extended range electric vehicles (EREVs) which house a small petrol generator surged in market share in China in 2024, due to their vastly longer range and lower cost than pure/hybrid EVs.

Rising use of artificial intelligence is likely to lift energy demand

A surge in artificial intelligence (AI) use is expected over the outlook period, with implications for resource and energy commodity demand. Despite promising efficiency gains, data centres that train and deploy large AI models require vast amounts of electricity.

The faster a nation can expand its electricity supply — also requiring large amounts of copper cable — the more AI it can deploy to gain a competitive advantage.

Geopolitical tensions to persist, lifting price volatility and gold demand

Geopolitical tensions are expected to remain elevated over the outlook period, worsened by rising trade barriers. Geopolitical tensions should sustain safe haven demand for gold and lift commodity price volatility, especially among energy commodities.

Australian dollar weakness will lift our competitiveness and export values

As a major commodity supplier, Australia — and so the Australian dollar — is seen as vulnerable to the growing push by some nations to compete with Chinese manufactures, especially in their own domestic markets. Resulting AUD weakness acts as a partial cushion against lower export values since, with most commodities priced in US dollars, it acts to boost AUD export values above where they would otherwise be.

1.3 Export values

Resource and energy exports are forecast at $387 billion in 2024–25

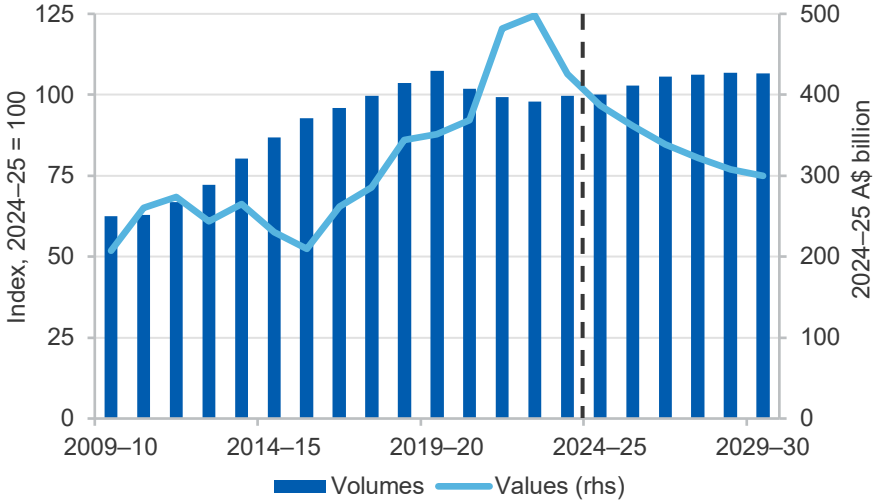
Over the past four quarters, lower prices on resource and energy export values has more than offset higher volumes. In the March quarter 2025, the Resources and Energy Export Values Index fell 2.6% from a year ago.

The impact of lower US dollar prices for our resource and energy exports is forecast to see Australia's exports fall to $387 billion in 2024–25, down 6% from $415 billion in 2023–24 (Figure 1.1). The 2024–25 estimate represents an upward revision from the December REQ, which forecast the fall at around 10%. US dollar prices have been higher than expected and the decline in the AUD/USD have contributed to the upward revision.

In real terms, exports are forecast to fall to $300 billion by 2029–30. Rising commodity supply and moderate growth in commodity demand is expected to drive US dollar price falls, which will more than offset the impact of continued minor gains in export volumes (Figure 1.2).

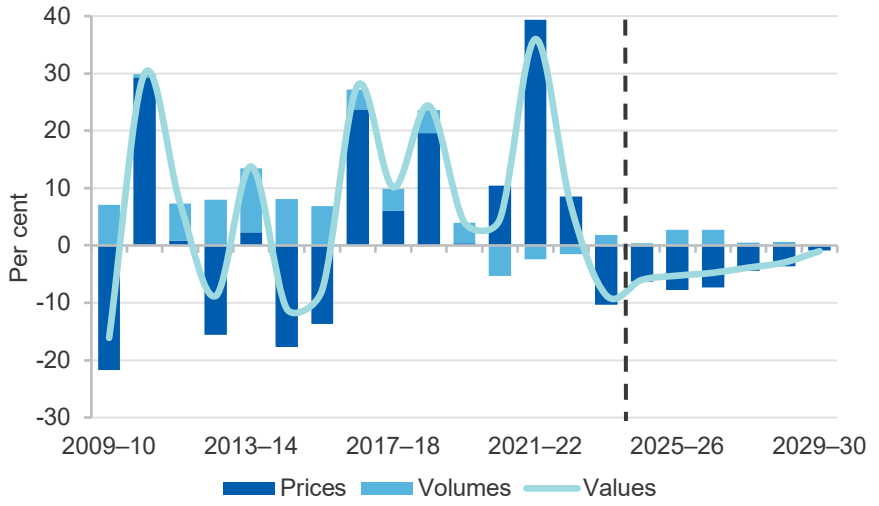
Over the outlook period, the value of energy exports is set to return to moderate levels after the extremely high levels seen during the period from 2021–22 to 2022–23. The high prices set during that period — due to the COVID-19 pandemic, bad weather and the fallout from Russia's

Figure 1.1: Australia's resource and energy export values/volumes



Source: Department of Industry, Science and Resources (2025)

Figure 1.2: Annual growth in Australia's resources and energy export values, contributions from prices and volumes



Source: Department of Industry, Science and Resources (2025)

invasion of Ukraine — encouraged a rise in energy supply. Combined with relatively moderate world economic growth and energy demand, better production conditions have since seen prices fall back. Prices are forecast to weaken modestly: rising supply will add to the impact of relatively weak demand, as the energy transition lowers fossil fuel demand.

Overall, the value of resource commodity exports is also set to fall back, albeit less than energy commodity export values. The value of exports of gold and base metals (especially copper) are set to hold close to current levels. Lithium and nickel exports are expected to stabilise as prices stop falling. Iron ore will remain the mainstay of Australian commodity exports.

1.4 Prices

Most commodity prices set to decline modestly

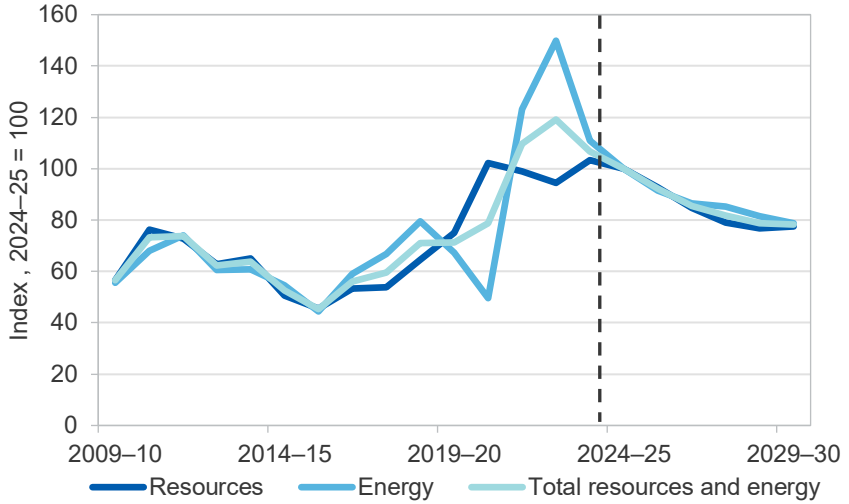
Resource and energy prices have generally drifted down further since the December 2024 REQ (Figure 1.3). The soft world economy and improved supply have lowered prices, with gold a notable exception. Prices are expected to weaken further over the outlook period. A mild pick up in the world economy would improve commodity demand, but rising global supply will more than offset the impact on prices for most commodities.

Iron ore prices have steadied at around US$100 a tonne (CFR) in recent months after falling through much of 2024. Over the outlook period, prices are expected to decline further due to strong growth in global supply and lower demand from China's steel sector.

Metallurgical coal prices have fallen about 10% from December 2024 levels to US$185 a tonne, as weak Chinese steel production weighed on domestic coal prices. Prices are expected to decline in real terms through to 2030 but remain steady in nominal terms, as falling Chinese demand is offset by increasing steel making activity in India and Southeast Asia.

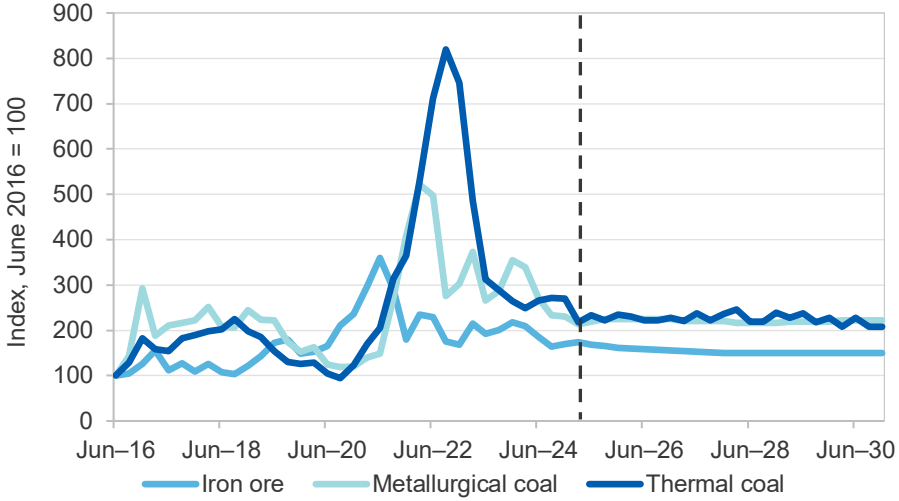
Thermal coal prices have declined further in recent months, as inventories build on the back of soft demand and rising supply. The energy transition is set to see demand remain soft over the outlook period. A lack of investment in new and existing mine capacity will slow the price falls.

Figure 1.3: Resource and energy export prices, A$ terms



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025).

Figure 1.4: Bulk commodity prices



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

The **gold** price has been very strong in recent months, rising to a record of over US$3,000 an ounce. This was due to increased demand from investors and exchange traded funds on the back of global uncertainty. Prices are forecast to increase to 2026 and then moderate but will remain relatively high over the outlook period.

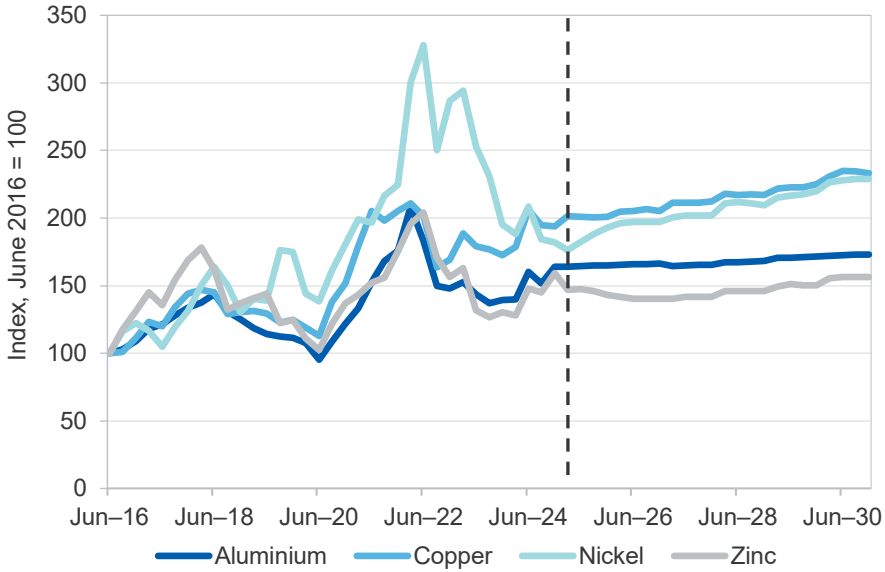
The **(Brent) oil** price has been highly volatile since the December quarter 2024, rising to US$80 per barrel from US$72 per barrel, then falling back to US$68 per barrel. Geopolitical and trade tensions have driven the volatility. Oil prices are expected to drift lower over the outlook period, as supply rises and the switch to EVs reduces demand. Seasonal demand and minor supply disruptions have held **LNG** prices up at about US$15/MMbtu over recent months. Large volumes of new US and Qatari supply will see prices steadily fall to about US$8.50/MMbtu (in real terms) by 2030. Price volatility across LNG markets is also likely to ease due to rising supply, though this may not become apparent until post 2026.

Copper prices have risen by about 11% since the start of 2025, reaching a peak of US$9,734 a tonne in early March. Over the outlook period, prices are expected to rise to about US$9,870 a tonne by 2030 in real terms, due to strong growth in copper demand and a likely tight concentrate market. **Aluminium** prices are relatively high, helped by the surge in the alumina price in 2024. While the alumina price is expected to fall back as supply recovers, the aluminium price should hold up. The demand for aluminium should remain strong in the move to low emission technologies, but supply could be constrained by high costs, particularly for power. **Zinc** prices are expected to average about US$2,800 a tonne in 2025 and then fall to US$2,600 a tonne by 2028 due to slower demand. Zinc is forecast to be US$2,700 a tonne (real terms) in 2030, due to solid demand for galvanized steel in the manufacturing and construction sectors.

Nickel prices have remained close to five-year lows so far in 2025 (averaging about US$15,500 a tonne) on continued strong growth in global mine and refined supply. This oversupply is forecast to persist over the next few years and contain prices at about US$16,500 a tonne over the outlook period.

Spodumene prices appear to have bottomed out around September 2024 and were at US$815 a tonne in February 2025. Lithium hydroxide prices have continued to fall and were at US$8,950 a tonne in late February 2025. We expect a modest price recovery in the outlook period, as demand rises and supply is trimmed by curtailments at high-cost operations.

Figure 1.5: Base metal prices



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

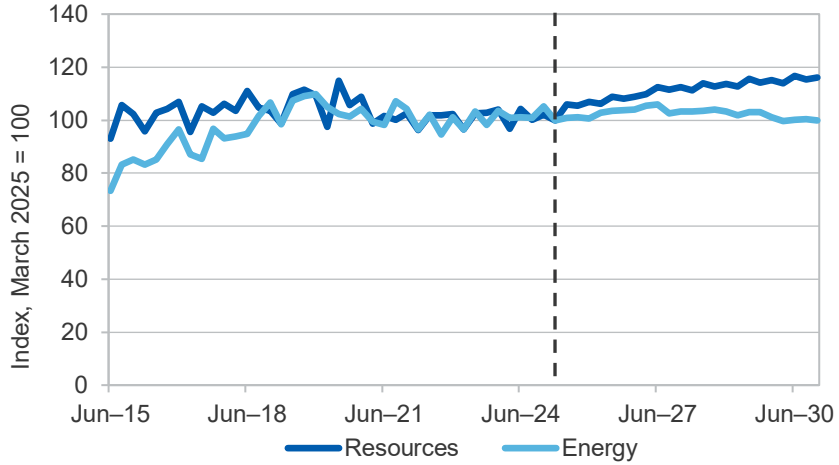
1.5 Export volumes

Resource commodity exports rising, but energy commodities flat

The Resources and Energy Export Volumes Index (preliminary estimate) fell 4% in the March quarter 2025 but was up 1% on March quarter 2024. Resource commodity volumes rose 5.3% in the year to the March quarter 2025, but energy export volumes fell almost 4% (Figure 1.6). Better weather conditions and easing workforce problems have helped resource production, while lower prices have reduced energy production.

In volume terms, most resource exports are likely to show a modest pick up through the outlook period. An improvement in world economic growth and the global energy transition will boost resource use. Growth in the volume of energy exports will be much slower than resource exports. The net zero transition will constrain fossil fuel use, and Australia may face increased competition in the markets for coal and LNG from Russia, Canada, Indonesia and the United States.

Figure 1.6: Resource and energy export volumes



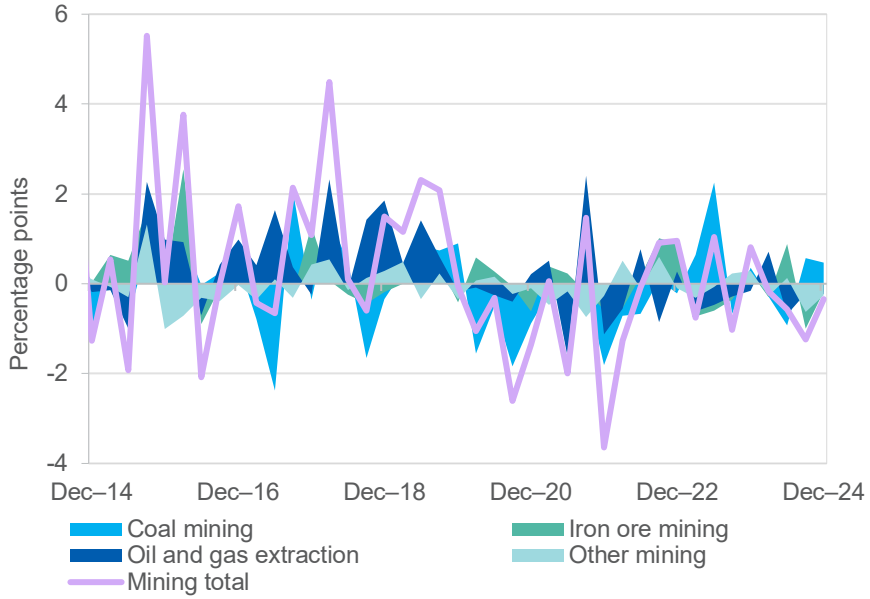
Source: Department of Industry, Science and Resources (2025)

1.6 Contribution to growth and investment

Mining output was weaker in the December quarter and 2024 overall

Australia's real GDP rose by 0.6% in the December quarter 2024, up 1.3% from a year before. Mining value-added fell by 0.3% in the quarter to be down 2.4% from the December quarter 2023 (Figure 1.7). Of the different commodity sectors, 'coal mining' was the only one to record growth, driven by higher thermal coal output. Maintenance activity adversely impacted iron ore mining, and low prices drove noticeable falls in nickel and lithium output (categorised by 'Other mining'). Exploration and Mining Support Services declined noticeably. Disruptions to LNG operations caused a fall in output in the Oil and Gas Extraction sector.

Figure 1.7: Contribution to quarterly growth, by sector



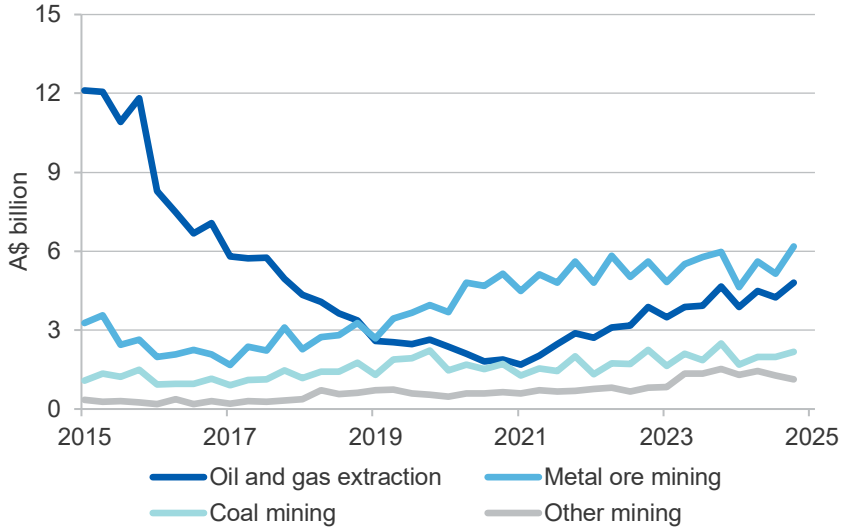
Notes: Chart data is in nominal terms, seasonally adjusted.
Source: ABS (2025) Private New Capital Expenditure and Expected Expenditure, 5625.0

Quarterly mining investment is levelling off

The latest ABS Private New Capital Expenditure and Expected Expenditure survey shows that Australia's resources and energy industries invested $13.0 billion in the December quarter 2024, unchanged from the September quarter 2024 but down 2.7% from the December quarter 2023. Total capital spending rose in quarterly terms for metal ore and oil and gas mining but spending by 'other mining' declined (Figure 1.8).

Expenditure for plant and equipment rose by 1.9% in the December quarter, while investment in buildings and structures fell by 0.7% (Figure 1.9). Both categories have recovered significantly from the lows of 2021. Spending on plant and machinery has accounted for a steadily rising share of total investment spending since 2017. However, in recent years, spending on buildings and structures has started to correlate more closely with spending on plant and equipment.

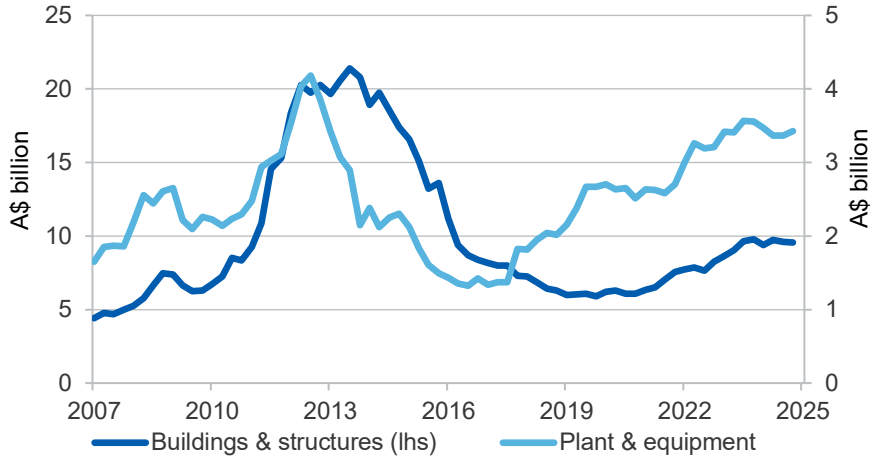
Figure 1.8: Mining capex by commodity, not seasonally adjusted



Notes: Other mining includes non-metallic mineral mining and quarrying and exploration and other mining support services; chart data is in nominal, original terms

Source: ABS (2025) Private New Capital Expenditure and Expected Expenditure, 5625.0

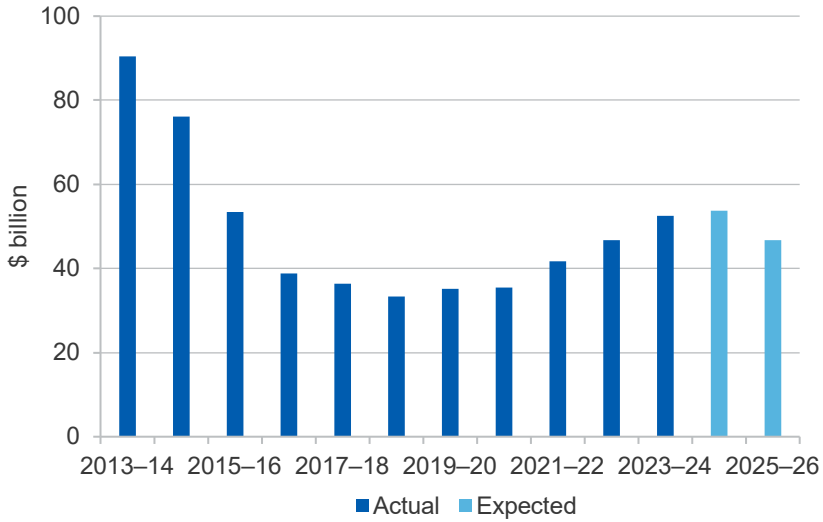
Figure 1.9: Mining industry capital expenditure by type, quarterly



Notes: Chart data is in nominal terms, seasonally adjusted.

Source: ABS (2025) Private New Capital Expenditure and Expected Expenditure, 5625.0

Figure 1.10: Mining industry capital expenditure, fiscal year



Notes: Chart data is in nominal terms

Source: ABS (2025) Private New Capital Expenditure and Expected Expenditure, 5625.0

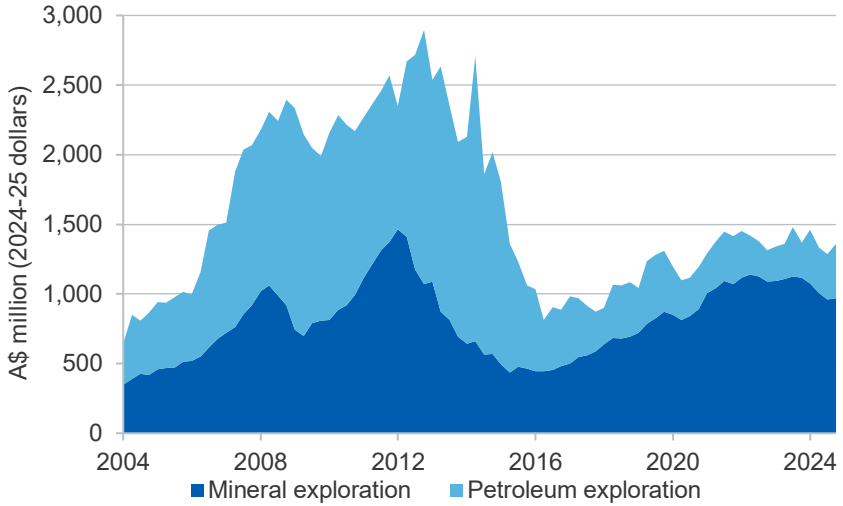
Total mining industry investment forecast to rise in 2024–25

The sixth estimate of total mining industry investment in 2024–25 shows growth of 12% from 2023–24 (Figure 1.10). The first estimate for 2025–26 ($47 billion) points to a decline in capital spending, but estimates are typically revised up over time. In the outlook period, capital expenditure in the lithium and nickel sectors are expected to be weak, as miners react to ongoing relatively weak prices.

Exploration spending steady in 2024, as declining mineral exploration was offset by growth in petroleum exploration

Australian mineral and petroleum exploration expenditure tracked steady in 2024, reaching $5.3 billion. Expenditure increased in both onshore (up 33%) and offshore (up 34%) petroleum exploration, however levels remained well below the pre-2015 peak (Figure 1.11). Mineral exploration spending offset much of this growth, declining by 7% to $3.9 billion.

Figure 1.11: Australian exploration expenditure, quarterly



Notes: Exploration expenditure is in real, seasonally adjusted terms.
Source: ABS (2025)

Annual rises in exploration expenditure were reported for iron ore (up 9.9%) and uranium (up 53%), but spending fell across all other mineral categories. Commodities accounting for the largest share of the fall were base metals, including nickel (down by 38%) and copper (down by 19%), other minerals (including lithium, down by 22%) and gold (down by 11%).

Over the last twelve months, mineral exploration expenditure has declined for critical minerals such as lithium, cobalt and nickel, due to recent sharp price declines. This follows strong price and exploration expenditure growth for these minerals through 2022-23. By contrast, gold exploration has fallen from a peak in 2021 despite prices rising to record levels.

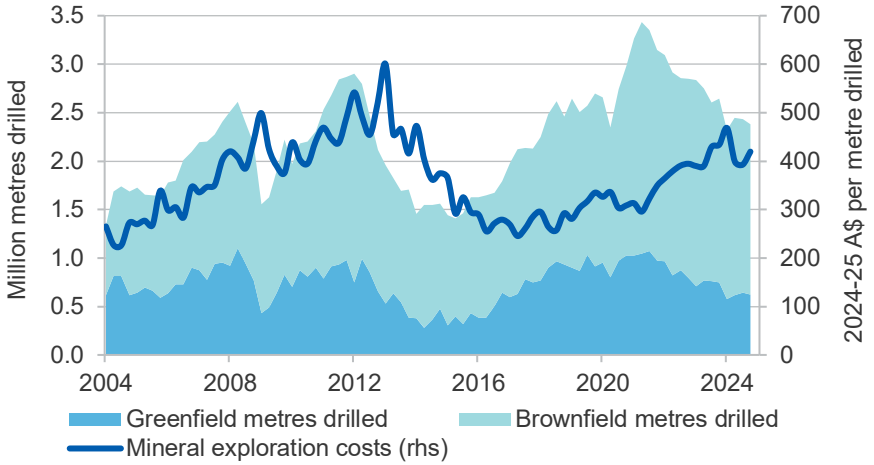
Within exploration project stages, declines were reported for both greenfield and brownfield expenditure in 2024, an extension of trends over the past few years (Figure 1.12). Greenfield exploration activity (measured by metres drilled) has declined by 40% from a peak in 2021, while brownfield activity has declined by 22% over the same time.

Increased exploration costs appear to be contributing to this decline. Average expenditure per metre drilled has increased in real terms by 31% since 2021 — although they remain below levels reached during the peak of the mining boom (Figure 1.12). Tightened financial conditions and economic uncertainty have also reduced investment flows into the exploration sector — particularly for junior mineral exploration companies, and greenfield exploration (which is higher risk).

Relatively buoyant metal prices and a steady easing in global financial conditions (as monetary policy loosening is continued in some major nations) may help support renewed exploration activity. The rising use of new technologies (such as advanced data science/AI and pre-competitive geoscience) may assist in mitigating the cost burden of drilling programs.

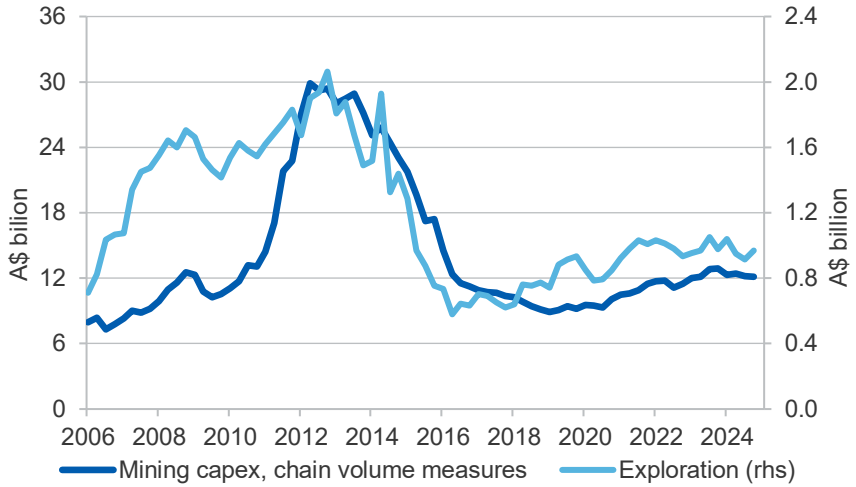
Exploration spending is a leading indicator of broader capital investment in the sector, so prolonged rises/declines in exploration spending can give some indication of future trends in mining investment (Figure 1.13). With exploration holding close to the post-COVID average, we might expect mining capex to also hold near current levels (at the $12 billion mark).

Figure 1.12: Metres drilled for mineral exploration and costs (in real terms) implied by expenditure per metre drilled



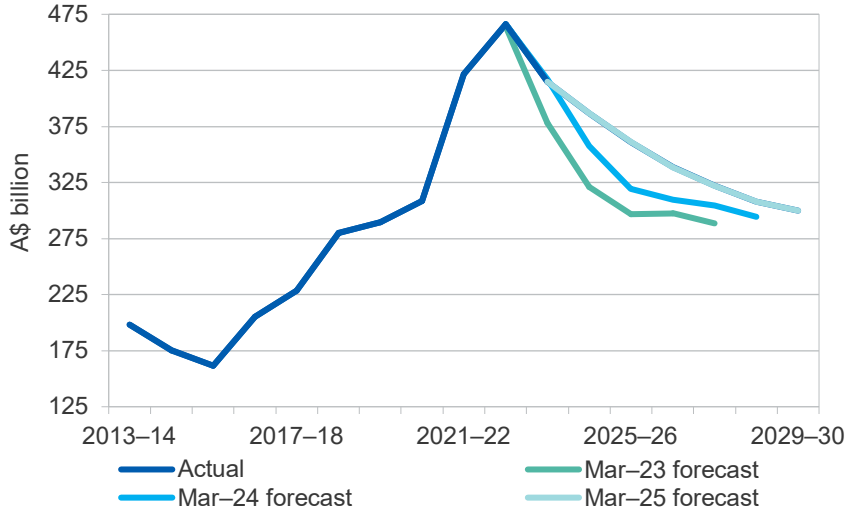
Notes: Metres drilled are in seasonally adjusted terms
Source: ABS (2025); Department of Industry, Science and Resources (2025)

Figure 1.13: Mining capex vs exploration spending, quarterly



Notes: Exploration expenditure is in seasonally adjusted terms
Source: ABS (2025)

Figure 1.14: Resource and energy exports, real terms by publication



Source: Department of Industry, Science and Resources (2025)

1.7 Revisions to the outlook

AUD/USD weakness and gold strength helping to hold up export values

The forecast for Australia's resources and energy exports in 2024–25 is $15 billion higher than the forecast contained in the December 2024 *Resources and Energy Quarterly* (Figure 1.14). The forecast for 2025–26 (nominal prices) is $23 billion higher than in the same report.

Compared to the March quarter 2024 REQ, export values later in the outlook period are also holding up better than expected. The forecast for 2028–29 exports is $8 billion above the March 2024 REQ projection.

The 2024–25 and 2025–26 upwards revisions and the projections further out the forecast period have been largely driven by the impact of a weaker than expected exchange rate against the US dollar (AUD/USD) and higher prices for iron ore and LNG. As always, the exchange rate assumption (taken from Consensus forecasts) plays an important role in the projections. In broad terms, a two cent move in the AUD/USD has a $7.5 billion impact on 2025–26 Australian dollar export revenues.

Table 1.1: Outlook for Australia's resources and energy exports in nominal and real terms

Exports (A$m)	2023–24	2024–25[f]	2025–26[f]	2026–27[f]	2027–28[f]	2028–29[f]	2029–30[f]	% change CAGR[f]
Resources and Energy	414,991	386,664	373,371	359,565	350,554	343,682	343,215	-3.1
– real[b]	425,447	386,664	361,270	338,399	321,872	307,865	299,949	-5.7
Energy	180,151	163,169	149,735	145,370	140,891	134,521	127,573	-5.6
– real[b]	184,690	163,169	144,882	136,813	129,363	120,502	111,491	-8.1
Resources	234,840	223,495	223,636	214,195	209,663	209,160	215,642	-1.4
– real[b]	240,757	223,495	216,388	201,587	192,509	187,363	188,458	-4.0

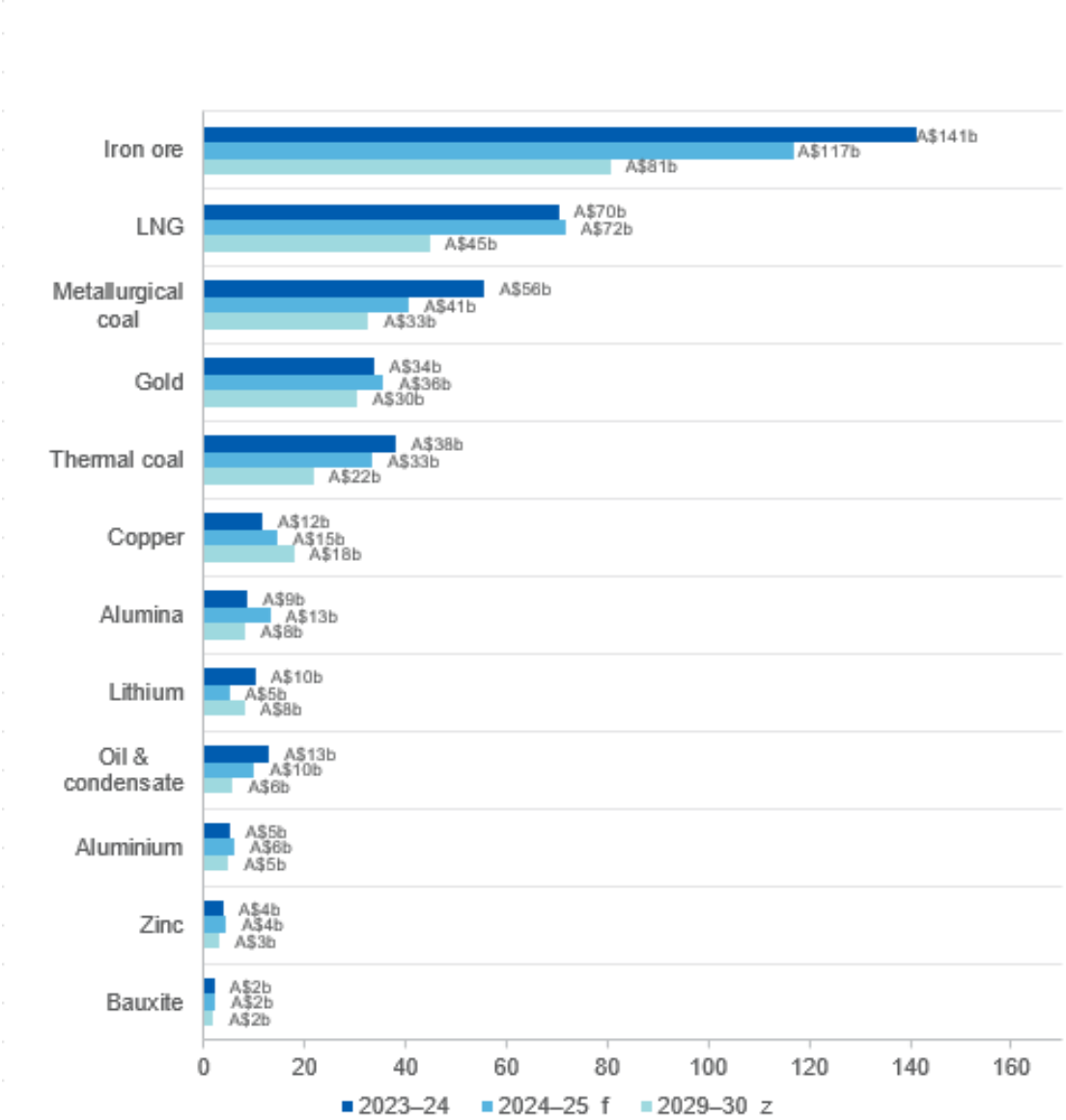
Notes: **b** In 2024–25 Australian dollars; **f** forecast.
Source: ABS (2025); Department of Industry, Science and Resources (2025).

Table 1.2: Australia's resources and energy exports, selected commodities

	Prices				Export volumes				Real export values A$b, 2024-25 prices		
	Unit	2023–24a	2024–25f	2029–30f	Unit	2023–24a	2024–25f	2029–30f	2023–24a	2024–25f	2029–30f
Iron ore	US$/t	103	86	76	Mt	898	902	936	141	117	81
LNG	A$/GJ	16	17	12	Mt	81	80	78	70	72	45
Metallurgical coal	US$/t	285	204	202	Mt	151	156	169	56	41	33
Thermal coal	US$/t	136	127	113	Mt	205	213	199	38	34	22
Gold	US$/oz	2,079	2,668	2,405	t	258	230	320	34	36	30
Crude oil	US$/bbl	85	74	64	Kb/d	264	246	206	13	10	5.7
Copper	US$/t	8,680	9,356	10,806	Kt	753	865	1,137	12	15	18
Lithium	US$/t[b]	1,833	835	1,300	Kt[c]	431	478	578	10	5.2	8.2
Alumina	US$/t	363	580	424	Kt	15,877	15,040	16,632	8.7	13.2	8.3
Aluminium	US$/t	2,266	2,530	2,699	Kt	1,432	1,527	1,554	5.2	6.2	4.9
Zinc	US$/t	2,552	2,867	2,937	Kt	1,327	1,285	1,173	3.9	4.5	3.1
Nickel	US$/t	18,149	15,992	19,675	Kt	150	55	89	3.6	1.2	1.5
Uranium	US$/lb	82	73	98	t	5,742	6,039	8,305	1.2	1.4	1.7

Notes: **a** Export data covers both crude oil and condensate; **b** Spodumene; **c** Lithium carbonate equivalent **f** forecast. **Price information:** Iron ore fob (free-on-board) at 62 per cent iron content estimated netback from Western Australia to Qingdao China; Metallurgical coal premium hard coking coal fob East Coast Australia; Thermal coal fob Newcastle 6000 kc (calorific content); LNG fob Australia's export unit values; Gold LBMA PM; Alumina fob Australia; Copper LME cash; Crude oil Brent; Aluminum LME cash; Zinc LME cash; Nickel LME cash; Lithium spodumene ore.
Sources: ABS (2025); LME (2025); London Bullion Market Association (2025); The Ux Consulting Company (2025); US Department of Energy (2025); Metal Bulletin (2025); Japan Ministry of Economy, Trade and Industry (2025); Department of Industry, Science and Resources (2025).

Figure 1.15: Australia's major resource and energy commodity exports, 2024–25 dollars



	% change from 2023–24			CAGR % change from 2023–24		
	2024–25 f			2029–30 z		
	volume	EUV	value	volume	EUV	value
Iron ore	0	-18	-17	1	-10	-9
LNG	-2	4	2	-1	-7	-7
Metallurgical coal	3	-29	-27	2	-10	-8
Gold	-11	18	6	4	-5	-2
Thermal coal	4	-16	-13	0	-9	-9
Copper	15	9	26	7	0	7
Alumina	-5	60	52	1	-2	-1
Lithium	11	-55	-50	5	-8	-4
Oil & condensate	-7	-16	-22	-4	-9	-13
Aluminium	7	11	18	1	-2	-1
Zinc	-3	19	16	-2	-2	-4
Bauxite	8	6	15	1	-3	-1

Notes: **f** forecast; **z** projection. EUV is export unit value
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025)

Macroeconomic Outlook

Share of global GDP and economic growth, 2023*

Country	China	US	EU	India	ASEAN	Japan	S Korea	Taiwan	**Australia**
Per cent share of global GDP (PPP)	19	15	15	8	5	4	2	1	1
Yearly growth	▲5.2%	▲2.9%	▲0.6%	▲8.2%	▲4.0%	▲1.7%	▲1.4%	▲1.3%	▲**2.0%**
Share of Australia's 2-way trade	26%	8%	9%	4%	15%	10%	6%	3%	–

*most recent data available

Global overview

- The global economy has deteriorated slightly since late 2024 and risks to global growth remain weighed to the downside to 2030.
- Global industrial production growth improved through 2024, China accounted for 80% of the growth in global output.
- Chinese growth prospects improved modestly, strengthening the outlook.

Global risks

- Trade and geoeconomic fragmentation.

Source: IMF; ABS; OCE

2.1 Summary

- The global macroeconomic outlook has deteriorated slightly since the December 2024 REQ. While economic and industrial conditions improved throughout 2024, leading to forecast upgrades by the IMF, downside risks to global growth and trade are both rising and being realised.
- Moderating inflation and falling interest rates signal an end to the high-interest rate cycle. However, elevated trade and economic policy uncertainty present risks to both global trade and further disinflation.
- Robust growth is expected by the IMF for Australia's major trading partners, returning to trend over the medium-term. Chinese growth prospects have improved with industrial sector out-performance countering slowing declines in the real estate sector, and further fiscal support aimed at addressing weak domestic demand.

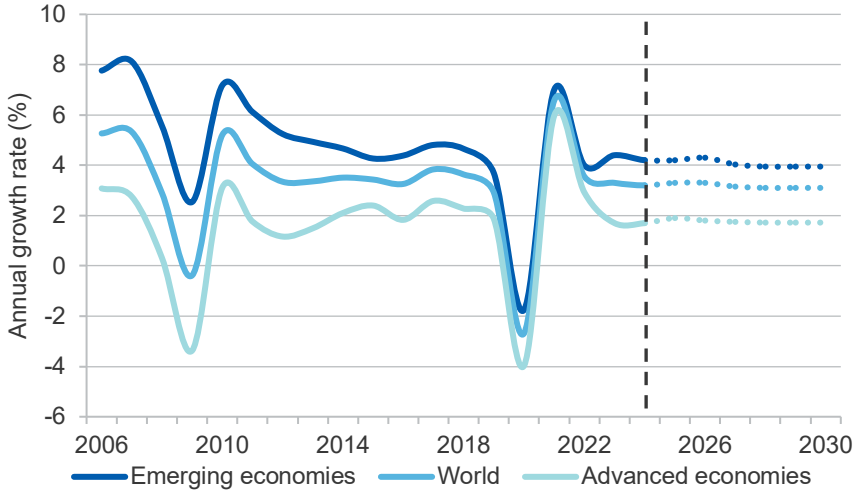
2.2 World economic outlook

Global growth is steady, but trade policy restrictions may dampen global growth and industrial production

The International Monetary Fund's (IMF) January 2025 outlook for world economic growth was largely unchanged from its October 2024 outlook, at 3.3% in 2025. Growth in 2025 is forecast to be 3.3% — a slight upgrade from the prior forecast, continuing at 3.3% in 2026 (Figure 2.1). Over the 5-year outlook, global growth is expected to trend down to 3.1%. Growth in major emerging economies China and India is expected to account for a major share of global growth by 2029, while growth in advanced economies is expected to ease towards long-run potential growth of 1.7% from 2027.

By way of comparison, the OECD's March 2025 *Interim Economic Outlook* projects global growth slowing to 3.1% in 2025 and 3.0% in 2026. The Outlook highlights a range of risks, including trade fragmentation and macroeconomic volatility. An unexpected downturn, policy change or deviation from the projected disinflation path could trigger market corrections, significant capital outflows, and exchange rate fluctuations,

Figure 2.1: IMF GDP growth forecasts



Source: IMF (October 2024, January 2025)

particularly in emerging markets. The OECD highlights that high public debt levels and elevated asset valuations in many countries heighten these risks.

At the country-level, the OECD forecast weaker growth than the IMF for the United States in 2025 and 2026, and for China in 2026 (Table 2.1). This difference is driven largely by the OECD's expectations for the economic impacts of announced tariffs from April 2025 onwards.

Table 2.1: GDP growth forecasts by the IMF and OECD in Q1 2025

	2025		2026	
	IMF	OECD	IMF	OECD
World	3.3%	3.1%	3.3%	3.0%
United States	2.7%	2.2%	2.1%	1.6%
China	4.6%	4.8%	4.5%	4.4%
Euro Area	1.0%	1.0%	1.2%	1.2%

Source: IMF (January 2025); OECD (March 2025).

The IMF downgraded its world trade outlook from October 2024, on account of sharp increases in trade policy uncertainty and expectations for tighter trade restrictions. World trade volumes are now expected by the IMF to grow by 3.2% in 2025 (-0.2 ppt) and 3.3% in 2026 (-0.1 ppt).

Risks to this outlook are tilted to the downside due to heightened trade policy uncertainty at the time of writing. Any additional trade restrictions would likely reduce global trade volumes, with the manufacturing sector likely the most impacted.

The global monetary easing cycle has commenced, however further easing will hinge on inflation remaining under control

Inflation continues to moderate in most advanced economies, with most central banks signalling that inflation is returning to target levels. Reductions in core inflation (which excludes food and energy) have generally continued in line with (or ahead of) central banks' expectations. Global shipping costs have eased from their July 2024 peak, and supply chain pressure remains contained at or below average levels. Services inflation continues to decline, although rent inflation remains high in several countries. Goods inflation has been on a gradual increasing trend, recently returning to historical averages.

The return of inflation to near central bank targets has seen some central banks shift focus to mitigating risks such as slowing economic activity and labour market weakness.

Growth in major trading partners to slow over the medium-term

GDP growth in Australia's major trading partners is forecast by the RBA to ease gradually from 3.5% at the end of 2024 to 3.4% at the end of 2026. This will then ease further by the end of the outlook period in line with slowing growth in China. This growth outlook remains weak in historical terms; however, it has improved relative to expectations at the time of the December 2024 and March 2024 REQ publications. This largely reflects higher growth forecasts for China, Japan and India.

China's economy grew by 5.4% year-on-year in the December quarter 2024. Growth through the year was driven by industrial production and net exports — equivalent to half of growth in the December quarter — as the nation's real estate sector and consumer demand continued to drag. Of note, investment and production from clean energy sectors is estimated to have accounted for a quarter of China's GDP growth in 2024[1] — 75% of this came from the three priority sectors of electric vehicles, solar panels and batteries. Investment and output from clean energy sectors now account for a larger share of China's GDP than real estate sales.

Looking forward, China's government has set a GDP growth target of around 5% in 2025, indicating further policy support may come to prop up domestic demand. Policy support is expected to be delivered through use of fiscal space: announcing higher ultra-long special treasury bond issuance and a targeted fiscal deficit of around 4% of GDP. In their January 2024 update, the IMF upgraded their forecasts for China's economy to 4.6% in 2025 (+0.1 ppt) and 4.5% in 2026 (+0.4ppt), on account of continued policy support, dissipating trade policy uncertainty, and announced increases to the retirement age.

United States annual GDP growth fell to an almost 2-year low of 2.5% in the December quarter 2024. This follows US growth outperforming expectations for much of the year due to robust domestic demand, easing monetary policy and financial conditions. The IMF upgraded their forecasts for US GDP growth in their January outlook, now expecting 2.7% in 2025 (+0.5 ppt) and 2.1% in 2026. The IMF cited robust labour markets and accelerating investment as factors supporting the US growth outlook, as well as potential upside risks stemming from fiscal expansion (e.g. tax cuts). Risks that may dampen the longer-term US growth outlook were also raised by the IMF, such as inflationary pressures and labour force disruptions (associated with reduced migration flows).

[1] Myllyvirta, L et al. (2025), *Analysis: Clean energy contributed a record 10% of China's GDP in 2024*, via Carbon Brief: link.

2.3 Global industrial conditions

Goods demand improved in 2024, with China to continue dominating the industrial rebound

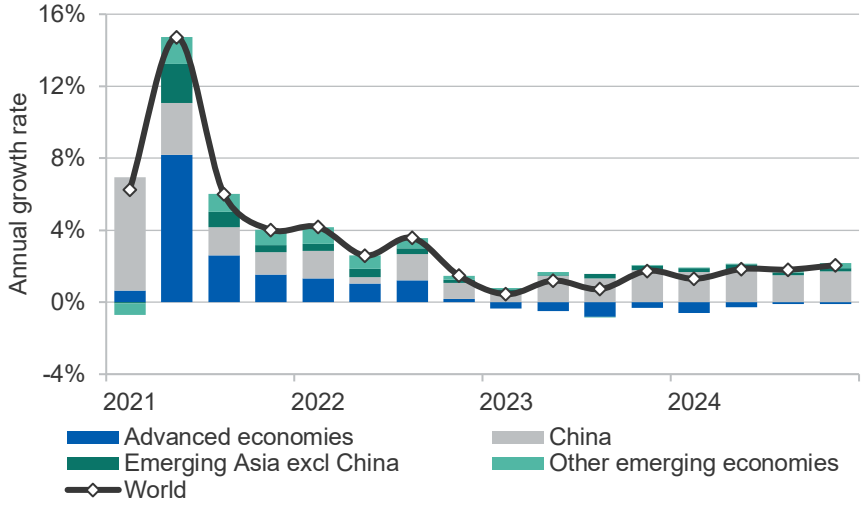
Global industrial production improved throughout 2024, increasing by 1.8% on average — up from 1.0% in 2023. This was largely driven by China, accounting for more than 80% of the growth in global output (Figure 2.2). Growth was also supported by expansions in emerging Asia and high-tech export economies such as South Korea, Taiwan and Singapore. Weak and declining output in advanced economies continued to be a drag on global growth in 2024, with Europe accounting for much of this decline.

China's industrial production growth rebounded throughout the year to be 6.4% in December 2024 amid government efforts to spur growth. Ongoing weakness in Europe's industrial sector points to a slow recovery among its major producers. Europe's prolonged manufacturing downturn — driven by energy prices and weak consumer demand — has continued into the first quarter of 2025. US industrial production declined throughout 2024, with durable product (e.g. automotive and aerospace) manufacturing weighing on growth.

The upswing in global industrial production has been supported by a recovery in consumer demand. Global merchandise imports returned to growth in mid-2024 (Figure 2.3), led by demand for imported goods in ex-European advanced economies. Similar to trends in global industrial production, China accounted for most (around 70%) of the growth in merchandise exports since the December quarter 2023 when trade started recovering.

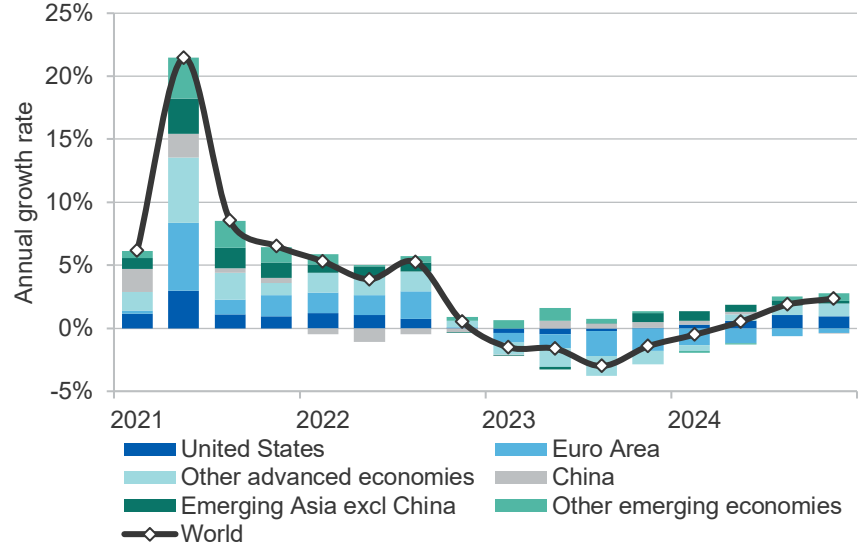
Forward indicators of global manufacturing activity have improved so far in 2025. Growth in both output and new orders in major manufacturing economies have led the JP Morgan Global Manufacturing Purchasing Managers Index (PMI) back into expansionary territory for the first two months this year. While several indicators point to lingering concerns, such as a two-year high in input cost inflation and continued weakness in export orders, business confidence rose to a nine-month high.

Figure 2.2: Contributions to growth in global industrial production



Source: CPB Netherlands Bureau for Economic Policy Analysis (2025)

Figure 2.3: Contributions to growth in global merchandise imports



Source: CPB Netherlands Bureau for Economic Policy Analysis (2025)

The Caixin China General Manufacturing PMI rose further into expansion territory in February 2025, with output and new orders growth at a three-month high. India's manufacturing PMI remained well in expansion territory in February 2025, due to expanding new orders and manufacturing output. Output growth eased to a 13-month low in India, but buoyant demand kept business sentiment high. Manufacturing PMI surveys showed rising export orders in China and India, defying trends elsewhere and underlining these nations' dominance in the rebound of merchandise exports from late 2023.

Japan's manufacturing sector was in contractionary territory for an 8th consecutive month, reflecting continued weakness in demand. Firms cited weak client confidence in key markets such as the US, EU and China, and business confidence dipped to a 5-year low. Korea's manufacturing sector has been tracking relatively flat since November 2024, with growth in output/sales offset by weak domestic demand and input price pressures.

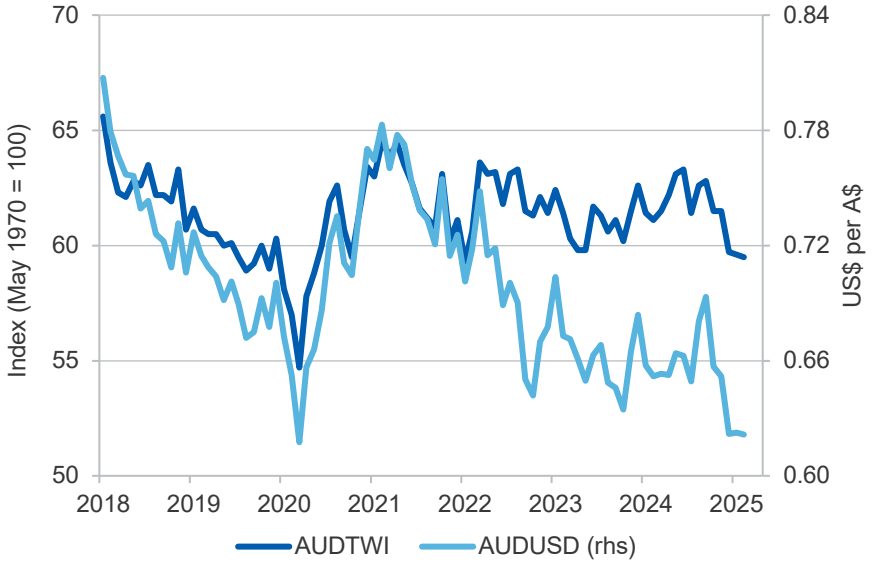
Global industrial production growth is forecast by Wood Mackenzie to rebound to 3.1% in 2025 and 3.2% in 2026, following 2 years of below-average growth. Global industrial production growth is then expected to moderate over the medium-term to around 2.3% by 2030. This decline is projected in line with a slowing in global GDP towards trend growth and a maturing of China's industrial sector — China's IP growth is expected to ease from 4.9% in 2025 to 2.9% in 2030.

2.4 Revisions

Exchange rate assumptions have been revised down

Since the release of the December 2024 REQ, the Australian dollar has declined against both a strengthening US dollar and in trade-weighted terms (Figure 2.4). Australian export value forecasts in this REQ adopt the market consensus on the outlook for the AUD/USD. The consensus is for the AUD/USD to appreciate over the outlook period, as interest rates decline faster in the US than in Australia. Adopting recent consensus forecasts leads to downgrades of about US$0.03 in 2025 and 2026 compared with the December 2024 REQ. This also represents a downgrade of US$0.05 in 2025 and US$0.06 in 2026 compared with the assumptions set in the March 2024 REQ.

Figure 2.4: Australian trade-weighted index, US dollar exchange rate



Source: RBA (2025)

Table 2.2: IMF annual GDP growth projections for major trading partners

	2024	2025[a]	2026[a]	2027[a]	2028[a]	2029[a]	2030[a]
World [b]	**3.2**	**3.3**	**3.3**	**3.2**	**3.1**	**3.1**	**3.1**
China [c]	4.8	4.6	4.5	3.6	3.4	3.4	3.4
Japan	-0.2	1.1	0.8	0.6	0.6	0.6	0.6
Republic of Korea	2.2	2.0	2.1	2.1	2.1	2.1	2.1
India [d]	6.5	6.5	6.5	6.5	6.5	6.5	6.5
ASEAN-5 [e]	4.5	4.6	4.5	5.0	5.0	5.0	5.0
Eurozone	1.0	1.4	1.7	1.6	1.6	1.6	1.6
United States	2.8	2.7	2.1	2.1	2.1	2.1	2.1

Notes: **a** Assumption; **b** Calculated by the IMF using purchasing power parity (PPP) weights for nominal country gross domestic product; **c** Excludes Hong Kong; **d** Based on fiscal years, starting in April; **e** Indonesia, Malaysia, Philippines, Thailand and Vietnam.
Sources: IMF (2025); Bloomberg (2025)

Table 2.3: Exchange rate and inflation assumptions

	2024	2025[a]	2026[a]	2027[a]	2028[a]	2029[a]	2030[a]
AUD/USD exchange rate	0.66	0.63	0.67	0.69	0.74	0.75	0.75
Inflation rate[b]							
United States	3.0	2.0	2.1	2.1	2.1	2.1	2.1
	2023–24	**2024–25[a]**	**2025–26[a]**	**2026–27[a]**	**2027–28[a]**	**2028–29[a]**	**2029–30[a]**
Australia	4.2	2.5	3.3	2.8	2.5	2.5	2.5

Notes: **a** Assumption; **b** Average CPI growth over the specified year (fiscal or calendar).
Sources: ABS (2025); Bloomberg (2025); Department of Industry, Science and Resources (2025); IMF (2025); RBA (2025).

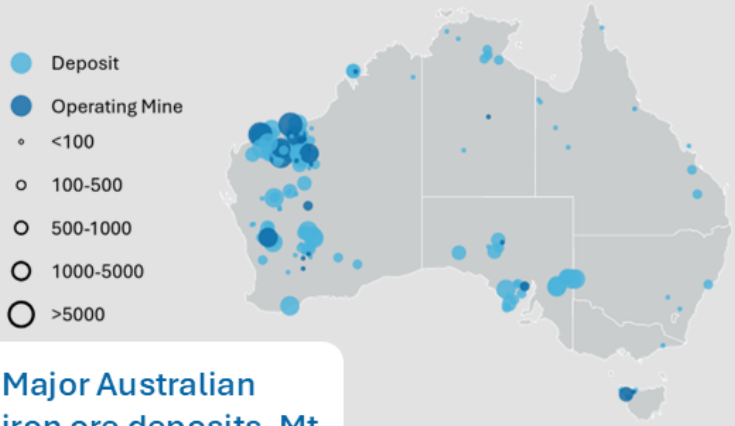
Iron ore

Australia's iron ore sector

World's no. 1
for iron ore resources

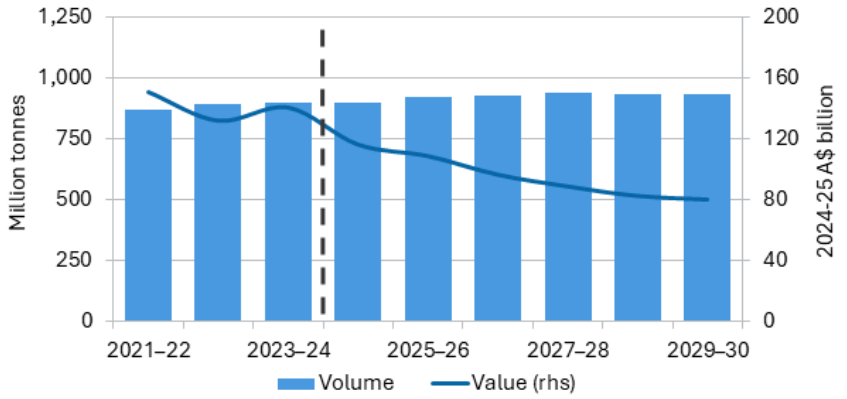
Largest
iron ore producer in the world

902 million tonnes
of iron ore exported in 2024



Major Australian iron ore deposits, Mt

Australian iron ore exports

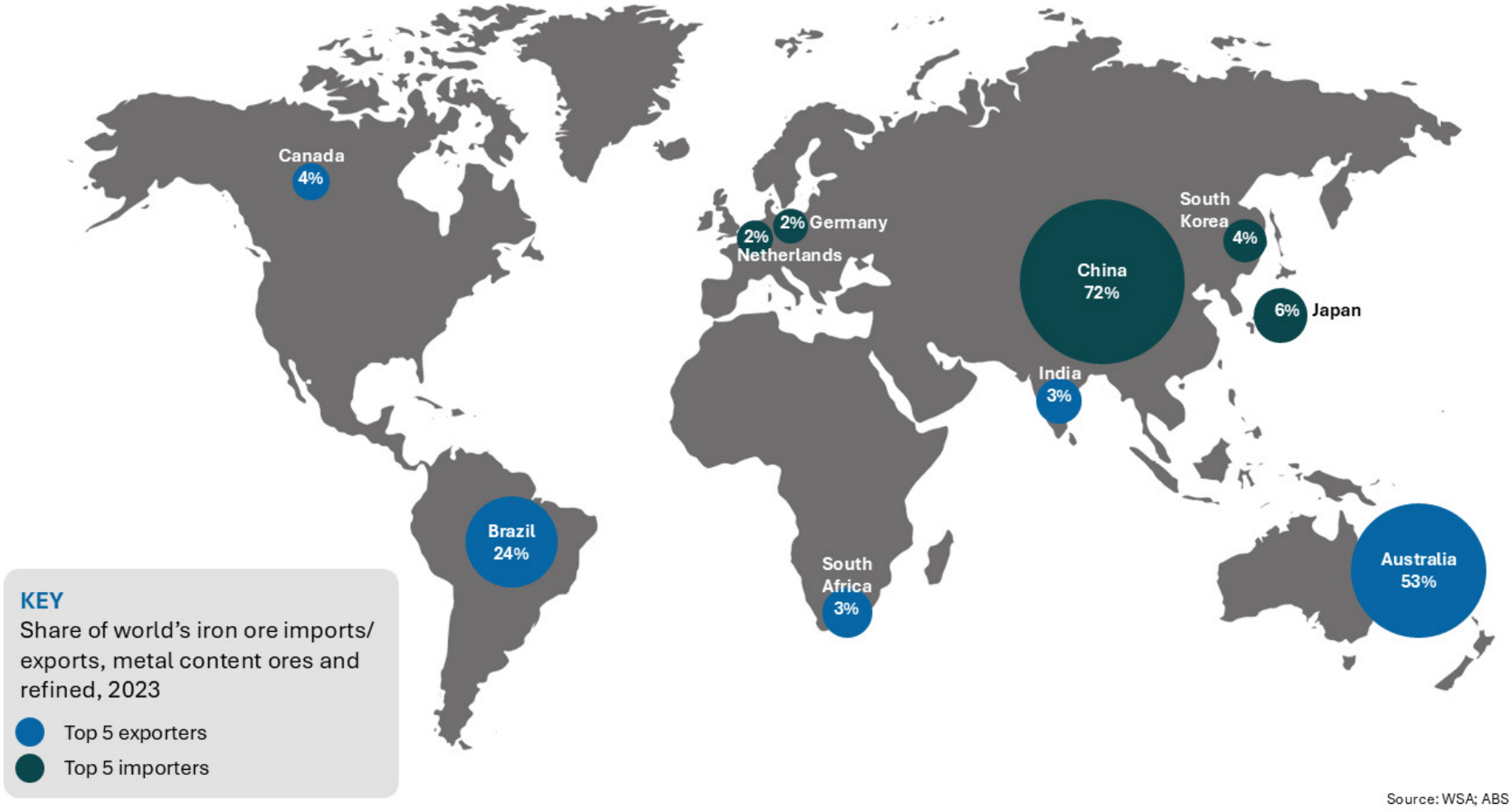


Outlook

- Ore prices to fall as global supply rises
- Earnings to fall as prices decline
- Australian export volumes to peak and stabilise
- Exploration strong as producers replace depleting reserves

Source: GA; ABS; DISR

Iron ore trade map



Source: WSA; ABS

3.1 Summary

- Australian iron ore export volumes increased by 1.2% year-on-year to 902 Mt in 2024. Following two decades of rapid growth, Australia's iron ore output is expected to peak within three years as new production is developed to sustain output.
- World steel production is projected to rise to about 2 billion tonnes by the end of the outlook period (2030). Declining output in China will be offset by new capacity in India, Southeast Asia, and the Middle East, and a modest recovery by North American and European steelmakers.
- Spot iron ore prices have been stable in early 2025, after falling for most of 2024. Lower forecast prices will reduce Australia's iron ore export earnings (in real terms) from $117 billion in 2024–25 to $109 billion in 2025–26 and $81 billion in 2029–30.

3.2 World steel production and demand

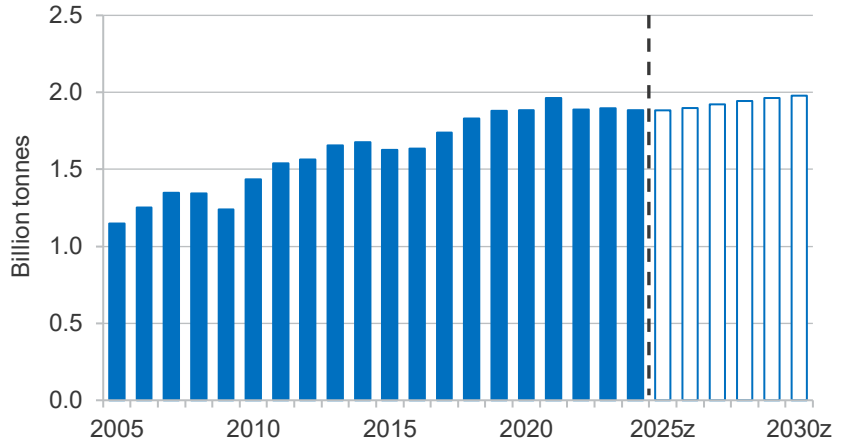
Steel demand to recover in 2025 as industrial production strengthens

World steel production was weak in 2024 and remains about 4% below the peak in global output in 2021. Production is expected to be flat in 2025 then slowly pick up over the five-year outlook period, reaching just under 2 billion tonnes by 2030 (Figure 3.1).

The expected growth in global steel production could be met using existing production capacity. Global crude steelmaking capacity exceeded global steel production by over 600 million tonnes in 2024. However, substantial new steel capacity — either under construction or planned — is expected over the outlook, with large-scale projects in Asia, North America, Europe and the Middle East. The OECD warns that excess capacity will become increasingly problematic in the next few years, putting further pressure on prices and steelmakers' margins and distorting trade and markets.

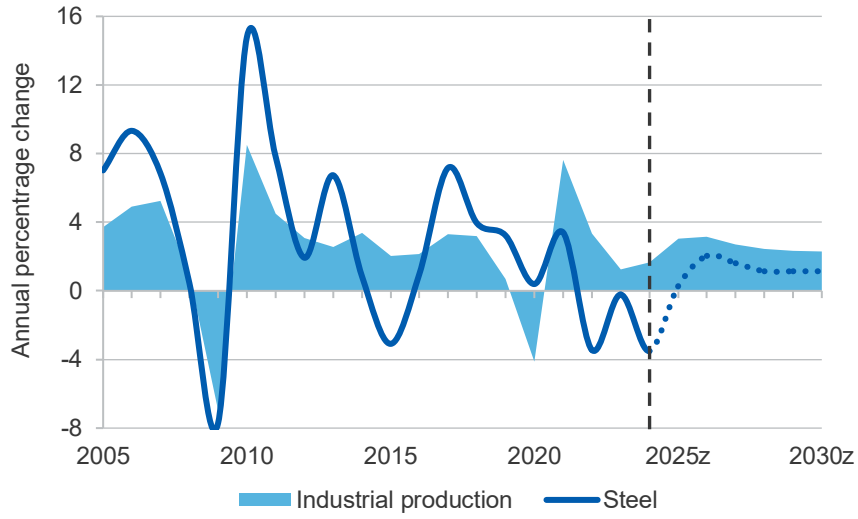
Global industrial production is expected to gradually rise over the outlook, bolstered by a pickup in steel-intensive manufacturing, infrastructure and civil construction sectors in advanced economies (Figure 3.2).

Figure 3.1: Global annual steel production



Note: z projections.
Source: World Steel Association (2025); DISR (2025)

Figure 3.2: World industrial and steel production



Note: z projections.
Source: World Steel Association (2025); Wood Mackenzie (2025); DISR (2025)

Demand for steel also fell sharply in 2024 and continues to be affected by the weakness in industrial output that has persisted since early 2023. Flat dwelling construction — due to declines in household purchasing power and tight financing conditions — also continues to depress steel demand in advanced economies. Global steel demand is forecast to recover over the outlook period, but with substantial divergence among major steel markets (Figure 3.3).

India and Southeast Asia to drive growth in global steel output to 2030

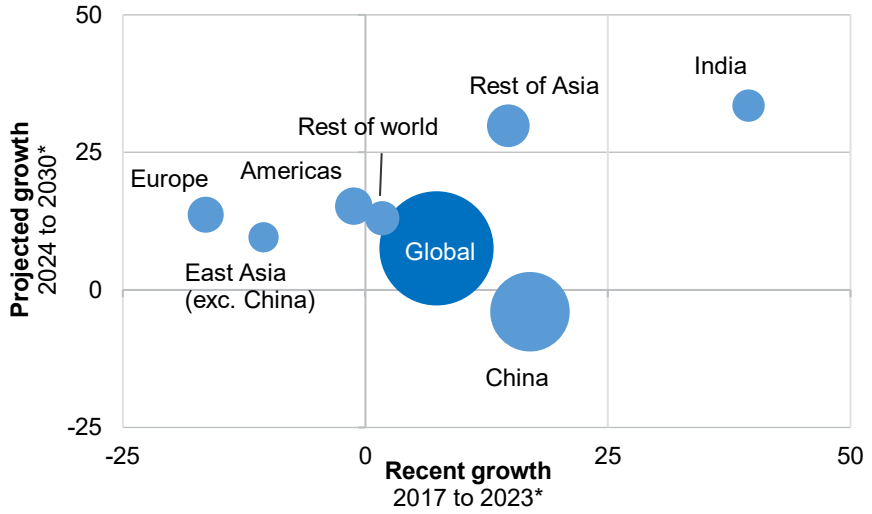
India continues to lead world steel production growth (Figure 3.4). Rapid growth in demand has seen India's per capita steel consumption rise steadily in recent years. However, consumption remains around half the global average, suggesting there is considerable scope for further growth (see *Metallurgical Coal* chapter). Ongoing infrastructure projects and ambitious targets for new affordable housing projects are expected to bolster India's steel demand over the outlook period to 2030.

Additional Indian steelmaking capacity is expected to be added through to the end of the decade — largely blast furnace capacity — that should see India's steel production reach more than 200 Mt by 2030, more than double the level at the start of the decade (Table 3.2).

Large gains in steel output are also expected in Southeast Asia, with new production capacity expected from projects in Indonesia, Philippines Vietnam, and Malaysia. By process, Blast Furnace-Basic Oxygen Furnace steelmaking — with iron ore and metallurgical coal as inputs as opposed to scrap steel or direct-reduced iron (DRI) — is forecast to make about 40-45% of new global capacity, and about 60-70% of new capacity in Asia.

Modest recoveries expected in the European and US steel sectors will also support growth. European steel production fell sharply in 2024 due to weak industrial production and building construction. However, steel production is expected to recover as regional construction and manufacturing gradually recover. Similarly, US steel production fell in 2024, however, growth is expected to recover over the outlook period to 2030, mainly driven by the construction and automotive sectors.

Figure 3.3: World steel demand growth by country/region



Notes: * Growth is total growth in percentage terms over the period; Rest of Asia ex. China, Japan, South Korea, Taiwan, and India. Bubble area represents steel demand share in 2024
Source: World Steel Association (2025); DISR (2025)

Both Japanese and South Korean steel production is expected to be relatively flat (Figure 3.4). In Japan, a focus on high quality products (such as high-strength electrical steel sheets and plates) will support exports. In South Korea, production will be supported by a focus on value-added products for Korea's automotive, shipbuilding, and machinery sectors.

China's steel demand falling due to demographic and structural factors

China's steel production fell 1.7% in 2024, continuing the downward trend since the peak in 2020. The National People's Congress announced in March that authorities would promote restructuring to achieve production cuts. Further falls are forecast over the rest of the decade, reducing China's annual steel output by 55 Mt by 2030 relative to 2024 (Figure 3.5).

China's declining population and tapering urban population growth is driving a structural downshift in demand for new residential and infrastructure-related construction. The downturn in the Chinese property sector — now in its fourth year — has accelerated this trend. New

construction starts — the most steel-intensive stage of the construction process — continue to fall, down 22% in 2024. However, there have been tentative signs of improvement in recent months, with new home sales slowly increasing, up 1.2% year-on-year in February 2025.

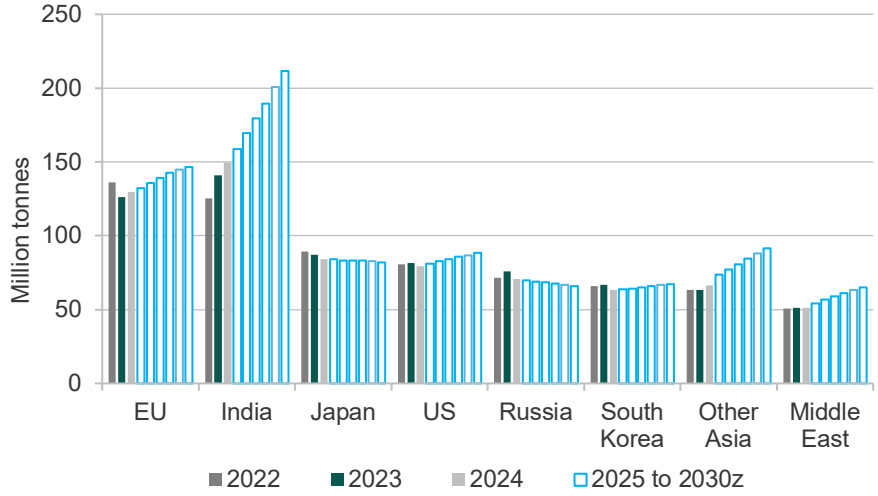
Ahead of the opening of the National People's Congress in early March 2025, the Chinese Government announced it would direct additional support for household incomes and consumption during 2025. New infrastructure investment in China will also provide support for construction, as will affordable housing and urban village renovation projects over the next few years. However, addressing the deep structural issues in the property sector and rebuilding buyer confidence will take years.

The challenging conditions faced by Chinese steel mills over the past three years improved slightly in the final quarter of 2024, but weak prices (Figure 3.6) and still high prices for key inputs (including energy and metallurgical coal) continued to pressure margins. In February 2025, China's monthly steel output fell by 3.3% year-on-year. Sector profitability should improve as China's steel sector consolidates and older, higher cost capacity is phased out. Gains in electric vehicle output, new energy components and infrastructure, and shipbuilding should partly offset relatively weak demand from the property sector.

China's steel exports were the highest on record in 2024 and have been important in supporting China's steel sector. However, global steel markets face disruption from increasing trade sanctions. On 10 February 2025, the US Government announced a 25% tariff on steel and aluminium imports, which commenced on 12 March 2025. An escalation in trade sanctions could result in a reallocation of global steel production shares.

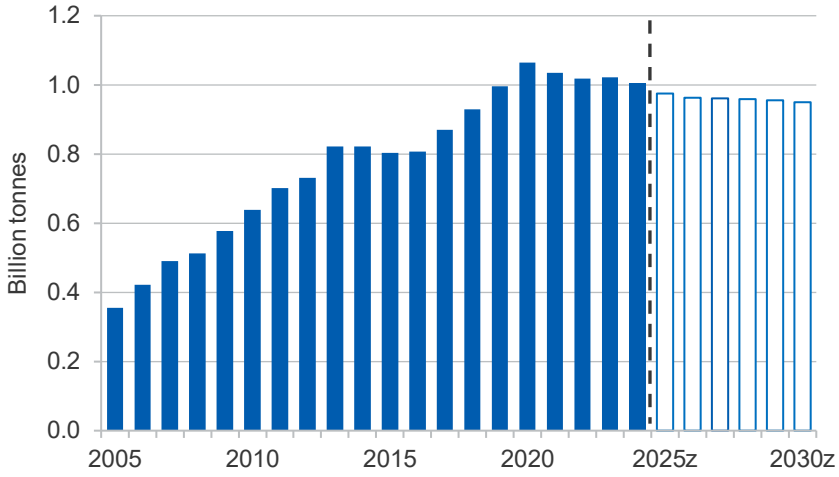
If increased trade restrictions on Chinese steel force some of that steel production back into China's domestic market, this would worsen existing domestic oversupply problems. While China exports very little crude steel to the US, increases in US tariffs on imports from China could indirectly impact China's steel sector. China exports large volumes of whitegoods

Figure 3.4: Steel production – other major producers



Note: z projections.
Source: DISR (2025); World Steel Association (2025)

Figure 3.5: China's annual steel production



Note: z projections.
Source: Bloomberg (2025), DISR (2025)

and other manufactured goods to the US with substantial embodied steel inputs. A material reduction in these exports — in the event China is unable to find alternative markets — would reduce Chinese demand for steel, depressing steel prices and mill profitability, in turn placing downward pressure on input prices, iron ore and metallurgical coal.

Looking further ahead, if China and India's recent growth trajectories continue, India's steel sector will be around 25% the size of China's by 2030, and around 35–40% by 2040. China will remain the largest buyer and price setter for steelmaking inputs for the foreseeable future.

Decarbonisation initiatives pushing up demand for green iron

The decarbonisation of global steel production and supply chains will affect growth and trade patterns to 2030 and beyond. Iron and steel production is carbon-intensive, accounting for 8% of global emissions, with iron accounting for up to 90% of these emissions. Most advanced economies have committed to net zero emissions by 2050. Low-emissions steelmaking has been rising, with gradual increases in the proportion of electric arc furnace (EAF) produced steel in most major steel producers. This share is forecast to gradually rise over the outlook to 2030. To date EAF operations have largely relied on recycled scrap steel as feedstock but are now looking to DRI as an alternative. Overcoming the technology, energy and feedstock challenges required to reduce steel sector emissions will require substantial investment over many years.

As producers and miners adjust to the phase-in of the EU's Carbon Border Adjustment Mechanism and other carbon pricing initiatives, there has been a rise in collaboration between business and government decarbonisation initiatives. Pilot plants are under construction around the world — especially DRI — that can transition from natural gas to hydrogen over time. Examples include Thyssenkrupp's DRI plant in Duisburg due to start in 2026, and HBIS Group's pilot hydrogen-gas DRI plant in China. However, there have also been deferrals in green iron projects over the past year, as steelmakers around the world struggle with global steel oversupply, high input costs and consequent low or negative margins.

Box 3.1: Green iron projects in Australia

Australia's substantial iron ore resources, infrastructure and renewable energy resources make it well placed to support rising global demand for green iron and steel. Global demand for green iron could reach over 850 million tonnes by 2050 in a net-zero scenario.

Green iron proposals are currently under consideration around Australia to capture the growing global demand for green iron. Given the emerging nature of the industry, many projects are at the early stages of development, ranging from concept and pre-feasibility to commercial feasibility assessments.

Fortescue has announced its intent to develop efficient and competitive green hydrogen and is looking to commence production of green iron at the Christmas Creek Green Metal Plant by the end of 2025. The company also announced a feasibility study assessing a 1 Mtpa green iron plant to commence by 2030.

South Korean steel manufacturer POSCO is developing a proposal for a downstream, hot briquetted iron (HBI) processing facility in Port Hedland in partnership with Taiwan's CSC and Japan's Marubeni Corporation.

BlueScope Steel, BHP and Rio Tinto are jointly developing an ironmaking electric smelting furnace pilot plant in Kwinana. The project aims to demonstrate that the production of molten iron from Pilbara ores is feasible using renewable power when combined with DRI technology.

Additional projects currently being considered include Green Steel WA's 2.5 Mt Mid-West Hydrogen DRI Plant, Element Zero's 2.7 Mt Pilbara Iron Super Hub and Calix Limited's 30 Kt DRI demonstration plant.

In February 2025, the Australian Government announced a $1 billion Green Iron Investment Fund to boost green iron manufacturing and supply chains, by supporting early mover green iron projects and unlocking private investment at scale. $500 million of the Fund will support the Whyalla steelworks to transform from blast furnace steelmaking to green steelmaking using DRI from magnetite ore from the Middleback Ranges and EAF technology.

The transition affords both challenges and opportunities to Australia. As the production of green iron and steel rises, the iron ore product mix will gradually shift towards higher grade ores and concentrates suitable for producing DRI. Around 40% of Australia's iron ore resources are magnetite ore, including around 28% of Pilbara iron ore resources. Magnetite is a more readily usable feedstock for 'green' iron technologies. However, around 95% of Australian iron ore production in 2024 was from hematite mines. Given this, research is being undertaken into processes that would allow the use of hematite to produce green iron such as electric smelting furnace technology. Australian green iron and steel initiatives have also been developed in recent years (Box 3.1).

3.3 World iron ore supply

New capacity from Brazil and Africa to boost global supply

Global iron ore supply is expected to increase steadily over the outlook to 2030. In 2024, total iron ore exports from Brazil increased by 7 Mt. Vale, which accounts for over 80% of Brazil's iron ore output, expects to produce 325-335 Mt in 2025. This aligns with the 328 Mt produced last year, the highest since 2018. Brazil is expected to add an additional 45 Mt a year of iron ore exports by 2030. This will include Vale's S11D expansion, as well as new and expanded output by other producers, including CSN (Casa de Pedra mine) and IndoSino.

Over the outlook period, global supply is expected to grow by an average 0.5% a year. Outside of Australia and Brazil, iron ore production is expected to be bolstered by additional capacity from Canada and India as well as new projects coming out of Africa.

Guinea's Simandou mine to commence production later this year

Progress on Guinea's Simandou 120 Mt iron ore mine continued in early 2025. Rio Tinto's Simfer mine has a targeted capacity of 60 Mt per year. Another 60 Mt capacity is under development by WCS, a joint venture between Baowu and Guinea's Government. Rio has stated that a benefit of the high grade Simandou orebody (>65% iron content) is the blending opportunities it provides to meet the needs of steelmakers. First production is expected in late 2025, with first shipment expected in 2026. Simandou production is projected to ramp up steadily over the outlook, adding an additional 100 Mt a year to global supply by 2030 (Table 3.1).

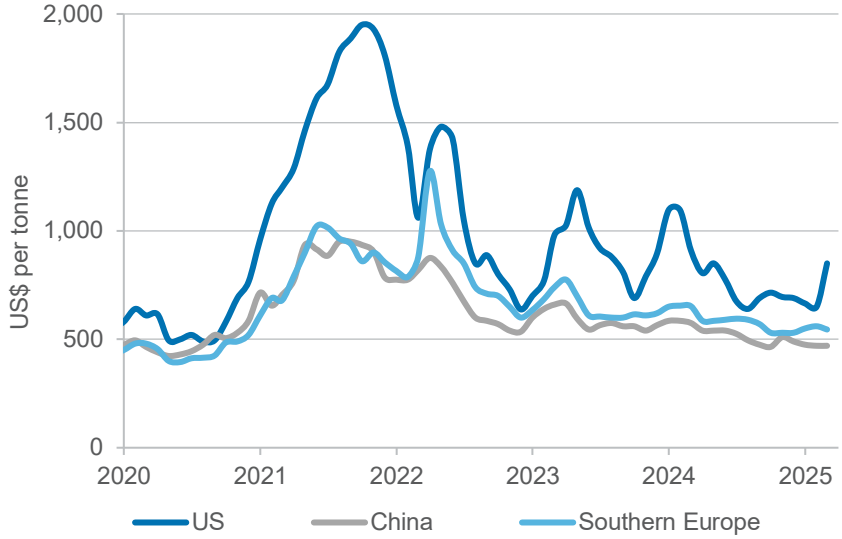
World seaborne trade in iron ore lifted strongly in 2024, solely due to Chinese demand. Combined shipments to China from Australia, Brazil and South Africa — representing more than 80% of global seaborne supply — were estimated at 1055 Mt in 2024, up 3.2% from 2023.

China's imports of iron ore remained strong in 2024 despite weak steel demand, rising 4.9% on 2023 levels. China's iron ore imports from Australia increased 5.3% year-on-year in the December quarter 2024, up from a 0.6% year-on-year rise in the September quarter. The steady growth in China's iron ore imports, combined with falling steel production, has seen China's portside stocks remain at near 5-year highs, at over 150 Mt in early 2025. As China's steel production moderates, its imports are expected to gradually decline (Figure 3.7).

Historically, India has been a price-sensitive iron ore exporter, with miners exporting in times of high seaborne prices. The forecast easing in global iron ore prices suggests India's iron ore exports are likely to remain relatively flat over the outlook period. India's demand for iron ore will rise over the outlook period, in line with its rising steel capacity. The extent to which this increased demand for iron ore will be met through domestic sources remains unclear. India's iron ore imports are forecast to rise over the outlook, albeit from a low base (Table 3.1). Much will depend on how fast iron ore production capacity and infrastructure can be brought online.

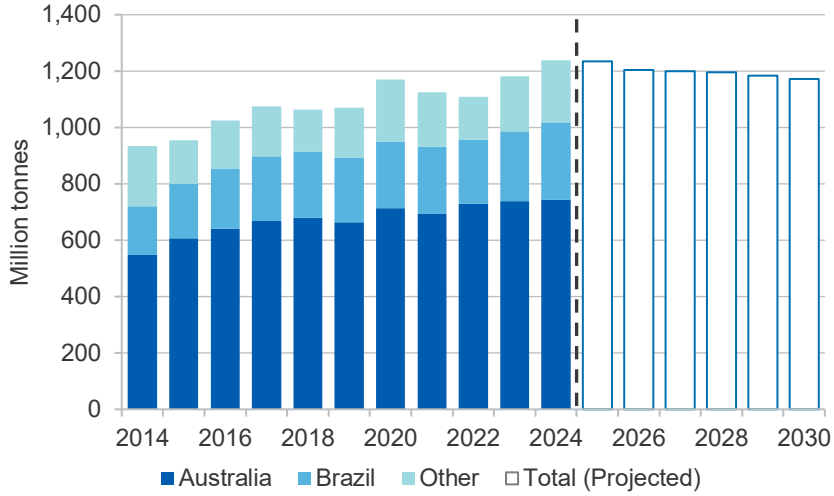
A potentially critical factor is the introduction of new taxes on iron ore producers by India's State governments, which are due to commence in 2026 (see September 2024 *Resources and Energy Quarterly*). These will push up production costs for India's iron ore miners, potentially deferring expansion plans. If this occurs, it could trigger a rise in iron ore imports to meet growing domestic steel production, pushing India from its current position as a net exporter of iron ore to be a net importer.

Figure 3.6: Hot rolled coil steel prices



Source: Bloomberg (2025)

Figure 3.7: China's iron ore imports



Source: Bloomberg (2025), DISR (2025)

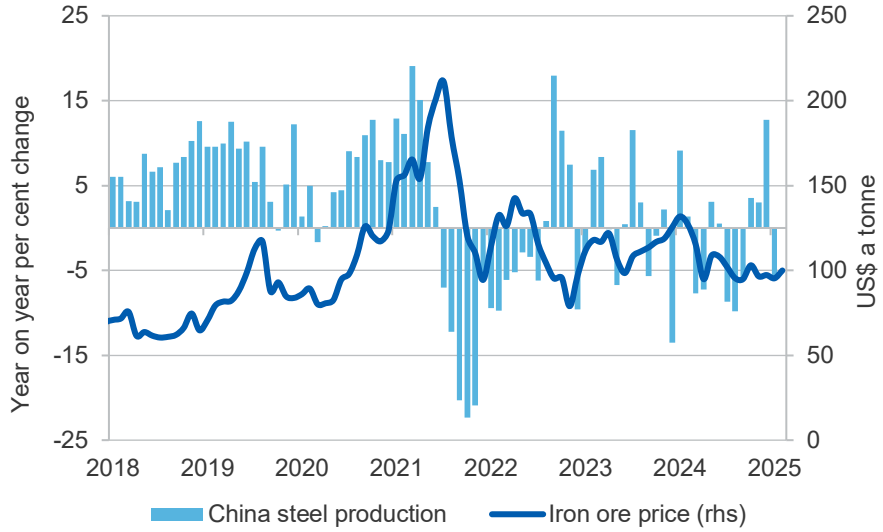
3.4 Prices

Prices to ease over the outlook due to softer demand and surging supply

Iron ore benchmark spot prices have been steady in early 2025 after falling through much of 2024. Over the past few years, iron ore prices have risen and fallen in line with market speculation of further policy announcements in China. However, the underlying trend since 2021 has been a gradual decline in prices as global supply has risen and demand moderated (Figure 3.8).

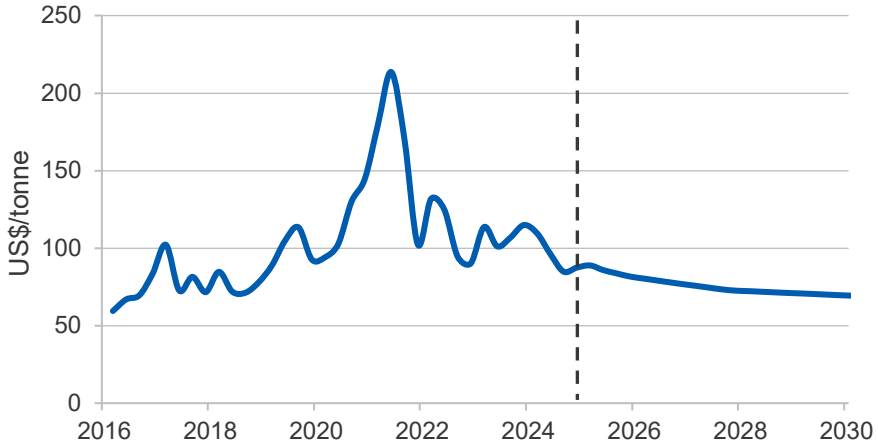
From an estimated average real price of around US$95 a tonne (FOB) in 2024, the benchmark iron ore price is forecast to fall to an average of US$85 a tonne in 2025, then decline further to US$69 a tonne in 2030 in real terms (Figure 3.9).

Figure 3.8: Iron ore price and China steel production, monthly



Notes: China import iron ore fines 62% Fe spot (FOB) nominal prices
Source: Bloomberg (2025); World Steel Association (2025)

Figure 3.9: Iron ore price outlook, quarterly (real)



Notes: China import iron ore fines 62% Fe spot (FOB) real (2025) prices
Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

These price declines are not expected to result in significant changes in Australian export volumes nor exits from the market. Australia's iron ore producers are among the lowest cost producers in the world. With an estimated average cash cost per tonne of US$33 in 2024, most Australian producers enjoy a cash cost advantage over overseas producers as well as lower average transport costs to key markets. Australia's higher cost producers generally provide high quality niche products such as magnetite pellets or concentrate.

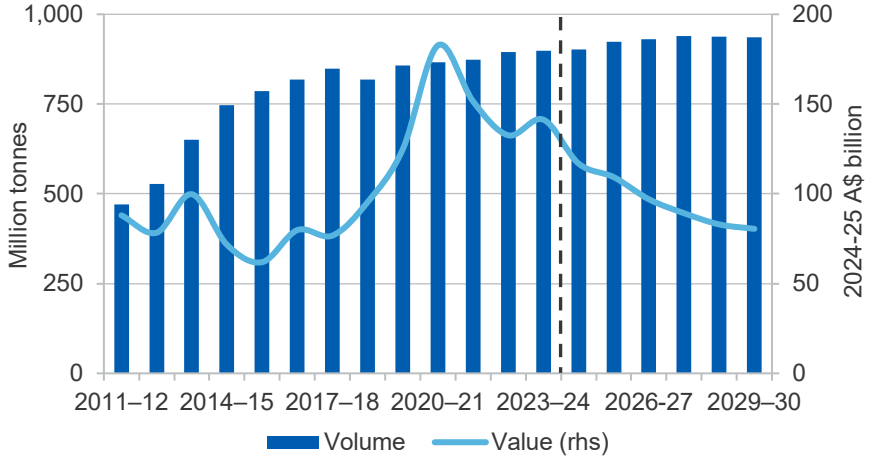
There are risks to the price forecasts. A faster than expected consolidation of China's steel sector would put downward pressure on iron ore prices — as would a decline in global trade resulting from escalating trade tensions. In contrast, iron ore prices would likely remain stronger than forecast if new overseas iron ore mining projects do not achieve ramp up as quickly as expected.

3.5 Australia

Australia's iron ore miners running fast to stand still

Australia's iron ore sector faces a major structural shift over the five-year outlook period. Over the past two decades, Australia's iron ore miners achieved a roughly four-fold increase in production — from about 200 Mt of production in 2004 to over 900 Mt in 2024 (Figure 3.10). This was made possible by a vast program of exploration and capital investment. However, sustaining production volumes at these levels requires ongoing investment in exploration to address declining volumes and ore quality, as well as investment to develop new deposits and build tie-in infrastructure.

Figure 3.10: Australia's iron ore export volumes and values



Source: ABS (2025); Department of Industry, Science and Resources (2025)

Additional supply, including from Fortescue's Iron Bridge, Mineral Resources' Onslow, and BHP's South Flank ramp up, should see Australia's export volumes peak over the next three years, then moderate slightly in the second half of the five-year outlook period.

Rio Tinto produced around 328 Mt of iron ore in 2024, down 1% from 2023. Guidance for 2025 is unchanged at 323–339 Mt. The 2024 result reflected depletion in some mines, partially offset by productivity improvements across the Pilbara system. Construction of the Western

Range mine is largely complete, with first ore on schedule for H1 2025. Rio Tino is advancing its next tranche of Pilbara mine replacement projects. In February 2025 the company announced the development of the 34 Mt Brockman Syncline 1 sustaining project after receiving all key approvals. First production is expected in 2027. A pre- feasibility study for Rhodes Ridge is expected this year, with first ore likely in 2030. Other sustaining projects being progressed include Hope Downs, Greater Nammuldi and West Angelas.

BHP's Western Australian iron ore output was 65 Mt in the December quarter 2024 (73 Mt on a 100% basis), up 0.5% on a year ago. Output rose due to ongoing strong supply chain performance with record volumes from the Central Pilbara hub. Production guidance for 2024–25 is unchanged at 282–294 Mt and is likely to be in the upper half of the range.

Fortescue's total iron ore shipments were 49.4 Mt in the December quarter 2024, up 1% on a year ago. The Iron Bridge magnetite mine continued to ramp up, with 1.5 Mt of concentrate produced in the December quarter 2024. Fortescue's production guidance for the 2024–25 financial year is unchanged at 190–200 Mt, including 5–9 Mt of magnetite from Iron Bridge.

Mineral Resources' Onslow Iron project continues to ramp up, producing 4.4 Mt of iron ore in the December quarter 2024, progressing towards its nameplate capacity of 35 Mt per year. The company announced it is resealing the Onslow haul road to reduce future maintenance costs and has revised down its guidance for 2024–25 to 15.4–16.3 Mt (100% basis).

Iron ore operations in the Pilbara were affected by cyclones in early 2025, resulting in the temporary closure of some port and rail operations. While disruptions were temporary, and mining operations did not sustain major damage, March quarter shipments will see some reduction.

Weaker prices and a rising AUD/USD exchange rate are forecast to lower iron ore earnings over the outlook. Total export earnings are forecast to reach $117 billion in 2024–25, down from $141 billion in 2023–24 (in real terms). Exports in real terms are forecast to decline to $109 billion in 2025–26 and $81 billion in 2029–30.

Exploration strong as producers look to replace depleting reserves

A total of $208 million was spent on iron ore exploration in the December quarter 2024 (Figure 3.11), up 25% on the December quarter 2023. The latest results continue the robust levels of iron ore exploration triggered by the historical high iron ore prices (of above US$200 a tonne) in early 2021. The current high levels of exploration spending are likely to persist over the outlook period, as Australia producers look for deposits with suitable volumes and ore grades to replace depleting mines.

Revisions to the outlook

Export earnings in 2024–25 have been revised up from the December 2024 REQ reflecting higher forecast prices and a lower exchange rate assumption. Earnings of $117 billion rather than $108 billion are now forecast for 2024–25. Export earnings in 2025–26 have also been revised up, from $93 billion in the December 2024 *Resources and Energy Quarterly* to $109 billion, driven by a lower exchange rate assumption and higher forecast prices. Compared with the March 2024 REQ, Australian iron ore earnings in 2028–29 (in nominal terms) have been revised down by $1.9 billion, reflecting a reduction in forecast volumes.

Figure 3.11: Australia's iron ore quarterly exploration expenditure

Source: ABS (2025)

Table 3.1: World trade in iron ore

	Million tonnes							
	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
World trade	1,715	1,699	1,715	1,739	1,773	1,800	1,819	1.0%
Iron ore imports	**2024**	**2025[f]**	**2026[f]**	**2027[z]**	**2028[z]**	**2029[z]**	**2030[z]**	**CAGR[r]**
China	1,238	1,223	1,205	1,201	1,197	1,185	1,173	-0.9%
Japan	103	100	100	99	99	99	98	-0.9%
European Union	102	107	109	110	112	112	113	1.8%
South Korea	69	68	69	66	70	71	72	0.6%
Rest of Asia [a]	50	59	67	72	78	86	94	11.1%
India	5	0	14	21	33	48	53	49.7%
Iron ore exports	**2024**	**2025[f]**	**2026[f]**	**2027[z]**	**2028[z]**	**2029[z]**	**2030[z]**	**CAGR[r]**
Australia	902	908	924	938	938	936	935	0.6%
Brazil	415	424	435	435	449	455	460	1.7%
South Africa	60	61	62	63	64	64	64	1.1%
Other Africa	0	0	5	20	45	75	100	>100%
Canada	60	62	64	64	64	64	64	1.1%
India	45	46	47	48	49	50	51	2.1%

Notes: **a** Asia ex. China, India, Japan, South Korea and Taiwan; **f** Forecast, **r** Compound annual growth rate, **z** Projection
Sources: Department of Industry, Science and Resources (2025); World Steel Association (2025)

Table 3.2: World steel demand and production

Crude steel demand	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
				Million tonnes				
China	884	864	866	865	860	855	849	-0.7%
European Union	133	136	141	144	146	149	151	2.1%
India	147	154	162	169	175	185	196	4.9%
United States	99	101	103	106	107	109	111	1.9%
Other Asia [a]	108	114	120	125	129	132	135	3.8%
Japan	56	56	57	58	58	59	60	1.0%
Middle East	59	61	63	65	67	69	70	3.0%
South Korea	51	52	53	54	55	56	56	1.6%
Russia	45	45	45	46	47	48	49	1.3%
World steel demand	1,825	1,829	1,867	1,897	1,918	1,940	1,963	**1.2%**
Crude steel production	**2024**	**2025[f]**	**2026[f]**	**2027[z]**	**2028[z]**	**2029[z]**	**2030[z]**	**CAGR[r]**
China	1,005	975	963	961	959	955	950	-0.9%
European Union	129	132	136	139	143	145	146	2.1%
India	150	159	169	180	190	201	212	6.0%
United States	79	81	83	84	86	87	88	1.8%
Other Asia [a]	66	74	77	81	85	88	92	5.6%
Japan	84	84	83	83	83	83	82	-0.4%
Middle East	51	54	57	59	61	63	65	4.0%
South Korea	64	64	64	65	66	67	67	1.0%
Russia	71	70	69	68	68	67	66	-1.1%
World steel production	**1,883**	**1,883**	**1,898**	**1,922**	**1,944**	**1,963**	**1,978**	**0.8%**

Notes: **a** Asia ex. China, India, Japan, South Korea and Taiwan; **f** Forecast, **r** Compound annual growth rate, **z** Projection.
Sources: Department of Industry, Science and Resources (2025); World Steel Association (2025)

Table 3.3: Iron ore outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
				Million tonnes					
Prices [a]									
– nominal	US$/t	93	85	80	77	76	76	76	-3.2%
– real [b]	US$/t	95	85	79	74	72	70	69	-5.2%
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[f]**	**2027–28[f]**	**2028–29[f]**	**2029–30[f]**	**CAGR[r]**
Production									
– Steel [c]	Mt	5.05	5.13	5.46	5.43	5.69	5.89	6.08	3.2%
– Iron ore [g]	Mt	958	969	997	1,011	1,021	1,019	1,018	1.0%
Exports									
Steel [c]	Mt	1.08	1.04	1.11	1.08	1.08	1.09	1.09	0.1%
– nominal value	A$m	1,373	1,227	1,341	1,254	1,224	1,218	1,201	-2.2%
– real value [i]	A$m	1,408	1,227	1,298	1,180	1,124	1,091	1,049	-4.8%
Iron ore [h]	Mt	898	902	924	930	939	937	936	0.7%
– nominal value	A$m	137,850	116,789	113,083	103,030	97,155	92,608	92,116	-6.5%
– real value [i]	A$m	141,323	116,789	109,418	96,966	89,206	82,957	80,503	-9.0%

Notes: **a** Spot price, 62% iron content, fob Australian basis; **b** In 2025 US dollars; **c** Crude steel equivalent; Crude steel is defined as the first solid state of production after melting. In ABS Australian Harmonized Export Commodity Classification, crude steel equivalent includes most items from 7206 to 7307, excluding ferrous waste and scrap and ferroalloys; **f** forecast; **g** In wet metric tonnes; **h** In dry metric tonnes; **i** In 2024–25 Australian dollars; **r** Compound annual growth rate; **z** Projection
Sources: Department of Industry, Science and Resources (2025); ABS (2025) International Trade in Goods and Services, Australia; Bloomberg (2025); World Steel Association (2025); company reports.

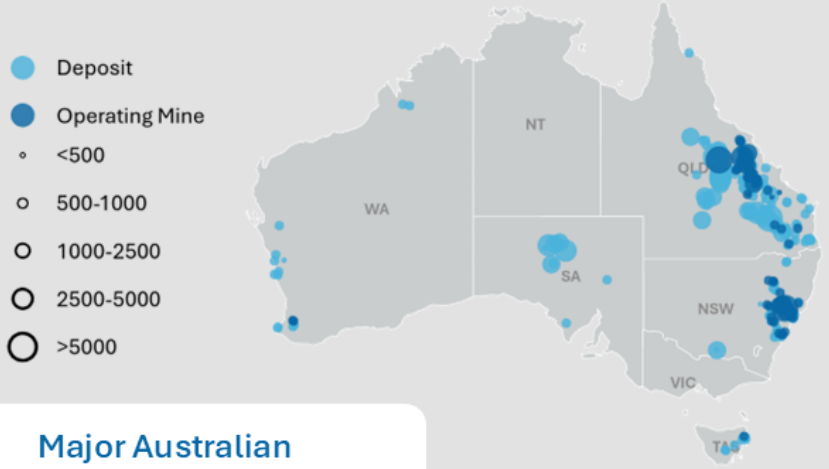
Metallurgical coal

Australia's metallurgical coal sector

160 Million tonnes
exported annually, making Australia the world's largest exporter

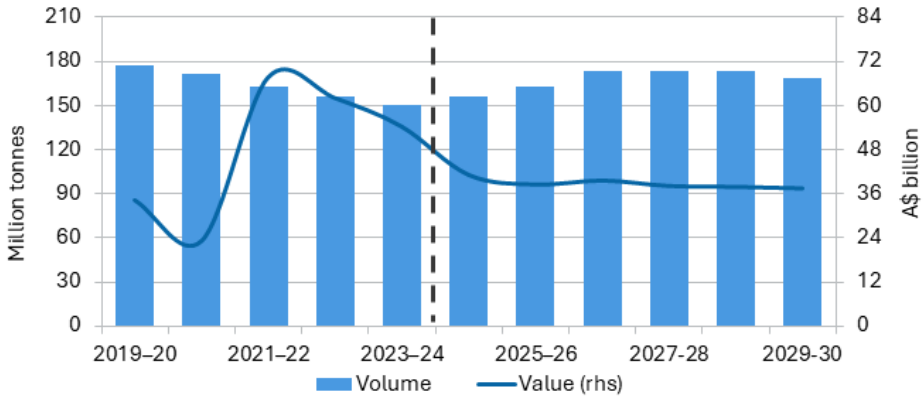
Exploration spending high
compared to historical averages

Over 95%
of Australia's production is exported



Major Australian Black Coal deposits, Mt

Australia's metallurgical coal exports

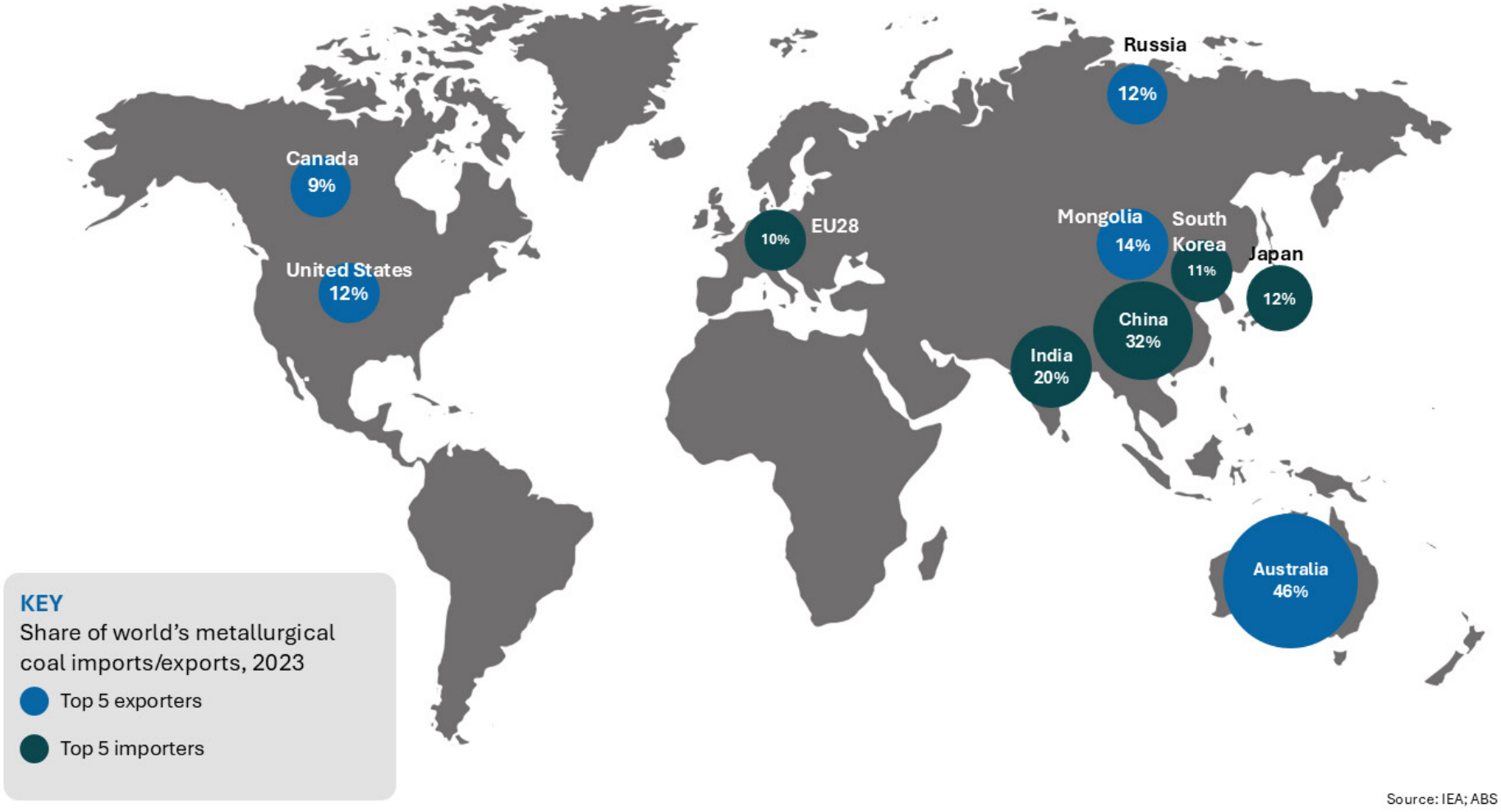


Outlook

- Metallurgical coal prices to decline as supply shortages ease
- Earnings to decline over time as prices ease
- Production volumes expected to grow
- India to overtake China as world's largest importer

Source: IEA; ABS; McCloskey

Metallurgical coal trade map



Source: IEA; ABS

4.1 Summary

- Metallurgical coal prices have trended down in recent months, due to weakness in steel production. Prices are expected to decline in real terms to US$183 a tonne in 2030, normalising from extraordinarily high levels in 2022 and 2023.
- Australian exports are expected to peak at 174 million tonnes in 2027–28, as new mines come online. As a result, exporters are expected to take a small amount of market share from Chinese domestic suppliers.
- Earnings are expected to fall from $56 billion in 2023-24 to $33 billion in 2029-30 (in real terms), as prices normalise.

4.2 World trade

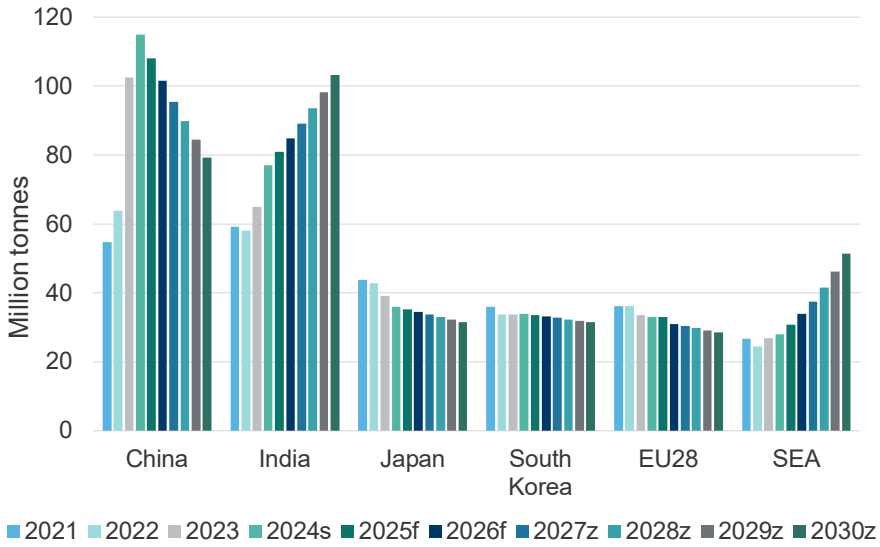
Global metallurgical coal import volumes to remain steady

Demand for metallurgical coal imports grew 7% in 2024, reaching a total of 349 million tonnes (Mt). Like previous years, China and India accounted for a large proportion of import growth. In 2024, imports were higher than in 2021, when world metallurgical coal consumption hit a record high due to peak blast furnace to basic-oxygen furnace (BF-BOF) steel production.

Indian import demand continues to grow strongly due to increased BF-BOF steel production. India is expected to overtake China as the largest importer of metallurgical coal in 2028. Import demand from the EU, South Korea and Taiwan was stable in 2024, while Japanese imports fell 3 Mt. Vietnamese and Indonesian imports grew 1 Mt and 2 Mt respectively in 2024.

Global steel production is expected to increase modestly through the outlook period, with growth projected at an average 0.8% per annum. However, a slight increase in the share of Electric Arc Furnace (EAF) steel production — with either Direct Reduced Iron (DRI) or scrap steel as feedstock — at the expense of coal-consuming blast furnace production, will likely result in a slight fall in global metallurgical coal demand through to 2030.

Figure 4.1: Metallurgical coal imports



Notes: **f** forecast; **s** estimate; **z** projection.
Source: McCloskey (2025); Department of Industry, Science and Resources (2025)

Despite falling global demand for metallurgical coal, global imports are expected to be resilient: exporter cost and quality advantages are likely to see imports take market share from Chinese domestic suppliers. Global imports are forecast at 350 Mt in 2030. Increased industrialisation and urbanisation in India and Southeast Asia (SEA) are expected to result in strong import growth in the region. This is expected to be offset by the impact of slowing steel production in China and the introduction of the Carbon Border Adjustment Mechanism (CBAM) in the EU.

Risks to the outlook include the uptake rate of low-emission steel production technology, the availability of feedstock, the impacts of trade measures on business confidence and global growth, and the level of domestic coal production in China and India.

4.3 World imports

Chinese imports to fall as traditional steel production continues to slow

Lower steel prices affected Chinese steel mill profitability throughout 2024, with average steelmaker loss-making during the period. Despite low profits, Chinese steel exports had the highest year on record in 2024. An oversupplied Chinese steel market is expected to weigh on the demand for metallurgical coal through the outlook period.

Chinese imports grew again in 2024, despite predictions they would ease in line with Chinese steelmaking activity. China's metallurgical coal imports have doubled since 2021, in a period when BF-BOF production fell around 2%. In 2024, an increase in safety-related monitoring had an adverse impact on metallurgical coal production in China. Increased imports coincided with historically high Chinese stockpiles, the result of the prioritisation of energy security in the wake of supply shocks in recent years, most notability at the start of the Russian invasion of Ukraine.

Close to half of Chinese imports were from Mongolia in 2024, as new rail infrastructure and a lack of alternative trading partners drove purchases. Russia made up a further quarter of imports, while Australia, Canada and the US made up the bulk of the remainder. The trend in Chinese import market share in 2024 is expected to continue over the outlook period: Mongolia has high quality coal with low transport costs and Russian coal sells at a discount due to sanctions.

The outlook for Chinese steel production — and hence Chinese metallurgical coal demand — is more uncertain than for some years. Domestic steel demand is forecast to remain soft and the outlook for exports has worsened (see *Iron ore* chapter). There has been an increase in the incidence of anti-dumping and other trade measures against Chinese steel in recent months, as countries look to protect their domestic industries from cheaper Chinese imports.

The proportion of EAF produced steel is expected to increase gradually through to 2030 in China, reducing metallurgical coal consumption. Unlike iron ore, metallurgical coal cannot be used in any green steel pathway without CCUS, and thus the shift away from blast furnaces to EAF results in a reduction in total demand for metallurgical coal as opposed to a change in product mix (see *Iron ore* chapter). The cost of electricity as an input has limited EAF capacity utilisation in recent years, given they are competing with China's relatively new and efficient blast furnaces. Additionally, EAFs use scrap steel as a feedstock, the availability of which depends on recycling rates. DRI is an alternative to scrap steel as an input in the EAF process but faces challenges in sourcing and processing suitable high-grade feedstock. Domestic and international policies that introduce carbon pricing into steel and downstream products may assist with improving the commercial prospects of low-emission steel facilities, but this will come at a cost to consumers.

Chinese metallurgical coal imports are expected to fall from 115 Mt in 2024 to 79 Mt in 2030, with falling Chinese domestic production only partly offsetting the impact of lower metallurgical coal demand from declining Chinese steel production.

EU imports to fall as low-emission facilities replace aging blast furnaces

EU metallurgical coal imports were steady in 2024 but seem to be in a long-term structural downturn. While the shift to green steel in the EU creates an opportunity for DRI-grade iron ore imports, metallurgical coal is not used in EAF production routes and will likely result in falling imports.

Domestic blast furnace facilities in the EU are ageing and face both cost and price pressures. Costs are set to increase as the CBAM comes into effect from January 2026: steel and iron producers and importers will be required to surrender CBAM certificates for a progressively larger proportion of their emissions. At the same time, EU producers are facing global steel excess capacity and resultant cheap imports are putting downwards pressure on steel prices.

Slim operating margins have come at a time where significant capital expenditure is required to construct low or zero emissions facilities. A green premium for low carbon steel may present some reprieve for EU producers, but this depends on the willingness and capacity of end

consumers to pay more. Ultimately, looming carbon liabilities are expected to induce a small shift towards coal-free steel production, manifesting in a 4 Mt decline in metallurgical coal imports by 2030.

India and Southeast Asian imports to lift as blast furnace capacity rises

Although imports tapered off in the second half of 2024, Indian imports grew strongly again in 2024, rising by 19%. Of late, import growth has been outpacing crude steel production, which grew 6% in 2024. Domestic miners, including state-owned Coal India, have been struggling with deposit quality and washing capacity, with most metallurgical coal produced used in power plants. To combat the nation's reliance on imports, India's Ministry of Coal is looking to raise the nation's raw metallurgical coal output from 67 Mt in 2023–24 to 140 Mt per year by 2030 and has announced it will commission new washeries.

Indian demand will continue to be underpinned by its blast furnace capacity expansion pipeline, with over 100 Mt in annual capacity under construction or announced, more than total blast furnace production in 2024. Given the scale of this increase, a significant proportion of metallurgical coal demand will still need to be met by imports, with growth of 26 Mt projected from 2024 to 2030.

Southeast Asia is expected to grow its BF-BOF capacity at an even greater rate than India, although starting from a lower base. This is driven by underlying economic growth and industrialisation prospects, as well as planned and underway capacity additions. Comparatively low labour costs and low steel use per capita underpin India and Southeast Asia's steel production potential.

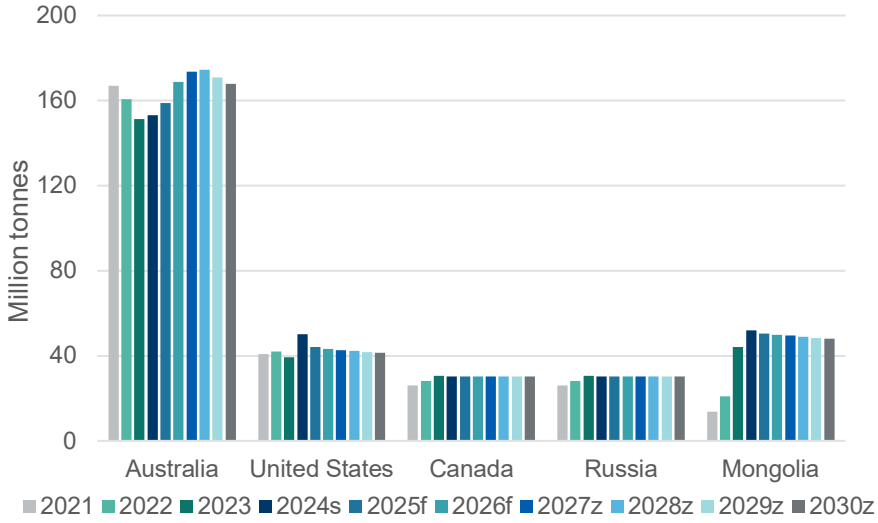
4.4 World Exports

US, Mozambique exports to decline as high-cost mines close

US exports had a strong year in 2024, with exports of 50 Mt, a significant 28% increase on 39 Mt in 2024. Exports to China showed strong growth, with a year-on-year increase of 82% fuelled by high H2 2024 volumes.

US exports are expected to drop in 2025 then decline gradually throughout the outlook period, as lower prices weigh on high-cost producers. US freight costs to Asia are higher than those of major competitors, when combined with above-average production costs, places US mines at a competitive disadvantage. Some producers have already faced challenges: Ramaco closed its unprofitable Knox Creek mine in Q4 2024, and White Forest Resources, Corsa Coal and Allegheny Metallurgical have all filed for bankruptcy in the last 6 months.

Figure 4.2 Metallurgical coal exports



Notes: f forecast; **s** estimate; **z** projection.
Source: McCloskey (2025); Department of Industry, Science and Resources (2025)

Mozambique is a high-cost producer, with all its mines operating above the 90th percentile of the total cash cost curve when costs are normalised to 2024 sale prices. These mines were profitable in 2022 and 2023 due to extremely high prices, but the forecast normalisation of prices is expected to result in a decline in market share and export volumes for Mozambique throughout the forecast period. This is not expected to materially impact the seaborne market given Mozambique currently exports 4 Mt annually.

Heightened uncertainty around global trade also presents a downside risk to US and Mozambique exports, as lower profit margins provide less ability to absorb new costs (for example, tariffs or carbon prices).

Russian capacity to increase but sanctions will weigh on profitability

Russian exports increased by 16% in 2024 as trade sanctions continued to have a limited effect on trade volumes. Russian exports remained reliant on China and India during 2024, with a 92% market share between them. Malaysia, South Korea, Turkey and Vietnam imported small volumes from Russia during 2024.

Russian miners are experiencing declining profits, with some companies posting net losses in 2024. Sanctions have negatively impacted the sale price of Russian coal given its limited trading partners, causing some metallurgical coal producers to cease production. Downwards price pressure is expected to continue for the duration of the Russia-Ukraine conflict.

Completion of new transport infrastructure in eastern Russia is expected to offset the impact of mine closures. Russia's new Pacific Railway is expected to be completed in 2025 after a trial cargo passed along the route in late 2024. It connects the Elga deposit in Yakutia to Port Elga in Khabarovsk, bypassing the Baikal-Amur Mainline (BAM) and the Trans-Siberian Railway (TSR) which have been congested since 2022. Increased rail capacity will likely result in increased export competition in Asia. Mining company Elga is in the process of ramping up production at its Elgaugol complex, which could see export volumes of up to 30 Mt shipped to Asian markets by 2026 based on processing capacity. Additional supply from mining company Kolmar may also come online over the period.

Mongolia to maintain high export levels through China trade

Mongolia continued to build on its recent extraordinary export growth, with exports growing another 18% in 2024, driven by improved rail infrastructure with China. Mongolian export volumes are expected to stabilise near current levels during the outlook period.

Declining Chinese steel production presents a risk to Mongolian exports, as the cost of rail transport through Russia is expected to prevent Mongolia from exporting to other Asian destinations. Slowing domestic Chinese metallurgical coal production should provide some upside for Mongolia, allowing it to maintain export levels even as Chinese consumption tapers off.

4.5 Prices

Prices expected to fall slightly over the outlook period as lower cost supply comes online

Prices for Australian benchmark premium hard coking coal (PHCC) fell throughout the first three quarters of 2024 before stabilising in October, averaging US$244 a tonne for the year (Figure 4.3). The fall in prices was mostly driven by falling demand for Australian spot cargoes. China is generally the marginal buyer on the Australian spot market, and negative profit margins at Chinese steel mills during 2024 weighed on prices.

Negative sentiment has continued into 2025, with prices remaining below US$200 a tonne for most of the year so far. Australian PHCC continued to command a premium over lower grade coals in 2024. The PHCC price premium over semi-hard coking coal and semi-soft coking coal was 18% and 62%, respectively. These premiums are expected to moderate in line with long term trends as PHCC supply disruptions ease.

Prices remained vulnerable to supply shocks in 2024, as demonstrated by the spike in prices at the end of June 2024 when the Grosvenor mine halted production due to a fire. During the outlook period, severe wet weather and La Niña weather patterns are expected to continue to impact Australian supply on an intermittent basis and result in price volatility. However, the magnitude of price impacts may be lower than those seen from Australian supply shocks in 2022 and 2023, due to increased Mongolian and Russian production and transport capacity.

Beyond weather effects, global supply and demand are expected to remain approximately in balance through the outlook period, contrasting with the elevated pricing of recent years. As such, prices are expected to

average near the highest unit production costs. This results in prices averaging around US$200 a tonne (nominal terms) through the forecast period. The effects of new lower cost Australian and Russian supply and increased operational efficiency is expected to offset inflation in mining input costs and production disruption.

4.6 Australia

Australian exports to recover as new production ramps up

A 6 Mt increase in total production in 2024 broke a 4-year trend of declining production, as Queensland experienced a reprieve from the strong La Niña cycles that have limited production in previous years.

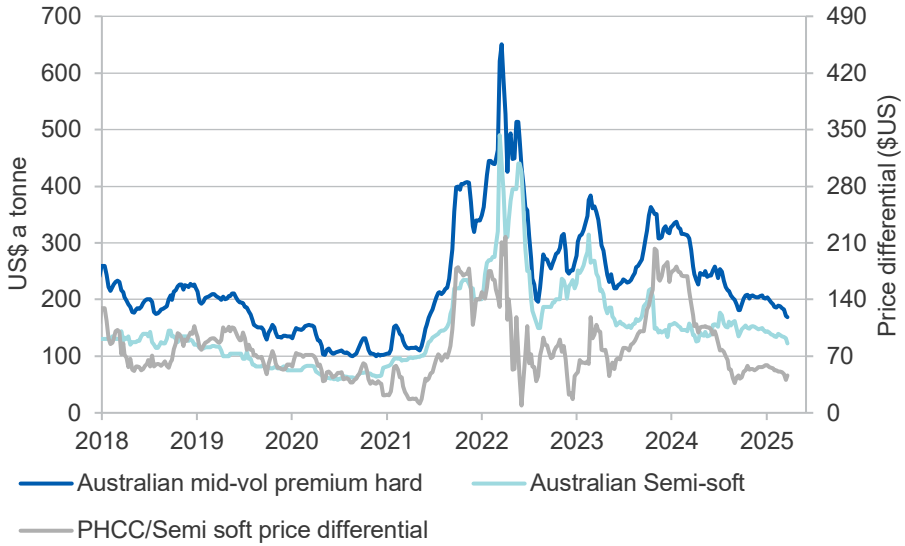
Maxwell, Olive downs, Centurion, Vickery and Grosvenor are all expected to approach full production capacity over the outlook period, resulting in an additional 20 Mt per annum of production by 2028. This increase is expected be partially offset by the closure of several small mines during the period as their economic reserves are exhausted, particularly into 2029–2030. The increase in production is expected to boost exports.

BHP reported its H2 2024 output up 14% compared to H2 2023, citing a focus on improving strip ratios and productivity. BHP forecasts 2024–25 saleable production in line with the upper half of guidance of 33-38 Mt, and expects to lift output to 43-45 Mt per annum in the next 5 years. BHP had a 23% market share of Australian metallurgical coal production in 2024.

Weather remains a risk to Queensland and northern NSW production. Major Queensland coal ports experienced a 35% year-on-year decline in exports in February 2025, coinciding with heavy rainfall in North Queensland. The frequency and intensity of heavy rainfall events has been increasing globally, and is predicted to continue to do so. These events will continue to pose risks to Australian metallurgical coal supply.

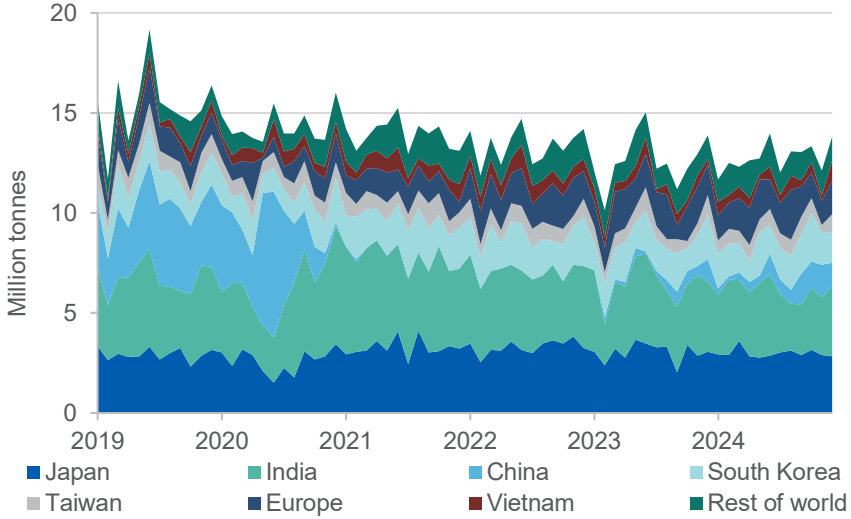
Access to capital, insurance and social license to operate remain challenges cited by the coal mining sector. Lower spot prices will also make it more difficult for new projects to obtain financing than in recent years of elevated prices.

Figure 4.3: Metallurgical coal price, 2018 to 2025



Source: McCloskey (2025)

Figure 4.4: Australia's metallurgical coal export volumes, monthly



Source: ABS (2024) International Trade, Australia (trade tables subscription)

Forecast prices are expected to result in existing operations producing at maximum available capacity. However, a prolonged decline in prices may result in some older and smaller mine closures being brought forward.

Australia's export markets are relatively diverse (Figure 4.4), making Australia responsive to changed trade and market conditions. For example, exports to China doubled in 2024 due to strong volumes and arbitrage pricing from September to December, while Indian market share declined slightly against 2023 levels. Australian exports to the key growth regions of India and Southeast Asia are expected to rise over the outlook period.

Increased production, particularly in Queensland, is expected to result in exports rising from 151 Mt in 2023–24 to 174 Mt by 2027–28, before declining slightly to 169 Mt in 2029–30 (Figure 4.5). A decline in prices from elevated levels in 2024 is expected to see earnings ease from $54 billion in 2023–24 to $37 billion in 2029–30.

Exploration spending steady in December 2024 quarter

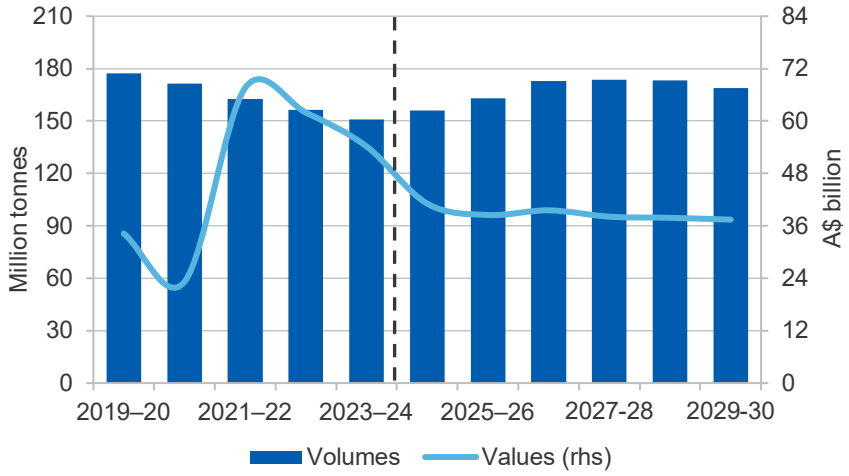
Coal exploration spending remained steady in the December quarter and throughout 2024, even as spot prices declined. Exploration expenditure was concentrated in Queensland in 2024, and the majority was likely prospective metallurgical coal deposits. Exploration spending was still elevated compared to historical levels.

Revisions to the outlook

The 2024–25 and 2025–26 earnings forecasts have been revised down by $2 billion and $3 billion, respectively, from the December 2024 *Resources and Energy Quarterly*. This is mostly due to a downgrade in production volumes for both years due to recent production levels, company guidance and weather impacts, as well as a minor price revision for 2025–26.

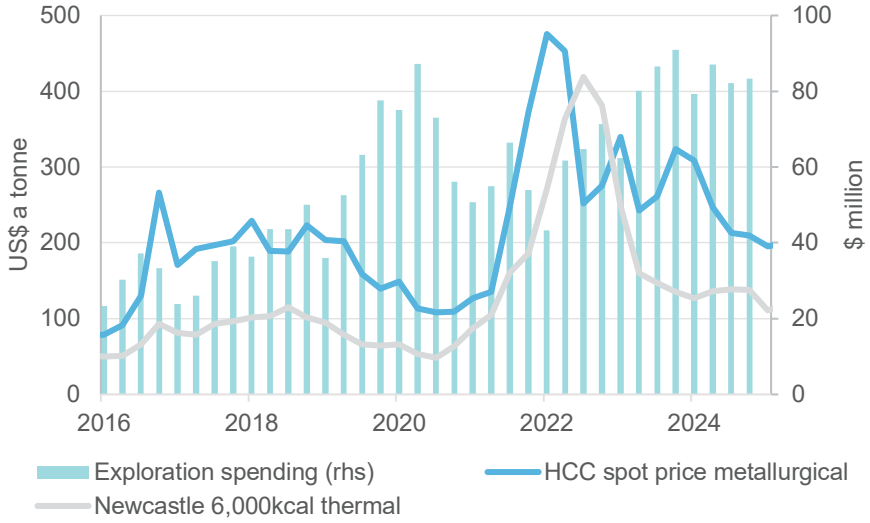
The medium-term outlook has also revised earnings down by $2-3 billion each year compared with the March 2024 *Resources and Energy Quarterly*, as production is now expected to peak at a lower level than previously anticipated.

Figure 4.5: Australia's metallurgical coal exports



Source: ABS (2025) International Trade, Australia 5454.0, Department of Industry, Science and Resources (2025)

Figure 4.6: Australian coal exploration expenditure and prices



Notes: Exploration for all coal types
Sources: ABS (2025); McCloskey (2025)

Table 4.1: World trade in metallurgical coal

	Unit	2024[s]	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
World trade	Mt	349	348	357	360	359	354	350	0.1%
Metallurgical coal imports									
China	Mt	115	108	102	96	90	84	79	-6.0%
India	Mt	77	81	85	89	94	98	103	5.0%
Japan	Mt	36	35	34	34	33	32	31	-2.2%
European Union 28	Mt	33	33	31	30	30	29	29	-2.4%
Southeast Asia	Mt	28	31	34	37	42	46	51	10.7%
Metallurgical coal exports		**2024[s]**	**2025[f]**	**2026[f]**	**2027[z]**	**2028[z]**	**2029[z]**	**2030[z]**	
Australia	Mt	153	159	169	174	174	171	168	1.5%
United States	Mt	50	44	43	43	42	42	41	-3.1%
Canada	Mt	30	30	30	30	30	30	30	0.0%
Russia	Mt	43	45	45	45	45	45	45	0.8%
Mongolia	Mt	52	50	50	49	49	48	48	-1.3%
Mozambique	Mt	4	3	2	2	1	1	1	-25.0%

Notes: **f** Forecast; **s** Estimate; **r** Compound annual growth rate; **z** Projection.
Source: IEA (2025) Coal Information; McCloskey (2025); Department of Industry, Science and Resources (2025)

Table 4.2: Metallurgical coal outlook

World	Unit	2024[s]	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Contract prices[e]									
– nominal	US$/t	246	202	205	202	198	200	203	-3.2%
– real[d]	US$/t	246	198	197	189	182	181	183	-4.9%
Spot prices[g]									
– nominal	US$/t	238	202	205	201	198	200	203	-2.6%
– real[d]	US$/t	238	198	197	189	182	181	183	-4.3%
Australia	**Unit**	**2023–24[s]**	**2024–25[f]**	**2025–26[f]**	**2026-27[z]**	**2027-28[z]**	**2028-29[z]**	**2029-30[z]**	
Production	Mt	157	160	168	178	179	178	174	1.7%
Export volume	Mt	151	156	163	173	174	173	169	1.9%
– nominal value	A$m	54,181	41,089	38,485	39,555	38,099	37,838	37,422	-6.0%
– real value[i]	A$m	55,779	41,089	37,239	37,314	35,064	33,977	32,738	-8.5%

Notes: **d** In 2025 US dollars. **e** Contract price assessment for high-quality hard coking coal. **i** In 2024–25 Australian dollars. **s** Estimate **f** Forecast **z** Projection. **g** Hard coking coal fob Australia east coast ports.
Source: McCloskey (2025); ABS (2025) International Trade in Goods and Services, Australia, 5368.0; Department of Industry, Science and Resources (2025)

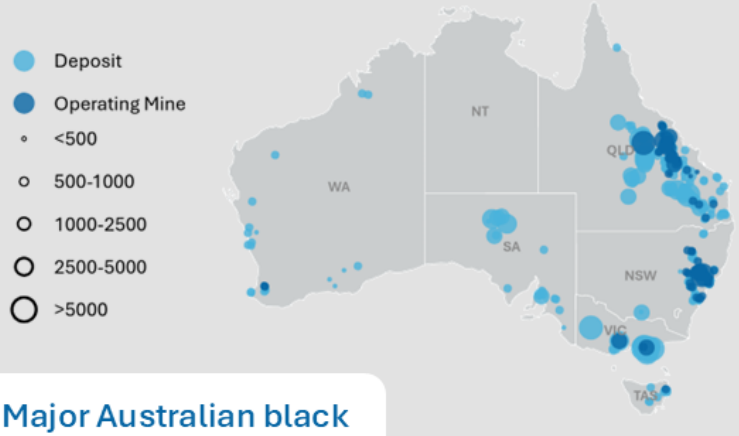
Thermal Coal

Australia's thermal coal sector

World's 2nd
largest thermal coal exporter

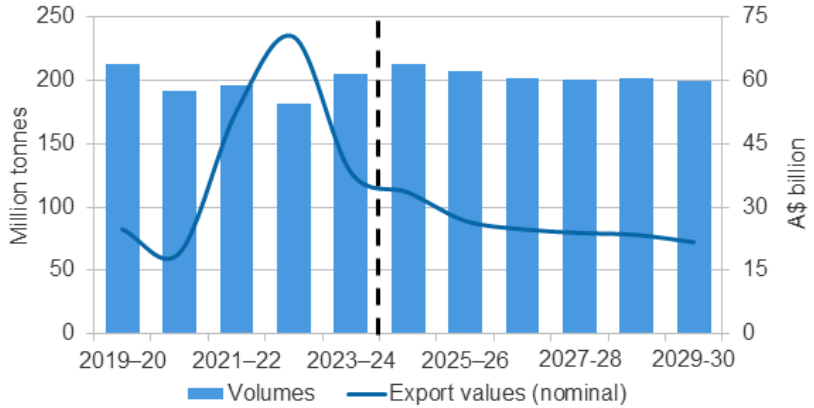
Japan and China
are the biggest export markets

80%
of Australia's thermal coal is exported



Major Australian black coal deposits, Mt

Australian thermal coal exports

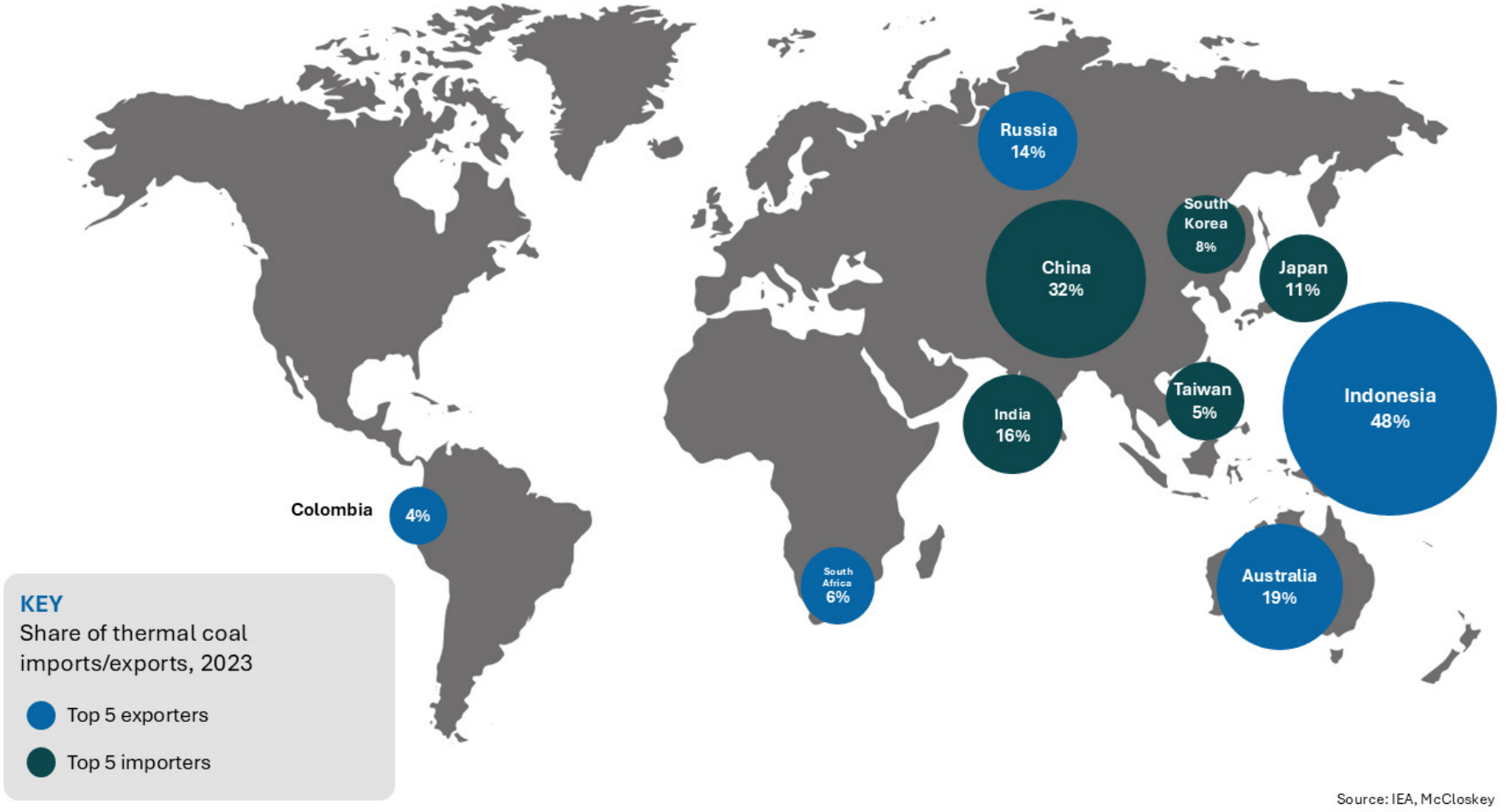


Outlook

- Prices to decline over the outlook period
- Depleting reserves will reduce Australian output
- New coal power plants concentrated in Asia
- Thermal coal trade to reduce faster than consumption

Source: Geoscience Australia; IEA; ABS; DISR; McCloskey

Thermal coal trade map



Source: IEA, McCloskey

5.1 Summary

- Australia's thermal coal export earnings are expected to ease from $34 billion in 2024–25 to around $22 billion by 2029–30 (in real terms) as prices continue to fall.
- Thermal coal spot prices are expected to fall slowly over coming years, from US$135 a tonne in 2024 to US$98 a tonne (in real terms) by 2030. Contract prices are expected to fall from around US$140 a tonne (in JFY 2024–25), converging on spot prices.
- Australia's export volumes are expected to decline to around 199 million tonnes (Mt) per annum by the end of the outlook period from a downward revision to the output of some mines.

5.2 World trade

Energy transition will cut thermal coal demand over the outlook period

The volume of thermal coal traded in seaborne markets is forecast to fall over the outlook period. Two key factors are expected to drive this change:

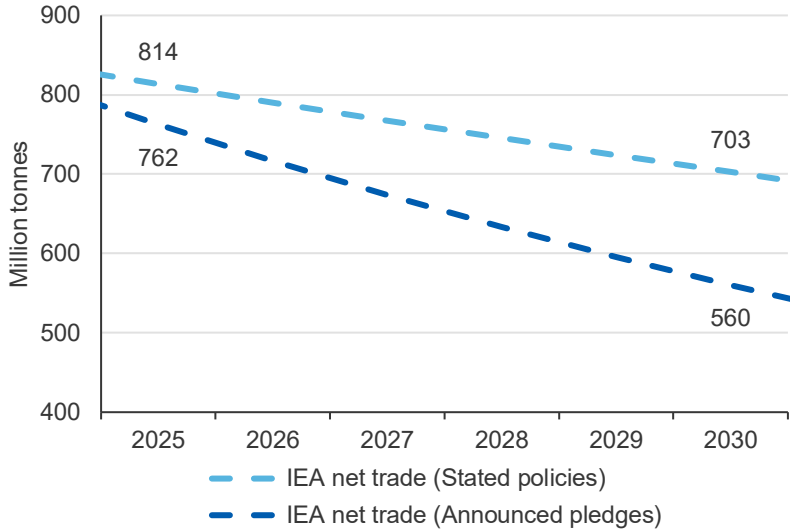
- decarbonisation — the rollout of alternative energy sources including renewables (especially wind and solar), nuclear and gas
- domestic production — energy security has become an increasing focus across the world. Countries with domestic reserves (such as China and India) are increasing production and mine capacity to reduce import reliance.

While there is consensus seaborne trade will fall, the pace of the decline remains uncertain. Some industry participants/analysts expect sustained coal consumption over the outlook period, while others expect a rapid fall.

The International Energy Agency (IEA) World Energy Outlook report (Figure 5.1) highlights this uncertainty through scenarios. The IEA 'Stated Policies' scenario is based on a detailed review of the current policy landscape and provides a conservative benchmark for the future. The Announced Pledges' scenario includes all recent major national announcements as of end August 2024. The Announced Pledges scenario assumes all countries implement national targets in full and on time.

Between 2025 and 2030, the Stated Policies scenario shows a 14% decline in seaborne global thermal coal trade, while Announced Pledges shows a 27% decline.

Figure 5.1: Seaborne global thermal coal trade, 2025 to 2030



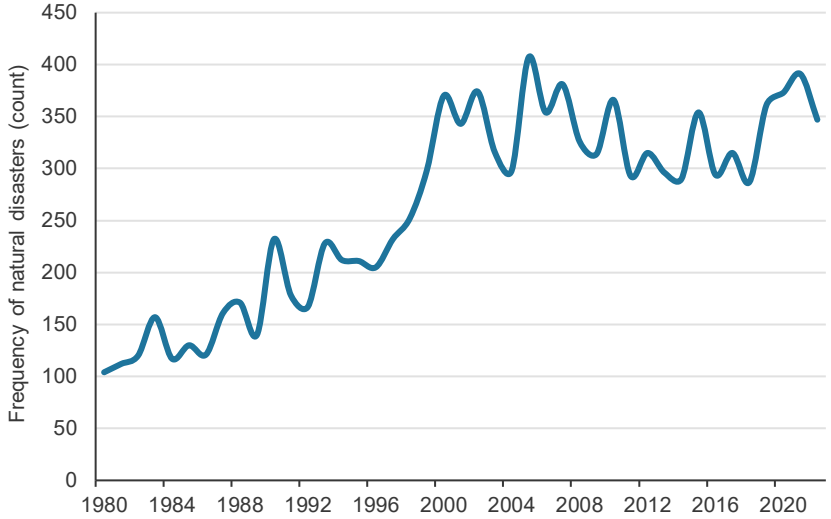
Notes: Seaborne trade data from IEA differs from the REQ due to differing methodologies
Source: IEA World Energy Outlook

Increasingly unpredictable weather to impact all aspects of coal markets

Weather disruptions have played an increasingly prominent role in coal markets over the last few years. These disruptions have become more frequent and severe and have resulted in import demand consistently exceeding expectations (see Figure 5.2).

The impact of these disasters has affected all aspects of coal markets, including production, consumption, transport, and supporting infrastructure (see Figure 5.3). More unpredictable weather is likely to make thermal coal markets and prices more volatile over the outlook. With energy security a key concern in import-reliant countries, storage levels are likely to rise with spot markets used to manage variability between unforeseen demand and contracted supply.

Figure 5.2: Frequency of natural disasters, 1980 to 2022



Source: IMF (Frequency of natural disasters). Natural disaster categories include drought, extreme temperature, flood, landslide, storm, wildfire.

Figure 5.3: Impacts of natural disasters on coal markets

Natural disaster	Demand impact	Supply impact
Extreme temperature	Increased demand for heating and cooling	Extreme heat can cause rail to buckle and degrade stockpiles
Drought	Hotter temperatures increase demand for cooling. Hydro supply falls increase demand on other fuels, including coal.	Generally increased supply from dry weather. Lower ability to transport if river levels drop (Indonesia).
Storm	Rain fills hydro reservoirs, reducing coal demand.	Rain makes production difficult, reducing supply.
Flood and wildfire	Damage to power infrastructure can force demand to fall	Potential for mine closures and damage to transport infrastructure

5.3 World imports

Global imports are expected to remain dominated by China and India, with the two economies representing over half of global import demand over the outlook. The impact of falling Chinese imports is unlikely to be fully met from increased demand from India and Southeast Asian markets — contributing to shrinking global thermal coal trade. Uncertainty also remains around whether some Southeast Asian proposed coal-fired power projects will progress.

The Japanese, South Korean, and Taiwanese markets — which together accounted for just under 25% of world trade in 2024 — are expected to provide relatively stable import demand, with a minor fall of 10 Mt over the outlook as Japan and South Korea ramp up nuclear capacity.

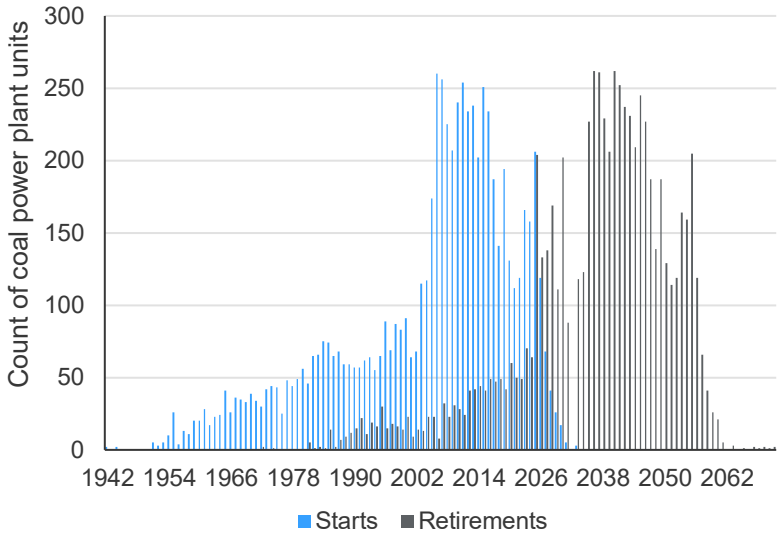
The coal power project pipeline, concentrated in Asia, does not provide sufficient demand to support seaborne markets long term

The pipeline of coal projects provides a good indication of the location and size of emerging demand. Of the 1,749 coal fired units in the pipeline in July 2024, 89% were in Asia. However, pipeline project numbers are small compared with operating and historical averages (Figure 5.4). Over the next decade, coal power unit retirements are forecast to be triple builds.

Vietnam, the Philippines and Bangladesh are facing increasing domestic and international pressure to abandon or reduce coal-fired power plant construction. While these markets are expected to increase imports over the outlook period, the size of this demand is still uncertain. Vietnam cancelled 10.2 GW of new coal plant capacity in 2023, the highest capacity cancellation in the world that year. Vietnam also committed to ceasing issuance of new permits and construction of new unabated coal-fired power generation projects as part of the Global Coal to Clean Power Transition Statement.

Bangladesh's energy plan projects that its coal usage for power will rise further and peak in the early 2040s. However, over the last decade the number of proposed coal-fired power plants in the pre-construction phase has consistently fallen without progressing to the construction phase.

Figure 5.4: Coal power plant starts and retirements, 1942 to 2071



Source: Global Coal Plant Tracker accessed January 2025. Only includes plant units that have a known start date

China's imports to fall due to high domestic production and climate targets

The 'peak' of Chinese coal consumption has been forecast for some time, as projected in previous REQs. However, the 'peak' has been delayed. Unpredictable energy output from alternative energy sources (such as solar, wind, and hydro), combined with overall growing energy demand, and decreased domestic production, have all sustained China's thermal coal imports.

63% of the global pipeline for the number of coal-fired power projects are in China. However, while these projects add to China's capacity for coal-fired power, they may not necessarily translate to additional consumption. China is building a sizable production reserve system to secure dispatchable energy when renewables are unavailable. China's coal-fired power plants are undergoing technical retrofits to increase flexibility and assist in providing "peaking" power capacity.

Indian imports to increase modestly to support rising energy demand

Over the outlook period, India will require more energy to support GDP growth, a rising population, urbanisation, and increased electrification. In 2024, India generated an estimated 1.8 petawatt-hours of electricity. By 2030, this is expected to increase 34% to 2.4 petawatt-hours. However, despite the large increase in forecast energy requirements, this will likely only partially translate to increased thermal coal import demand.

India has ambitious targets for the deployment of renewable energy capacity — especially for solar, which by 2030 is expected to make up 17% of total energy generation (up from 10% in 2024). India is also expanding its domestic coal production. India is home to the second largest number of proposed coal mine projects and has the largest share of coal projects in the exploration phase (59%). The impact of increased domestic production and the rollout of renewables results in a relatively flat outlook for imports, with modest growth of 10 Mt forecast over the outlook period.

5.4 World exports

Seaborne exports are expected to fall over the outlook period, as demand declines. The decline is expected to be more acute for coals with lower calorific value. Burning low quality coals emits toxic substances which cause smog and respiratory illnesses. Most coal plant units in operation today (that have known coal feedstock specifications) use higher grades of coal that have a cleaner burn. While demand for higher grade coals is also expected to decline over the outlook, the pace is expected to be slower than for lower quality coals.

Indonesian policy changes could divert supply to the domestic market

Domestic policies in Indonesia are favourable to coal production and exports. The Indonesian Government increased its coal production quota in 2024 by almost 30% compared to the previous target volume set in 2020. The increase helped facilitate increased production and exports, with exports growing 5% year-on-year. The Indonesian government is

currently considering changes to royalties. Increases in royalties could impact the competitiveness of Indonesian mines.

Indonesia is expected to retain its position as the world's largest exporter of thermal coal but will likely lose market share as global demand falls, higher quality coal is prioritised, and Indonesian domestic demand rises. China is Indonesia's primary export market, representing 46% of Indonesia's thermal coal exports in 2024. As demand from China falls, there may be a minor decline in Indonesian domestic production, with most of this concentrated among mines producing lower grades of coal. Indonesia will likely be able to divert most of its lost exports from China to its domestic market. Indonesian power demand is expected to increase by close to 40% over the outlook period, driven by economic growth and the expansion of energy-intensive metals processing.

Trade actions continue to influence Russian supply

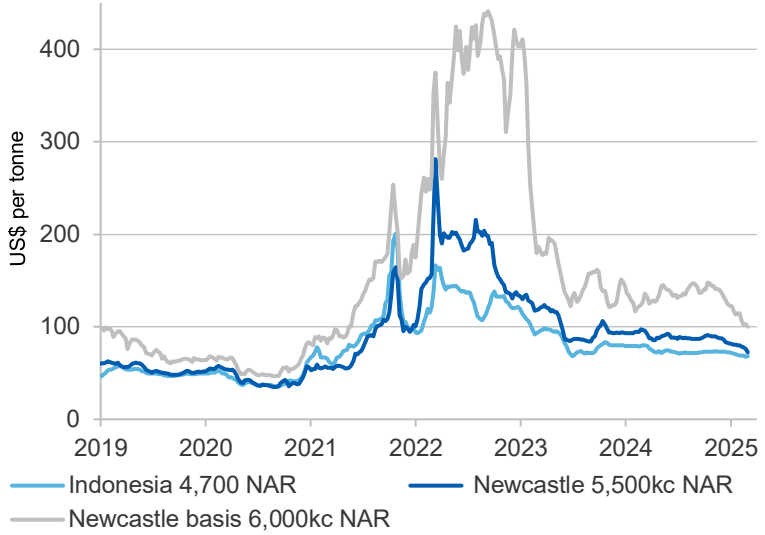
Seaborne supply and demand is expected to remain relatively balanced over the outlook period, but changes in volumes supplied by Russia remain a key uncertainty. In addition to logistical issues, Russian supply has faced transportation constraints over the last three years, as rail capacity has been diverted to high value exports (including metallurgical coal) and the movement of military assets. Expansions to rail capacity (see the *Metallurgical Coal* chapter) and a new bridge improving access to China will assist in easing transport constraints.

Russian coal producers mostly managed to find alternative markets (China and India) after sanctions imposed in the wake of the invasion of Ukraine in February 2022. Selling at a large discount, export volumes only fell 13% between 2021 and 2023. However, exports were further impeded in 2024 when the US imposed secondary sanctions, leading to Russian supply falling a further 20% between 2023 and 2024 (a 30% fall compared to 2021). If stranded Russian supply returns to global markets, it would place downward pressure on prices, potentially forcing some high-cost producers to curtail production.

5.5 Prices

The Newcastle 6,000 kcal price averaged US$110 in the first two months of 2025, but dropped below US$100 a tonne at the start of March (Figure 5.5). The primary reason behind recent low prices is high inventory levels in Asia during a relatively mild winter.

Figure 5.5: Thermal coal prices – Australia and Indonesia



Source: McCloskey (2025). NAR – Net as received.

Energy security concerns have led some economies in Asia to build stocks before expected seasonal peaks. Additionally, previous expectations of a possible La Niña weather episode raise the chance that disruptions to supply from the Southern Hemisphere (Australia and Indonesia) could coincide with high Northern Hemisphere winter demand (China and India). Elevated inventories pushed Newcastle 6,000 kcal price down to the lowest level observed in almost four years.

Prices expected to hold due to increases in the cost of production

Prices are expected to experience a modest fall over the outlook (in real terms) in line with marginal global oversupply. While price volatility is

expected to be high over the outlook period — as economies grapple with unpredictable supply and demand — prices are still likely to converge downwards towards the cost of production.

Risks are mostly weighted to the downside, with the potential for additional supply from Russia flowing into China, and cheaper gas prices from additional global LNG supply (see Gas chapter). Upside risks to this forecast include:

- poor performance of renewables and hydro
- ongoing disruptions to supply
- trade measures that make renewable technology more expensive
- higher than anticipated demand from energy-intensive industries (such as artificial intelligence).

5.6 Australia

Australian thermal coal exports were strong in 2024, reaching 209 Mt, the highest export volume on record. Favourable supply conditions and high demand from Japan and China provided support to Australian exporters.

Previous expectations of a La Niña cycle occurring late 2024 and 2025 have eased. The Australian Bureau of Meteorology stated that since late December 2024, the tropical Pacific has been 'La Niña-like', with signs of interactions between oceanic and atmospheric indices. The lower expectations of a typical La Niña cycle support Australian coal production, however cyclones impacting Australia's east coast remain a key risk.

Australian export volumes to fall but maintain market share

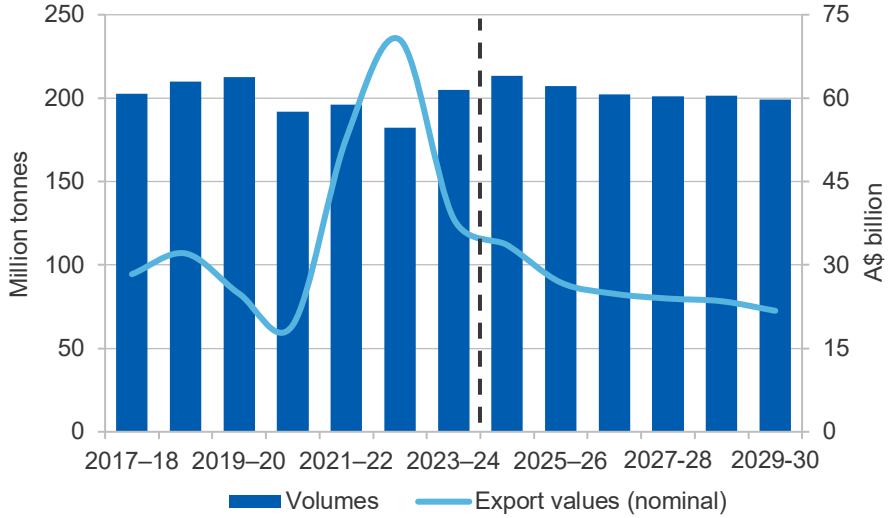
Australian exports are expected to decline over the outlook period. Falling global demand will increase competition among exporting nations, with high cost and low-quality exporters most impacted. In this context, Australian exports are expected to hold up relatively well, noting Australia's higher calorific value and established export markets. Australian volumes are forecast to decline from 209 Mt in 2024 to around 200 Mt in 2030, but market share is expected to remain flat or grow slightly.

Revisions to the outlook

Export volumes have been revised down slightly since the December 2024 *Resources and Energy Quarterly*. This change is due to a revision of mine output between thermal and metallurgical coal, and a slight downgrade to thermal coal. Export values have been revised lower to reflect a downward revision to prices and volumes.

Export values are broadly comparable to the March 2024 *Resources and Energy Quarterly*, except for 2024–25 which has been revised up by $4 billion due to a downward revision to exchange rates.

Figure 5.6: Australia's thermal coal exports



Source: ABS (2025); Department of Industry, Science and Resources (2025).

Table 5.1: World trade in thermal coal

Thermal coal									
	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
World trade	Mt	1,166	1,129	1,086	1,058	1,046	1,026	1,008	-2.4
Thermal coal imports		**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**CAGR[r]**
Asia	Mt	1,020	975	949	931	925	905	887	-2.3
China	Mt	421	375	350	326	302	281	257	-7.9
India	Mt	174	168	164	163	178	179	185	1.0
Japan	Mt	129	117	113	110	108	106	102	-3.8
South Korea	Mt	92	87	86	85	83	81	82	-1.9
Thermal coal exports		**2024**	**2025[f]**	**2026[f]**	**2027[z]**	**2028[z]**	**2029[z]**	**2030[z]**	**CAGR[r]**
Indonesia	Mt	530	519	512	504	504	497	495	-1.1
Australia	Mt	209	207	204	202	201	200	200	-0.7
Russia	Mt	136	133	132	131	129	129	129	-0.9
Colombia	Mt	54	51	49	48	45	38	37	-6.1
South Africa	Mt	68	68	66	66	67	67	67	-0.2
US	Mt	47	43	42	42	42	42	41	-2.3

Notes: **f** Forecast, **r** Compound annual growth rate, **z** Projection
Sources: International Energy Agency (2025); McCloskey (2025); Department of Industry, Science and Resources (2025)

Table 5.2: World trade in thermal coal

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
				Million tonnes					
Contract prices[a]									
– nominal	US$/t	147	126	126	128	128	127	118	-3.6
– real[b]	US$/t	140	118	115	114	113	109	100	-5.5
Spot prices[c]									
– nominal	US$/t	135	116	115	117	118	117	109	-3.5
– real[d]	US$/t	135	114	111	110	109	105	98	-5.2
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[f]**	**2027–28[f]**	**2028–29[f]**	**2029–30[f]**	**CAGR[r]**
Production	Mt	233	240	247	236	231	232	229	-0.2
Export volume	Mt	205	213	207	202	201	202	199	-0.5
– nominal value	A$m	37,214	33,534	27,730	26,309	26,033	26,147	24,868	-6.5
– real value[e]	A$m	38,341	33,534	26,837	24,820	23,960	23,476	21,756	-9.0

Notes: **a** refers to benchmark Japanese Fiscal Year 6322kcal GAR thermal coal contract reference price; **b** In current JFY US dollars; **c** fob Newcastle 6000 kcal net as received; **d** In 2025 US dollars; **e** In 2024–25 Australian dollars; f Forecast; **z** Projection
Sources: ABS (2025) International Trade in Goods and Services, Australia, Cat. No. 5368.0; McCloskey (2025); NSW Coal Services (2025); Queensland Department of Natural Resources and Mines (2025); Company Reports; Department of Industry, Science and Resources (2025)

Gas

Australia's LNG sector

81m tonnes

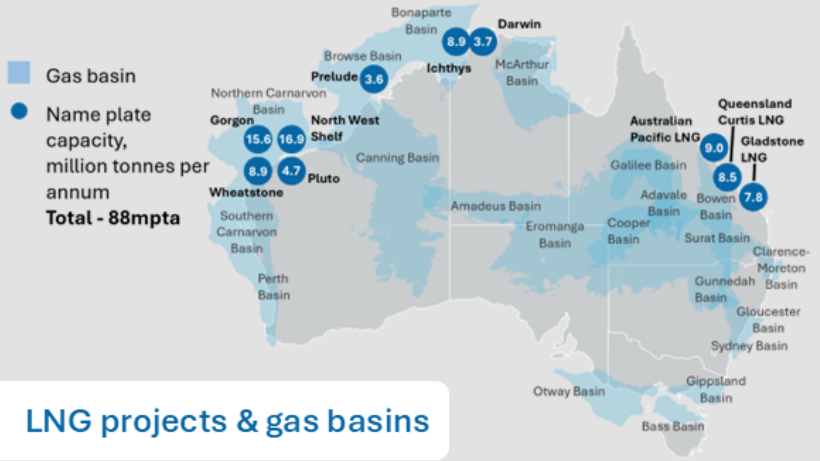
exported in 2023–24

80%

of Australian LNG sold to Japan, China and Korea

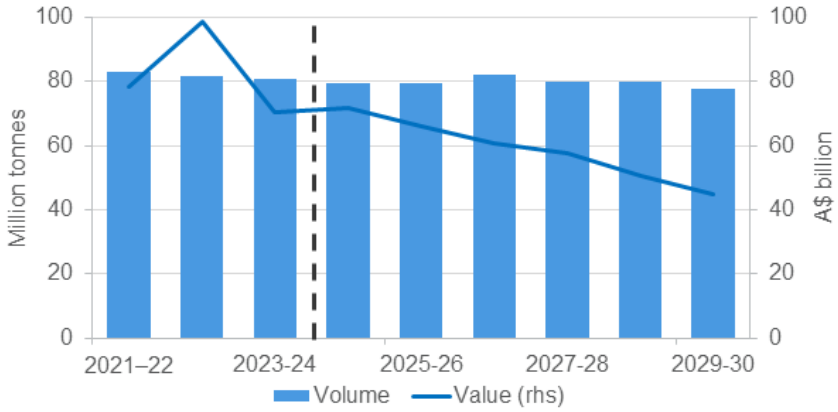
Around 3/4

sold on long-term contracts



LNG projects & gas basins

Australian LNG exports

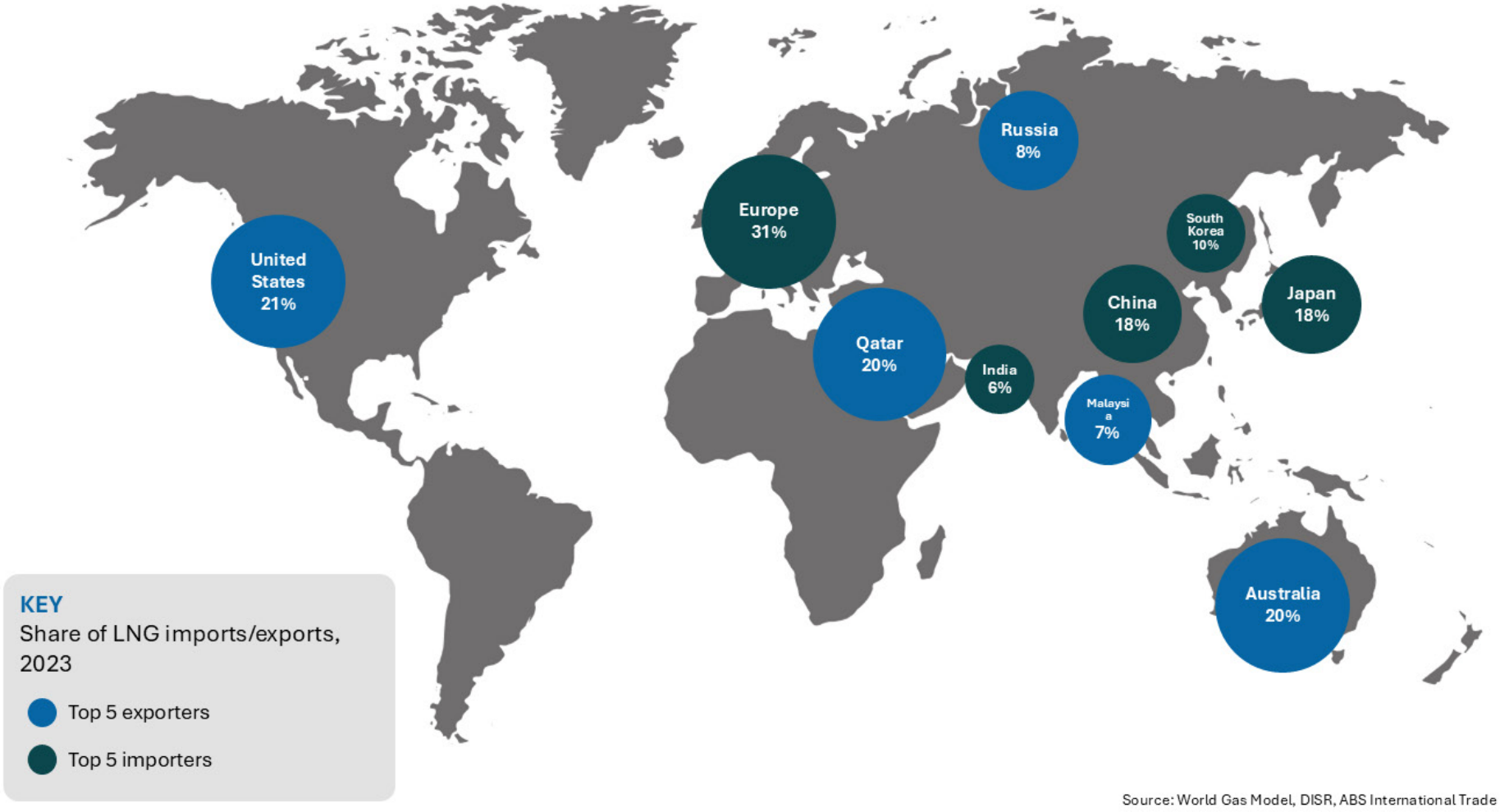


Outlook

- Earnings set to ease as prices drop
- Australian exports to ease slightly as developed reserves deplete
- Large growth global in supply expected
- Petroleum exploration expenditure remains above the 2023 average

Source: ABS; DISR; OCE

LNG trade map



Source: World Gas Model, DISR, ABS International Trade

6.1 Summary

- Australia's LNG export revenues are forecast to decline from $72 billion in 2024–25 to $45 billion (in real terms) by 2029–30. The outlook for 2024–25 has been revised up from the December 2024 *Resources and Energy Quarterly* due to minor supply disruptions and high prices.
- Forecast falls in export earnings largely reflect an expected easing in LNG prices, though depletion of some reserves could weigh on volumes after 2028.
- New LNG supply from the US and Qatar is projected to reduce prices from US$15/MMbtu (in early 2025) to US$9/MMbtu (in real terms) by 2030.

6.2 World trade

Gas markets are moving into a stronger growth cycle

LNG demand and supply firmed up in 2024 following the supply shocks of 2022 and forced readjustments of 2023. As European demand levels off, US LNG output will likely begin to find other markets (mostly in Asia) from the late 2020s.

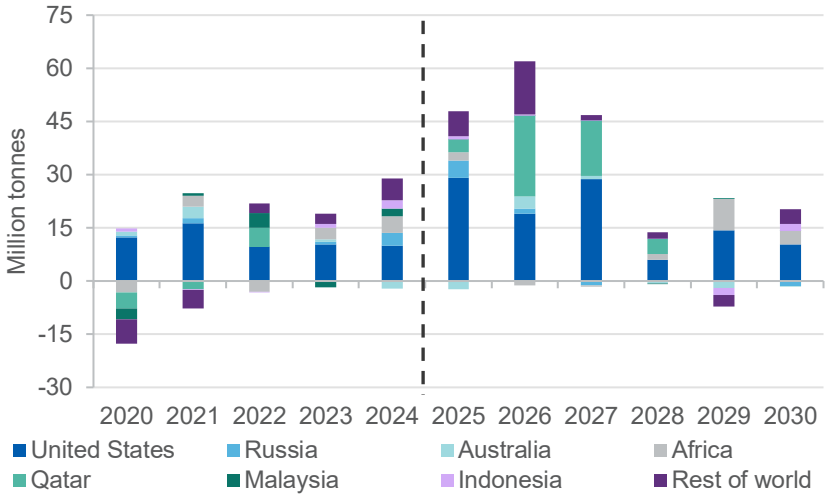
Asia remains the core growth market for LNG due to population growth and industrialisation, but with wide variation among Asian countries. Japanese LNG imports have peaked and South Korean imports are not expected to grow much further. However LNG demand has considerable potential to grow in China and South Asia. The development of LNG supply chains between the US and China has been hampered by trade tensions.

Oil-to-gas switching continues to grow around the world, especially in the Middle East and Asia. China has substituted a significant part of its diesel truck fleet with LNG-fuelled trucks. Tightening global emissions rules in the International Maritime Organisation could drive a similar transition (potentially involving use of hydrogen, ammonia or methanol) for global ships and seaborne freight services.

On the supply side, strong investment in US and Qatari LNG is expected to increase global LNG exports by around 5% in 2025, outstripping import growth of around 2.5%. Imports and exports will likely come into closer balance over subsequent years, with prices edging down.

Seasonal pressures held LNG prices up around US$15/MMbtu over January and February. Winter demand in Europe has kept markets tight, with unusually cold weather and low winds resulting in higher-than-normal electricity use and lower-than-normal renewable energy generation. The cessation of Russian gas flows through Ukraine exacerbated price pressures but is not likely to lead to further price shocks, since the expiry of contracts underpinning these flows was long anticipated.

Figure 6.1: Global LNG supply growth forecasts to 2030



Notes: 2020, 2021, 2022, 2023 and 2024 figures based on historical data.
Source: Department of Industry, Science and Resources (2025); NexantECA (2025)

Rising trade tensions and greater uncertainty over China's economic outlook have added to the risks facing LNG markets over the outlook period. Short-term geopolitical risks linked to military conflicts have some prospects of easing over time, but longer-term risks linked to climate change and extreme weather events will likely grow. Expected growth in

global supply could mitigate some of these risks, but the potential for delay in these projects could also become a risk in itself.

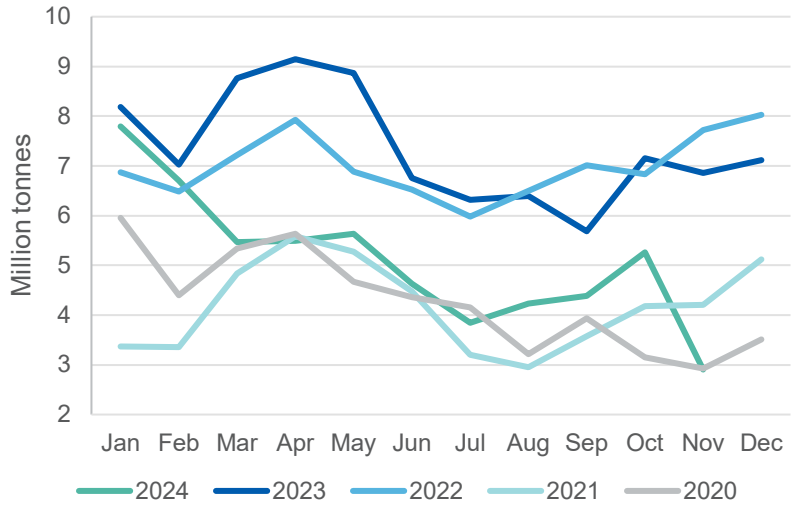
On balance, it is expected that new supply (Figure 6.1) will improve market stability and reduce LNG prices over the next five years, benefiting economies where gas sets electricity prices. LNG trade should remain in reasonable balance, albeit with risks growing on some fronts and with longer supply chains reducing market efficiency.

6.3 World imports

European LNG imports firmed up in late 2024 on seasonal factors

European LNG demand weakened in early 2024 but recovered as the Northern Hemisphere winter commenced (Figure 6.2). Demand pressures are expected to persist beyond 2024-25 winter season as inventories are rebuilt in line with stringent storage targets set by the European Commission. Inventory build helps to stabilise markets during the winter season, but can add to price pressures in the Northern Hemisphere summer when Asian LNG import demand is often highest.

Figure 6.2: Europe's monthly LNG imports, 2020–2024



Source: McCloskey (2025)

In structural terms, European LNG demand is likely to peak over the next few years, though imports may be sustained due to falling domestic supply. New seaborne output from the Plaquemines and Corpus Christi expansions in the US should also provide a longer-term solution to Europe's seasonal demand pressures. Renewable energy deployment remains high in Europe, which should lower overall gas use. However, the substitution of coal and nuclear power with renewables may also entrench dependency on gas as a firming fuel when peak renewable generation fails to align with peak demand. European dependence on gas is therefore likely to continue to embed in power systems even as daily baseload use falls.

European LNG imports are expected to rise in 2025 and 2026 as Europe completes its pivot away from Russian pipeline gas. LNG imports are then projected to hold largely steady through the rest of the outlook period as renewable energy output expands.

China's LNG imports are set to grow steadily as LNG displaces other fuels

Chinese LNG imports ended 2024 on a relatively modest note (Figure 6.3), with imports in December down 15% from levels recorded in December 2023. Economic uncertainty and trade tensions saw imports fall short of their 2021 peak in 2024, despite earlier forecasts that imports would set a new record in the year.

Technological changes are creating an upside for LNG use. China has made significant progress in replacing diesel fuel with LNG across its heavy-duty truck fleet, which is estimated at almost 9 million vehicles. Around a million LNG fuelled trucks are now operating in China, and the number is rising rapidly with LNG trucks accounting for a third of all heavy truck sales. This substitution has reduced pollution and cut diesel use in China by around 200,000 barrels per day.

On the downside, trade tensions with the US may result in further uncertainty for Chinese LNG importers. The US has announced additional tariffs against China, and China has responded with a 15% counter-tariff

on US LNG, lifting its overall tariffs on US LNG to 35%. China also announced in March that imports of US LNG would be halted for 40 days. The impact of this may be partly muted by pre-existing trade tensions which left the US supplying only about 5% of Chinese LNG imports.

However, China may also choose to limit seaborne LNG uptake for strategic reasons (such as potential for LNG to be blocked in the Malacca Strait), pivoting towards coal from its Shaanxi mines. On balance, China's LNG imports are expected to grow steadily (but not rapidly) through the outlook period.

Japan's LNG imports have probably peaked, but should not drop sharply

Japanese imports declined early in 2024 (Figure 6.4) and rose modestly over the rest of the year. Imports fell slightly over 2024 as a whole: industrial output held up, but restarts at nuclear power plants continue to displace LNG-fired power generation, albeit at a slow pace.

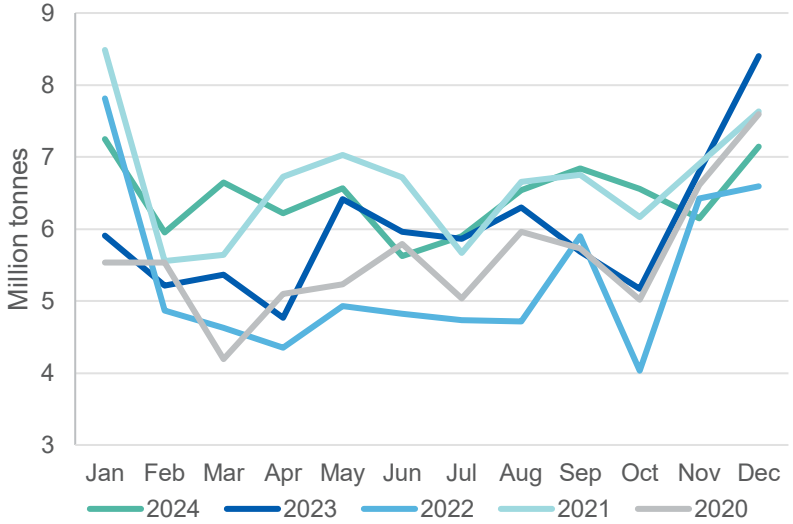
Japan's latest Strategic Energy Plan suggests that Japan will still require significant quantities of imported LNG until 2040. The new plan, released in February, includes a higher expectation for power demand due to emerging AI data centres and adoption of electric vehicles. Japan's electricity demand is now forecast to rise from just under 1000 TWh in 2023 to around 1100-1200 TWh by 2040. While nuclear and renewables are expected to account for the bulk of this, LNG will likely maintain an important role in underpinning energy security and supporting Japan's shift away from thermal coal.

South Korean LNG imports are approaching a peak

A brief cold stretch boosted South Korea's LNG imports in the early part of 2024, but demand has subsequently eased to hold around the average level of recent years (Figure 6.5).

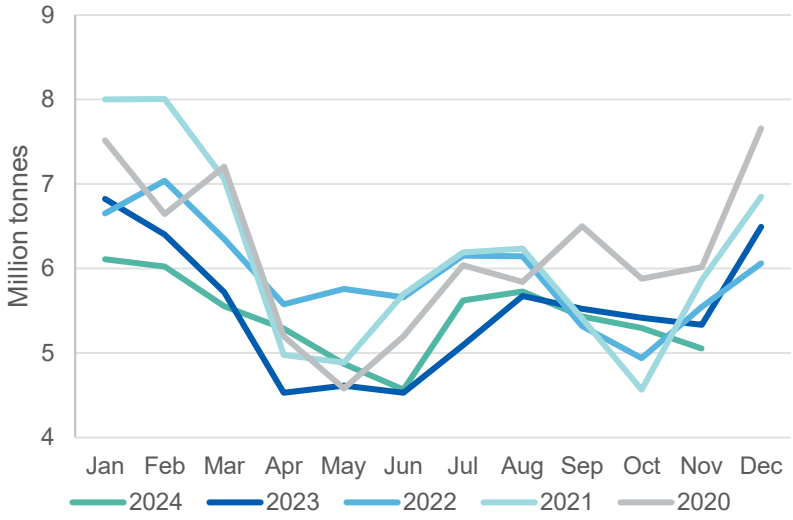
South Korean imports are likely near their peak, with small growth forecast in 2026 followed by general stability over the rest of the outlook period. Industrial power demand is still rising in South Korea, but nuclear power is forecast to account for most of the extra demand in the late 2020s.

Figure 6.3: China's monthly LNG imports, 2020–2024



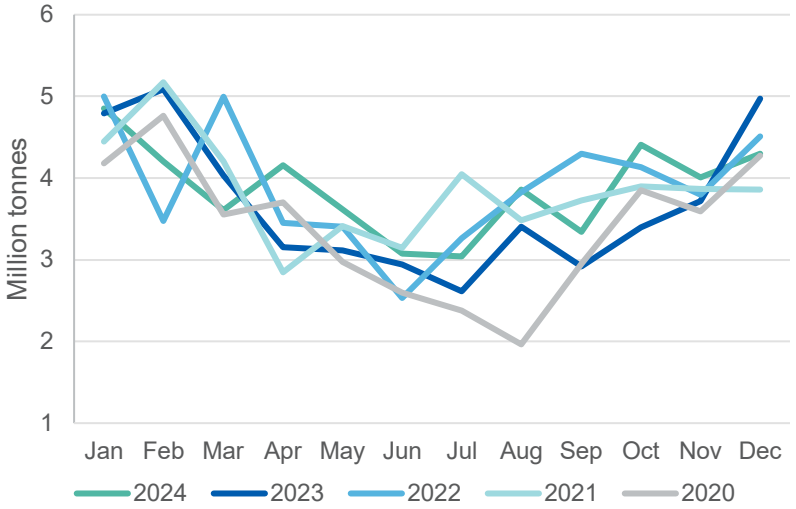
Source: McCloskey (2025)

Figure 6.4: Japan's monthly LNG imports, 2020–24



Source: McCloskey (2025)

Figure 6.5: South Korea's monthly LNG imports, 2020–24



Source: McCloskey (2025)

India's LNG imports set records in 2024 due to strong mid-year demand

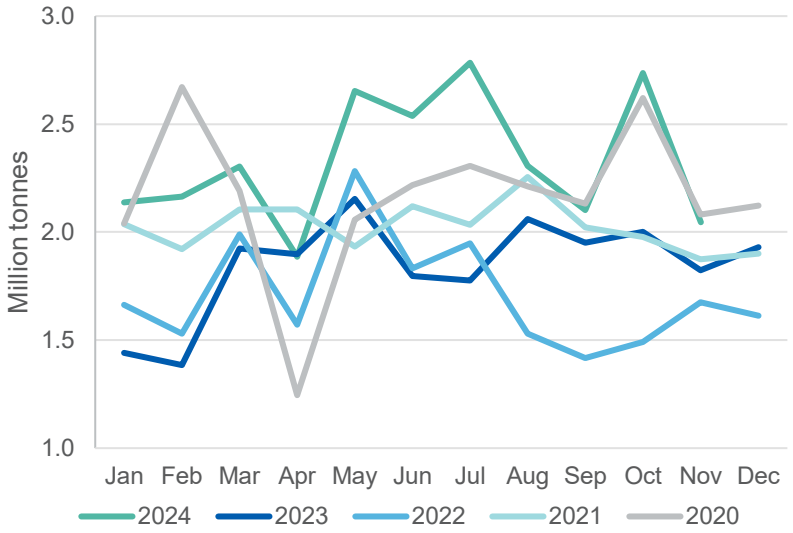
Indian LNG demand held up strongly through 2024 (Figure 6.6), reaching record monthly averages during the middle of the year when heatwaves pushed up gas demand for power generation. LNG is not normally a large proportion of India's electricity mix (accounting for less than 3% in most months) but pressure on the electricity grid is forcing greater use of dispatchable fuels despite the price growth of LNG in 2024. India's LNG imports increased by around one-quarter between 2023 and 2024.

Growth is expected to persist through the outlook period (albeit off a relatively low base) as easing prices enable some of India's price-sensitive industries to expand their LNG use.

LNG imports are rising elsewhere as power demand grows

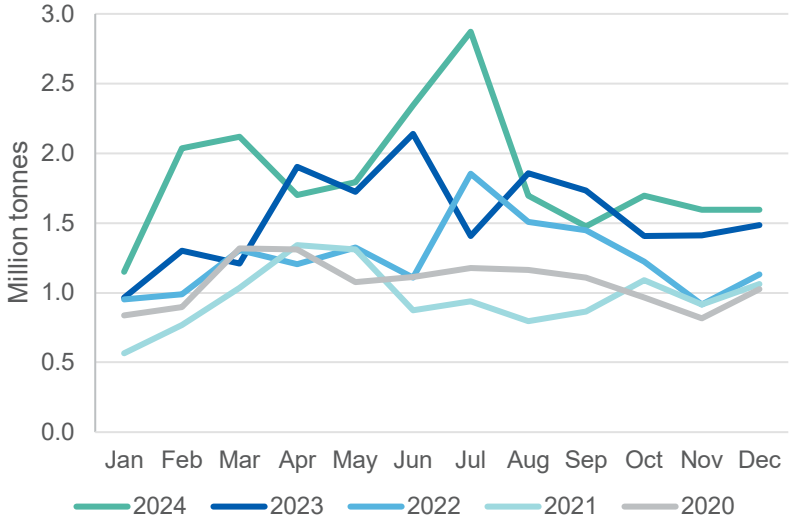
A surge in mid-2024 (Figure 6.7) resulted in record imports to ASEAN countries over the year. Imports to South-East Asia can be volatile and price sensitive at times, but recent high prices did not prevent growth in imports to Malaysia, Bangladesh, Singapore and Thailand in the second

Figure 6.6: India's monthly LNG imports, 2020–24



Source: McCloskey (2025)

Figure 6.7: Total monthly ASEAN LNG imports, 2020–24



Source: McCloskey (2025)

half of 2024. These countries are expected to undergo further strong growth in their LNG imports to 2030 and beyond.

Taiwan has recently scaled back its renewable targets, creating stronger growth potential for LNG imports over the next few years. AI and semiconductor manufacturing are also expected to grow in Taiwan over the next five years, increasing overall energy demand and potentially boosting LNG uptake further.

6.4 World exports

Global production growth slowed in 2024 — but a rebound is likely

Global LNG exports fell slightly short of expectations in 2024, with some US projects facing weather disruptions and delays. Producers in northern Africa have also faced shortages of feed gas. The cut-off of Russian pipeline gas to Europe in late 2024 will likely weigh on supply in the short-term.

Stronger output growth in the US and elsewhere should see overall LNG supply growth rebound from 2.5% growth in 2024 to 5% growth in 2025. Overall gas production (including non-liquified gas) is expected to grow more slowly, but supply growth is still expected to exceed demand, easing gas market conditions across the board.

Growth in US production is resuming as projects approach completion

US LNG exports are expected to increase substantially in 2025 as several large projects ramp up. The Plaquemines project, which loaded its first shipments on 26 December 2024, is set to become one of the largest projects in the US. The project initially includes 9 pairs of liquefaction trains (each pair adding around 1.25 mtpa of capacity), with a planned second phase adding a further 9 pairs.

Cheniere's Corpus Christi Stage 3 expansion produced its first output on 30 December 2024, making the last week of 2024 a significant one in the US LNG production cycle. The project will ultimately encompass seven trains with a total capacity of around 10 mtpa. The first train is expected to be fully operational by the end of the March quarter 2025, with two further trains due in late 2025 and all seven trains to be in operation by late 2026.

Beyond this, capacity should be further bolstered by the Golden Pass and Energia Costa Azul (ECA) projects, though these have faced delays. The Alaska Gasline Development Corporation has also announced an agreement with Glenfarne Energy Transition to deliver the Alaska LNG project, though the project remains provisional at present.

The US overtook Australia to become the top global LNG exporter in 2023. Growth slowed in 2024 but is expected to resume in 2025 and through the outlook period, keeping the US ahead of all other LNG producers. The US is expected to account for almost half of global growth in LNG export capacity over the next five years, with exports reaching around 150 Mtpa by 2030. Rising trade barriers may affect US LNG exports, though dynamics and impacts are not yet clear.

Exports from Qatar were flat in 2024, but long-term investment is strong

Qatar has a range of projects under development which are expected to lift its output from around 77 Mtpa in 2024 to 142 Mtpa by 2030. Most of this growth is expected in 2026 and 2027.

The most significant project is Qatar Energy's 32 Mtpa North-Field East expansion, which is expected to commence first production by late 2025 or early 2026. The project is very low cost in global terms, but large parts of its output remain uncontracted, suggesting initial output sales may be concentrated in spot markets.

The outlook for Qatar's LNG exports has been complicated by geopolitical conflicts and potential disruption of cargo flows through the Persian Gulf. However, Qatari investment projects continue to progress, suggesting investors do not currently perceive a serious long-term risk.

Russia faces a long-term decline in gas production and exports

The development of gas resources in Russia has faced a growing array of problems since the country's invasion of Ukraine in 2022. European trade sanctions have resulted in Gazprom, Russia's state-owned gas enterprise,

announcing a record loss of 1.076 trillion rubles (or US$13 billion) in 2024. Negotiations between Russian and Chinese stakeholders over two substantial proposed pipelines have failed to reach an agreement, hindering the development of trade links with China. Russia's sovereign wealth fund has been depleted by war spending, with the liquid part of the fund falling from around $US100 billion in early 2022 to $38 billion by early 2025. Historically high interest rates (of 21% in early 2025) have made it more difficult for firms to access capital in Russia.

Taken together, these developments sharply reduce the pool of public and private funding available for new investments in Russian LNG. Equipment sanctions have also stalled or slowed existing LNG projects, including at Arctic-2, where liquefaction and shipping have been halted by lack of access to turbines and icebreaking vessels. Novatek, which controls the project, recently sent 'force majeure' notices to two Chinese buyers.

No LNG-related constructions are expected to commence in Russia over the foreseeable future, and with profits and capital inflows falling away, Russian LNG exports face a negative outlook over the next five years.

Marginal growth is expected from other LNG exporters

Exports among smaller producers remain relatively flat, with modest production growth in Nigeria, Angola, Brunei, Indonesia, Mozambique, Democratic Republic of the Congo, and the United Arab Emirates offset in part by slight falls from Algeria, Malaysia, Oman, and Papua New Guinea.

Some ramp up in production is expected in early 2025. Floating liquefied natural gas (FLNG) projects have started shipping in Mexico and Congo, though their scale is relatively modest.

BP and Kosmos Energy, which jointly own more than 80% of the Greater Tortue Ahmeyim LNG project, announced first output in December 2024. The project is located offshore from Mauritania and Senegal. Completion of its first phase will add around 2.3 million tonnes of annual LNG capacity from 2025.

6.5 Prices

Short-term price pressure should soon be offset by new supply

LNG prices have edged up in recent months (Figure 6.8) as pauses in output growth met rising Asian LNG imports and strong seasonal demand in Europe. Prices are around US$15/MMbtu at the time of writing: far from their post-war peak (of US$54/MMbtu in August 2022) but well above the 2020 average of US$4.40/ MMbtu.

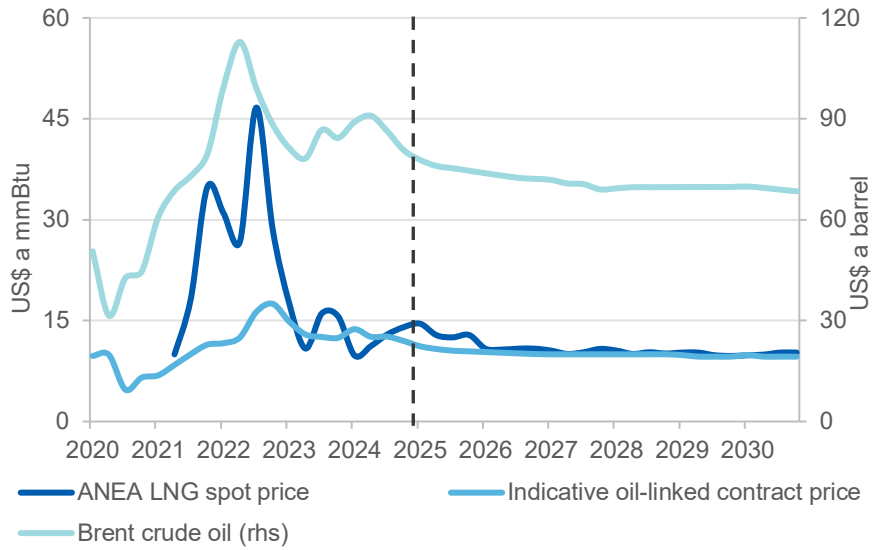
Large volumes of new supply should see prices ease to around US$9/MMbtu (in real terms) by 2030. Stronger US output — which is typically highly flexible — should also help to reduce price volatility and curb price premiums between the Atlantic and Pacific LNG markets.

Prices should stabilise around a lower baseline from 2030, when most new supply will be fully operating. Prices are not expected to decline below US$8/MMbtu in any sustained way: this would reduce the viability and capital flow to proposed (or under construction) US projects and result in supply deferrals that would bounce prices back up again. Price-sensitive buyers in India and South Asia may pivot towards LNG if prices drop significantly below this level.

Price risks over the next five years thus remain on the upside but are expected to pivot towards potential project delays and issues in the project pipeline. The slow easing in LNG prices anticipated over the outlook period will depend, to some degree, on a large wave of projects finishing on time and without significant disruptions or cost blowouts. Climate and weather events pose an unpredictable (but likely growing) risk to price stability. However, broad growth in LNG and gas supply should act as a mitigation assuming investment and construction proceed on schedule.

Downside risks to prices include a removal of sanctions on Russia. Russia previously supplied more than 150 billion cubic metres of pipeline gas to Europe annually, and a restoration of even part of this flow could drop gas prices below the level needed for some US investment projects to proceed. As noted, the resulting loss of supply would eventually push prices back up, but short-term declines could be large.

Figure 6.8: LNG spot and contract prices, 2020-2030



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

6.6 Australia

Australia's LNG exports are set to edge back as reserves start to deplete

Recent global developments present a mixed picture for Australian LNG exports. Rising trade tensions may encourage some Asian LNG importers to pivot away from US LNG. Increased US LNG imports are also possible as a strategy to reduce trade imbalances with the US.

US supply to Asian markets will likely grow after 2028, but not in a way that affects the viability of Australian producers. US output is cheaper in general terms, but being newer (or not yet operational) it faces much higher capital costs. This means that any substantial price drop will affect emerging US exporters (notably those with projects still under consideration or under construction) before it will affect existing Australian exporters. Any postponement or reduction in near-term US supply growth would likely prevent a collapse in prices to pre-COVID levels, and Australian production previously maintained profitability in that period.

Australian suppliers are also protected by long-term contracts. Most of these run until the 2030-2032 period. Some east coast contracts run until 2035. Australia's regional placement and strong record of delivery will enhance its capacity to negotiate future contracts. US supply is sited on the country's east coast and must navigate to Asia through the Panama Canal, where it can be choked or delayed. This may advantage other sellers (including Australia) which can offer greater security of supply.

Domestic developments in Australia remain somewhat mixed. Origin Energy's latest production guidance includes a small downward revision (of 2-3%, to 670–690 PJ in 2025), with the company citing unplanned maintenance and lower than expected benefits from recent well optimisations at Condabri, Orana and Talinga.

On 23 January 2025, Santos announced that its large Barossa Gas Project is now past 88% completion. The gas export pipeline is in place, and four wells are now complete or under development. The project remains on target to start producing in the September quarter 2025.

Santos has announced delays to its $3.2 billion Dorado oil and gas development, with potential production now pushed back to the late 2020s. However, the company has also announced that it is reviewing possibilities for a sizable new processing unit in Darwin. This unit would bolster LNG exports by processing gas from the Northern Territory's Beetaloo Sub-basin, though development in the basin itself would be a pre-requisite.

In mid-December 2024, the Western Australian government agreed to approve an extension to the life of the North West Shelf Karratha Gas Plant to 2070, subject to a range of conditions including a marine management plan and new operational measures to curb greenhouse gas emissions. The proposal is now being considered by the Commonwealth Minister for the Environment and Water, with a final decision required by 31 March 2025.

Inpex has announced that it will develop a third train at its Ichthys LNG onshore processing facility. This expansion is expected to support higher LNG exports from the site over the longer-term.

The Australian Energy Market Operator's *Gas Statement of Opportunities* for March 2025 suggests that 'Shortfall risks under peak conditions are forecast in southern Australia from 2028, later than forecast in the 2024 GSOO due to expected falls in residential, commercial and industrial consumption of gas, and the delayed retirement of Eraring Power Station'. Shortfall risks can be managed in various ways including through upgrades to storage and transportation.

On balance, Australian gas exports are expected to hold largely steady through the first half of the outlook period, with new supply from Woodside's Pluto expansion and Santos' Barossa Gas Project offsetting gradual declines from Woodside's North West Shelf Project. Export volumes are expected to decline late in the outlook period, to around 78 Mt by 2029–30 (Figure 6.9) due to ongoing depletion of gas reserves at the North-West Shelf.

Australian LNG export earnings are expected to fall from $72 billion in 2024–25 to $45 billion by 2029–30 (in real terms) (Figure 6.9). Australia's core long-term challenge remains the lack of significant new greenfield investments, though brownfield investment should sustain production in the medium term.

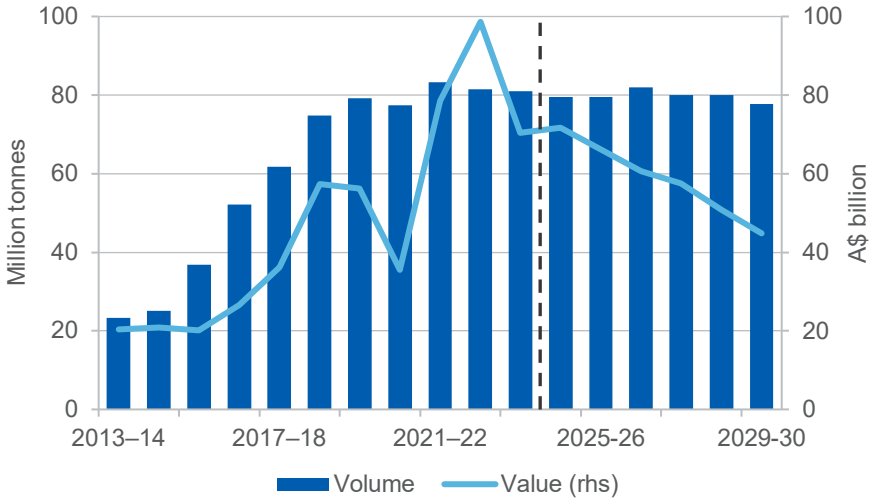
Exploration is rising from a long period of low spending

Onshore petroleum exploration rose from A$190 million in the September quarter to $285 million in the December quarter. Offshore exploration rose from A$125 million to A$178 million. The sudden lift, which is concentrated (onshore and offshore) in the Northern Territory, brings overall exploration spending to its highest level since December 2015. In annual terms, growth remains modest (Figure 6.10), but it appears that higher LNG prices may be motivating a provisional drive for new gas fields.

Revisions to the outlook

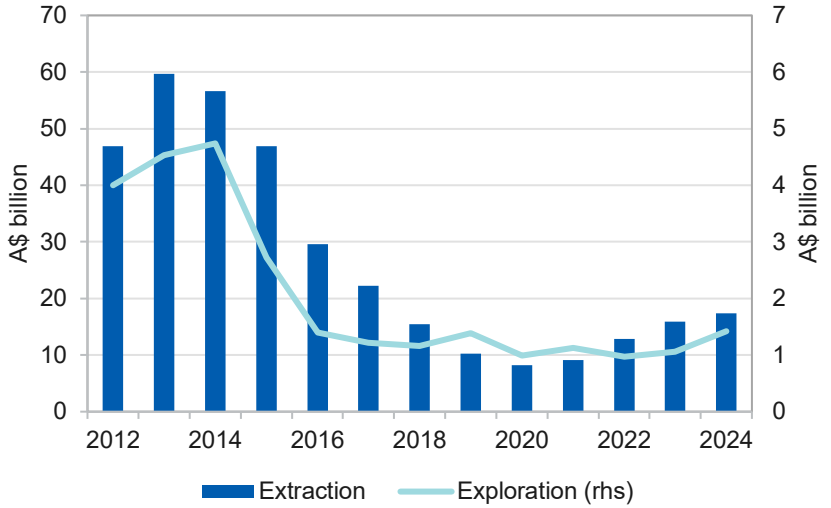
Supply disruptions and high prices have pushed up export forecasts. Earnings for 2024–25 have been revised up from $A64 billion in the December 2024 REQ to $72 billion; 2028-29 earnings have been revised up from $51 billion in the March 2024 REQ to $57 billion (nominal terms).

Figure 6.9: Australia's LNG exports by value and volume



Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025)

Figure 6.10: LNG investment in Australia



Source: ABS (2025) International Trade in Goods and Services, 5625.0

Table 6.1: Gas outlook

World	Unit	2024	2025 f	2026 f	2027 z	2028 z	2029 z	2030 z	CAGR r
JCCC oil price[a]									
– nominal	US$/bbl	84.0	70.4	68.2	77.4	80.5	81.1	81.1	-0.6
– real[i]	US$/bbl	85.7	70.4	66.8	74.3	75.7	74.6	73.1	-2.6
Asian LNG spot price									
– nominal	US$/MMBtu	11.9	13.2	10.8	10.4	10.2	10.0	10.1	-2.8
– real[h,i]	US$/MMBtu	12.2	13.2	10.6	10.0	9.6	9.2	9.1	-4.8
LNG trade	Mt[e]	425.5	470.3	520.0	565.3	578.3	596.3	613.2	6.3
Gas production	Bcm	4,132	4,234	4,342	4,395	4,451	4,500	4,553	1.6
Gas consumption	Bcm	4,132	4,223	4,301	4,357	4,405	4,446	4,498	1.4
Australia	**Unit**	**2023–24**	**2024–25 f**	**2025–26 f**	**2026–27 z**	**2027–28 z**	**2028–29 z**	**2029–30 z**	**CAGR r**
Production[b]	Bcm	164	155	155	161	158	156	157	-0.7
– Eastern market	Bcm	58	54	52	52	51	51	51	-2.0
– Western market	Bcm	85	86	85	85	85	82	80	-1.0
– Northern market[d]	Bcm	17	16	19	22	22	22	22	4.4
LNG export volume	Mt[e]	81	80	80	82	80	80	78	-0.7
– nominal value	A$m	68,588	71,680	68,328	64,419	62,587	56,722	51,202	-4.8
– real value[f]	A$m	70,316	71,680	66,114	60,627	57,466	50,811	44,748	-7.3
LNG export unit value[h]									
– nominal value	A$/GJ	16.1	17.1	16.3	14.9	14.8	13.4	12.5	-4.1
– real value[f]	A$/GJ	16.5	17.1	15.7	14.0	13.6	12.0	10.9	-6.6
– nominal value	US$/MMBtu	11.1	11.6	11.1	10.7	11.1	10.6	9.9	-2.0
– real value[i]	US$/MMBtu	11.4	11.6	10.7	10.1	10.2	9.5	8.6	-4.5

Notes: a JCCC stands for Japan Customs-Cleared Crude; b Production includes both sales gas and gas used in the production process (i.e., plant use) and ethane; c Gas production from Bayu-Undan located in the jurisdiction of Timor-Leste is not included in Australian production; d Browse basin production associated with the Ichthys project is classified as Northern market; e 1 Mt of LNG is equivalent to approximately 1.36 bcm of gas; f In current year Australian dollars; g Forecast; h 1 MMBtu is equivalent to 1.055 GJ; i In current year US dollars.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025); Company reports; Nexant (2025) World Gas Model

Oil

Australia's oil sector

$12.9 billion

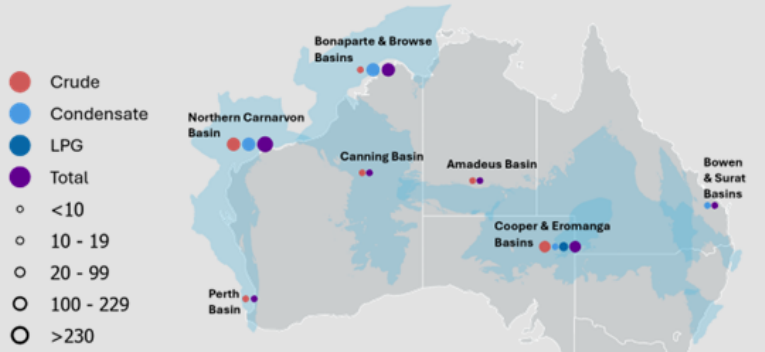
of crude and condensate exported in 2023–24

41% by value

of crude and condensate exported to Singapore and South Korea

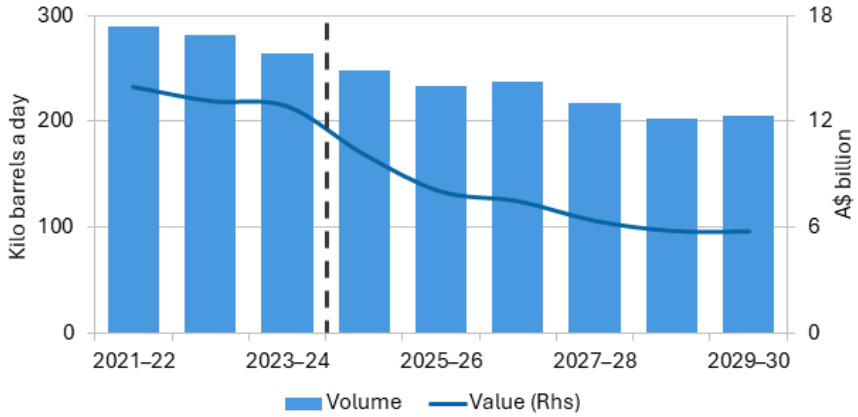
Around 2/3

crude and condensate produced at Carnarvon Bason offshore WA



Crude oil, Condensate and LPG production, PJ

Australian oil exports

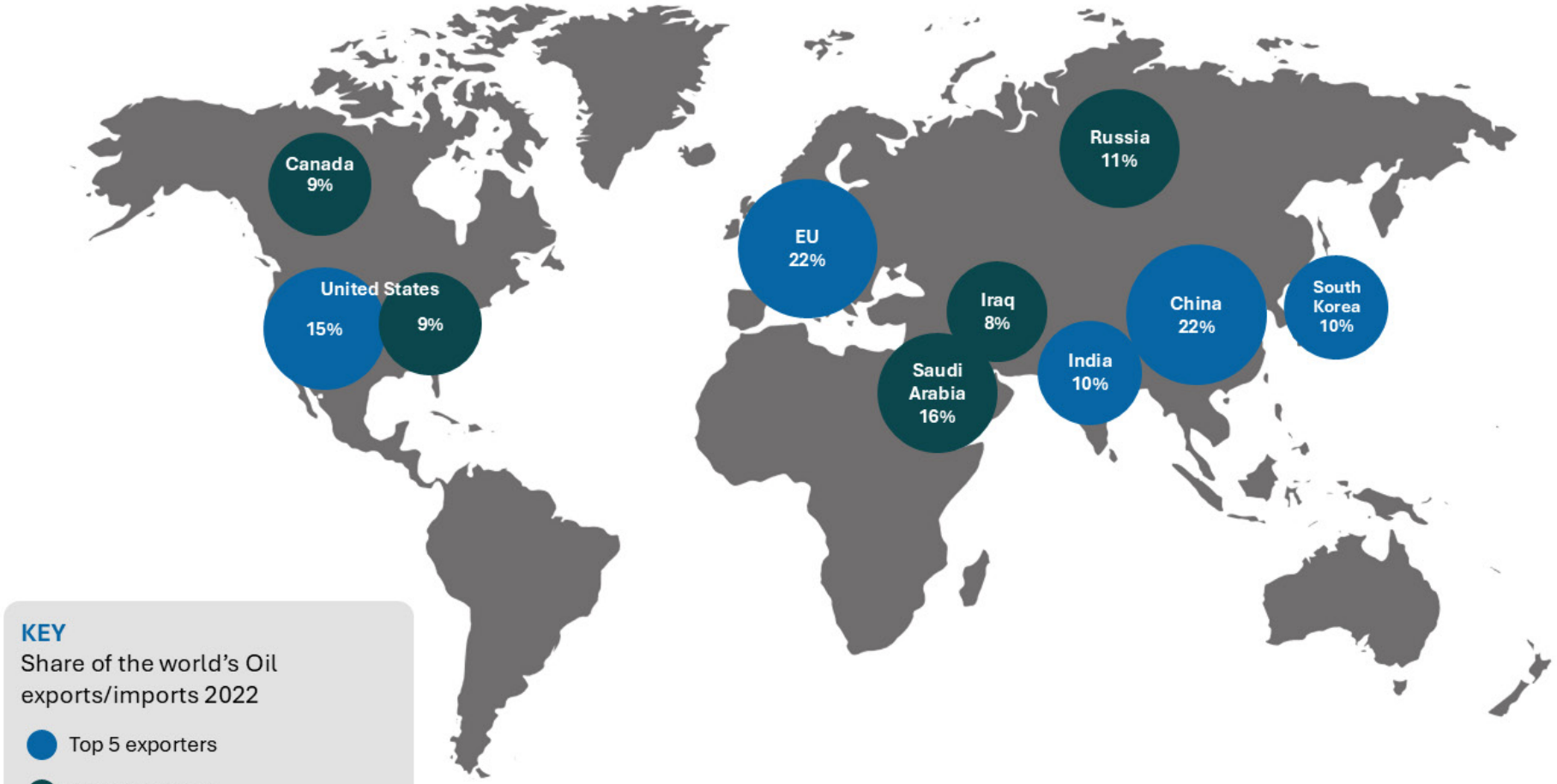


Outlook

- Oil prices will weaken with greater supply from the Americas
- Earnings to fall from 2024-25
- Australian Production volumes to ease as offshore fields deplete
- Petroleum exploration expenditure remains above the 2023 average

Source: GA, DISR, OCE DCCEEW

Oil Trade Map



Source: IEA

7.1 Summary

- Brent oil prices have been highly volatile through 2024 and March quarter 2025 following rising and falling geopolitical tensions. Prices stayed in the US$70-90 a barrel range and are projected to fall to US$57 a barrel in 2030 in real terms.
- Global oil supply is projected to reach 107 mb/d by 2030, with strong supply growth expected in the Americas.
- Australian exports are projected to fall from $12.9 billion in 2023–24 to $5.5 billion in 2029–30 in real terms, as fields deplete and prices fall.

7.2 World Consumption

Global oil demand to plateau as ex-OECD gains offset OECD falls

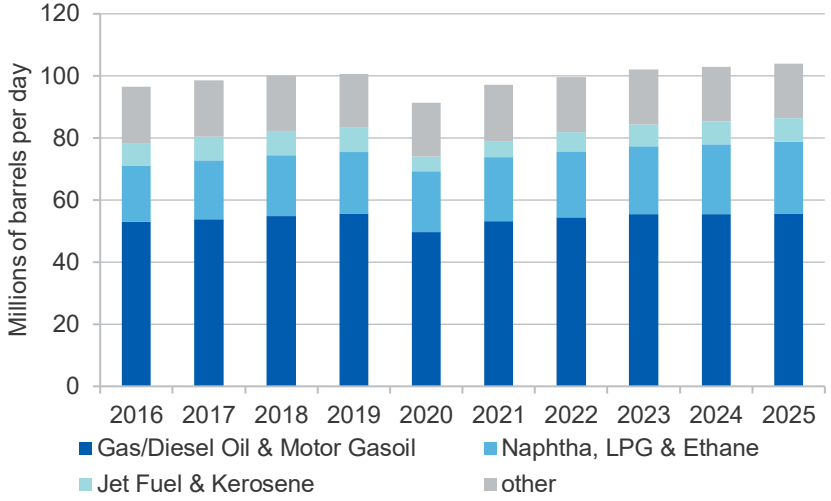
Globally, the transport sector leads oil consumption, followed by industrial applications (see Figure 7.1). Petrol and diesel are primarily used for road transport, and account for most of the global oil consumption. Jet fuel and kerosene — primarily used for air travel — makes up a smaller proportion of usage. LPG ethane and naphtha are primarily used in industrial applications, including making polymers.

Oil consumption is projected to rise by 1% (CAGR) between 2025 and 2030, plateauing over the final few years and reaching 106 mb/d. Global oil consumption is expected to be led by a rise in the demand for LPG, naphtha and kerosene, with LPG and ethane accounting for most of the increase in product demand.

OECD demand to fall as EVs and efficiency gains reduce road fuel usage

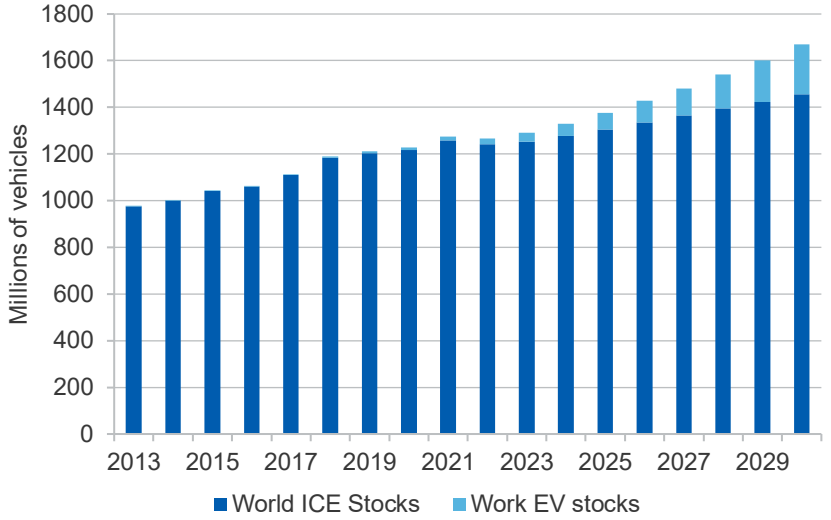
Oil demand is falling in the OECD, in line with falls in road transport demand. Increased adoption of electric vehicles (EVs) and efficiency gains in internal combustion engines (ICE) vehicles have contributed to falling demand for diesel and petrol (Figure 7.2). Falling demand for road transport fuel is slightly offset by an increase in aviation fuel usage. Bloomberg New Energy Finance (BNEF) reports that in 2024 passenger flight miles exceeded the pre COVID-19 baseline and are expected to continue rising.

Figure 7.1: Global oil consumption by refined petroleum product



Source: International Energy Agency (2025)

Figure 7.2: Global vehicle stocks



Source: Department of Industry Science and Resources (2025), International Energy Agency (2025), Wood Mackenzie (2025)

Due to efficiency gains in aviation, aviation fuel usage is only projected to rise above 2019 levels in 2025. BNEF projects that aviation fuel usage will grow at 3% per annum between 2024 and 2030.

Chinese demand to plateau as road transport fuel demand growth stalls

In China, a rising portion of EVs, improving internal combustion engine efficiency, and the switching of the fuel source of heavy vehicles to gas, is projected to result in a plateauing and then falling demand for transport fuels. The IEA claims that Chinese fuel demand saw no growth in 2024, as a result of structural changes to transport. Further, weakness in the construction sector has led to an additional slowdown in diesel usage. According to the IEA, in China, aviation fuel and petrochemical feedstock demand are expected to grow at 5.2% and 3.9% per annum, respectively.

India and other developing economies are one of the few areas of oil demand growth

One of the areas where oil demand growth is forecast to remain strong is in ex-OECD countries. GDP growth remains a key driver of oil demand in these economies. As countries grow and people become wealthier, they can purchase more vehicles, travel further and begin to utilise air travel, all of which lifts oil consumption. Industrialisation also increases oil consumption, as oil products are demanded for both industrial processes and the transportation of industrial goods. In OECD economies, GDP growth and oil demand growth have decoupled, and GDP growth is now a less important driver of oil demand.

According to the IMF 2024 World Economic Outlook, developing economies are expected to grow at rates around 3.9% per annum to 2029. India is expected to experience strong GDP growth — at around 7.5% — translating to additional demand for oil. One factor that has bolstered India's oil consumption is the availability of relatively cheap Russian oil which has been trading at a discount due to the sanctions placed on Russian energy exports. Additionally, India is expanding its refining capability by almost 20%. Indian refineries are currently running at or close to 100% capacity. Increasing refining capacity could see imports of crude rise commensurately.

In February 2025, the US and India announced a potential deal that would increase petroleum exports to India. According to S&P, India generally imports around 200-400 kb/d from the US with a 5-year peak of 635 kb/d. There may be limited scope for India to import additional US oil, due to the comparatively light grades of US oil. However, this is also dependent on the new refining capacity that will be built.

7.3 World Production

Ex-OPEC supply to increase, led by strong supply growth in the Americas

Global production is expected to grow from 103 mb/d in 2024 to 107 mb/d in 2025, primarily led by strong supply growth in the Americas. Supply growth from the US has been the primary driver of increased supply from the Americas in 2023 and 2024. Growth from the US is set to slow but remain positive between 2025 and 2030, with supply setting new records every year out to 2030. Slowing growth is due to declining margins for light shale wellheads.

In Latin America, the IEA forecasts supply will grow by 1.7 mb/d by 2030, driven primarily by Guyana and Brazil. Most of the production gain is expected in Brazil, accounting for approximately 45% of projected new production. However, this rise is contingent on new projects achieving final investment decision and commencing production within the outlook period. Guyana produced its first barrels in 2019 and is projected to reach its peak output in 2028at 1.3 mb/d compared to 2024 production of 0.4 mb/d.

OPEC+ signals it is starting to unwind cuts in 2025, bolstering supply

There are currently 5.9 mb/d of output cuts by OPEC+ (Organization of Petroleum Exporting Countries plus other petroleum producing countries) in place. The first set of cuts (3.7 mb/d) were initially due to expire at the end of 2024. At the June 2024 OPEC+ meeting, the 3.7 mb/d of cuts were extended until the end of 2025. The second set of cuts (of 2.2 mb/d) were voluntary, and were initially scheduled to expire in October 2024. At the time of writing, OPEC+ has announced the gradual unwinding of the voluntary 2.2 mb/d cuts, by 138 kb/d starting in April 2025.

The market is projected to remain in surplus between 2025 and 2030, suppressing prices. Lower prices have made it increasingly difficult for OPEC to unwind their cuts without placing further downward pressure on prices. However, maintaining cuts or unwinding them too slowly may result in OPEC losing market share as higher prices may incentivize new supply to come online outside of the bloc.

Conflict and sanctions could suppress global supply

The war between Russia and Ukraine poses a risk to global oil supply. Damage to oil facilities, both refined and crude has the potential to disrupt overall flows. At the time of writing, Russian refineries have primarily been impacted. However, in February 2025, a pumping station along the Caspian crude oil pipeline was hit by a drone strike. The pipeline transports nearly 40% of Kazakstani crude and 1% of global supply.

In February 2025, the US announced their intention to withdraw licences that allowed Chevron to operate in Venezuela despite sanctions. The licences enabled Chevron to conduct operations as part of joint products with PDVSA — Venezuela's state-owned oil company — allowing the country to export some of its oil. Venezuela once exported nearly 2.8 mb/d, however, volumes fell to 0.6 mb/d likely due to sanctions. Volumes recovered to over 1 mb/d following the issuance of the licence to Chevron in 2022 that offered some relief to the sanctions. Removal of the Chevron licences may curtail Venezuela's ability to maintain its higher level of exports.

7.4 Prices

Rising OPEC and ex-OPEC output to put downward pressure on prices

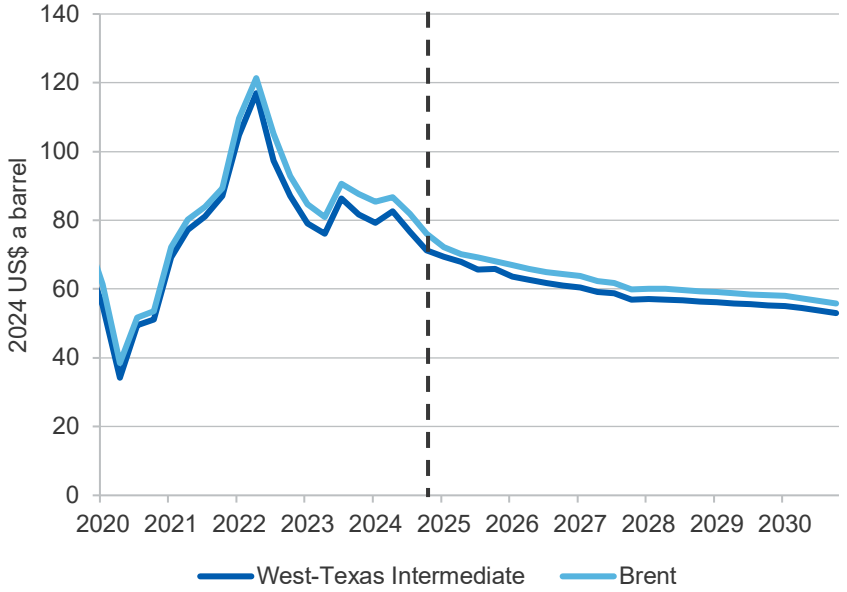
Prices are expected to fall from US$82 per barrel in 2024 to US$57 in 2030 in real terms (Figure 7.3). Falling prices will be the result of a surplus of oil supply, as new supply comes online and demand plateaus. Increased OPEC+ production will bolster global supply.

Geopolitical risks and rising trade barriers continue to move prices

Price volatility in 2024 and at the start of 2025 has primarily been due to heightened geopolitical risks. Initially, these risks centred around the Red Sea and the Persian Gulf where prices followed the perceived likelihood of an escalation in regional tensions. While prices are forecast to continue to fall, there remain some risks to the forecast in the form of geopolitical events that may disrupt oil production or limit trade flows.

In addition to geopolitical conflict risk, rising trade tensions present a downside risk to oil prices. Increased trade barriers and retaliation to those trade barriers may result in slower global growth, which in turn may temper global oil demand putting downward pressure on prices.

Figure 7.3: Benchmark oil prices (real)



Source: Bloomberg (2025), Department of Industry Science and Resources (2025)

7.5 Australia

Australian export values to fall as prices and volumes fall

Australian crude and condensate exports are projected to fall by 13% every year to 2030. The fall reflects declining prices and lower volumes of crude and condensate production, notably in the Northern Carnarvon Basin, which is approaching end of life. The Northern Carnarvon Basin includes several substantial fields including the North West Shelf and the Greater Enfield projects (Figure 7.4).

Falling production from existing fields may be slightly offset by the Dorado development. However, in January 2025, the project was delayed, and its future is currently uncertain. If the project proceeds, it is expected to produce 90 kb/d of oil. Overall exports are projected to fall from 264 kb/d in 2024–25 to 206 kb/d in 2029–30.

Exploration

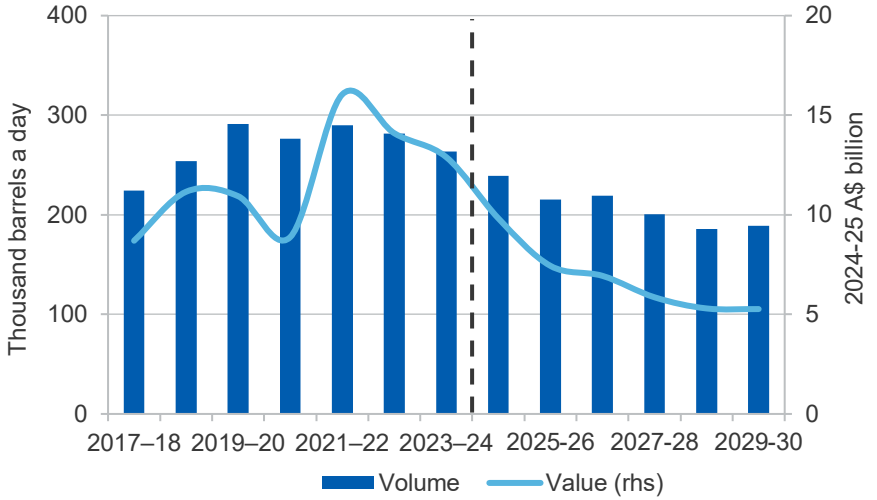
Australia's petroleum exploration expenditure in the December quarter 2024 was $462 million due to an uptick in both onshore and offshore exploration (Figure 7.5). Exploration in 2024 was $1.4 billion up on the $1.0 billion of 2023, but still below the highs of 2010-2015 (Figure 7.5).

Revisions to forecasts

Since the December 2024 *Resources and Energy Quarterly*, the forecasts for Australia's crude and condensate export earnings have been revised down by $0.2 billion (to $10.1 billion) in 2024–25 and $1.1 billion (to $7.6 billion) in 2025–26 in nominal terms due to revised down prices.

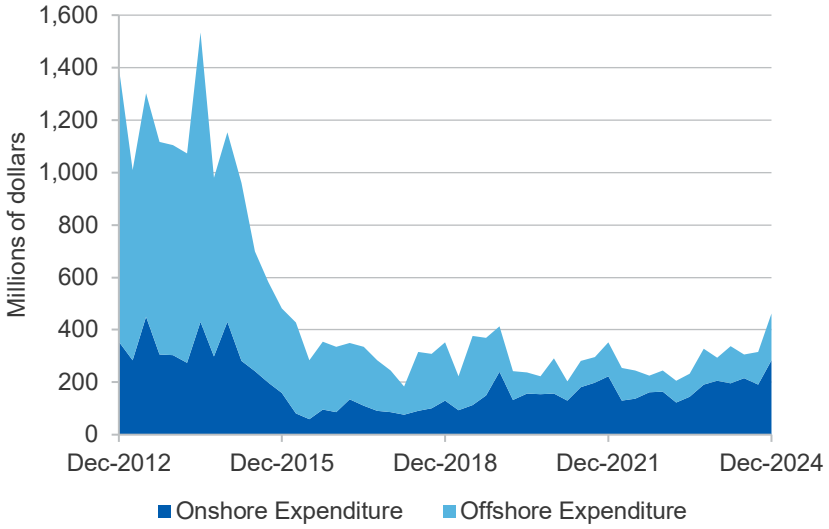
Since the March 2024 *Resources and Energy Quarterly*, Australia's crude and condensate export values in 2028–29 have been revised down by $1.5 billion (to $6.6 billion) in nominal terms due to revised down prices.

Figure 7.4: Australia's crude and condensate exports



Source Department of Climate Change, Energy, Environment and Water (2025), ABS (2025), Department of Industry Science and Resources (2025)

Figure 7.5: Australian onshore and offshore exploration expenditure



Source: Australian Bureau of Statistics (2025)

Table 7.1: Oil Outlook

World	Unit	2024	2025[f]	2026[f]	2027[f]	2028[z]	2029[z]	2030[z]	CAGR[r]
Production	mb/d	103	105	106	106	107	107	107	0.7
Consumption	mb/d	103	104	106	106	106	106	106	0.5
WTI crude oil price									
– nominal	US$/bbl	76	67	64	61	60	61	60	-3.8
– real[b]	US$/bbl	77	67	62	59	57	56	54	-5.8
Brent crude oil price									
– nominal	US$/bbl	81	70	67	65	64	64	63	-4.0
– real[b]	US$/bbl	82	70	66	62	60	59	57	-6.0
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27z**	**2027–28z**	**2028–29z**	**2029–30z**	**CAGR [r]**
Crude oil and condensate									
Production	kb/d	275	254	240	243	227	214	217	-3.9
Export volume	kb/d	264	248	233	237	218	203	206	-4.0
– nominal value	A$m	12,573	10,148	8,298	7,945	6,927	6,462	6,574	-10.2
– real value[h]	A$m	12,890	10,148	8,029	7,478	6,360	5,789	5,745	-12.6
Imports[a]	kb/d	169	180	199	199	199	199	199	2.8
LPG Production[c]	kb/d	95	94	100	104	102	101	101	1.2
Refined products									
Refinery production	kb/d	256	246	248	248	248	248	248	-0.5
Exports[d]	kb/d	7	10	8	8	7	7	6	-0.8
Imports	kb/d	894	929	940	946	951	957	963	1.3
Consumption[e]	kb/d	1,061	1,087	1,089	1,094	1,100	1,105	1,111	0.8

Notes: **d** Primary products sold as LPG; **e** Excludes LPG; **f** Forecast; **g** Domestic sales of marketable products, including imports; **h** In 2024-25 financial year Australian dollars; **r** Compound annual growth rate (per cent), for the period from 2023 to 2029 or for the equivalent financial years.
Source: ABS (2024) International Trade in Goods and Services, Australia, Cat. No. 5368.0; International Energy Agency (2026); US Energy Information Administration (2025); Department of Industry, Science and Resources (2025); Department of Climate Change, Energy and Environment (2025)

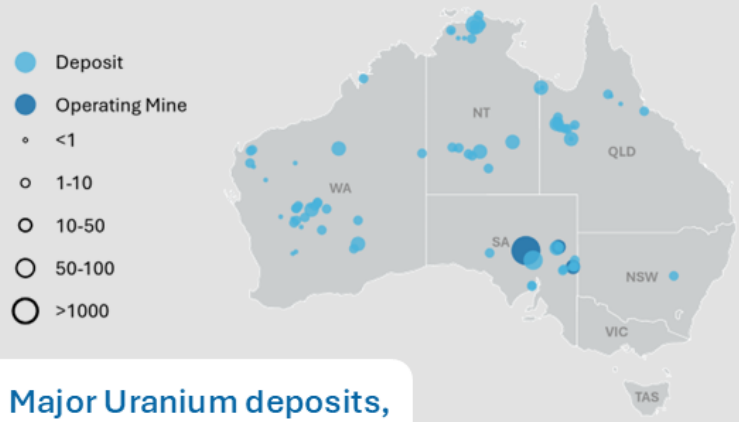
Uranium

Australia's uranium sector

World's no.1
for uranium resources

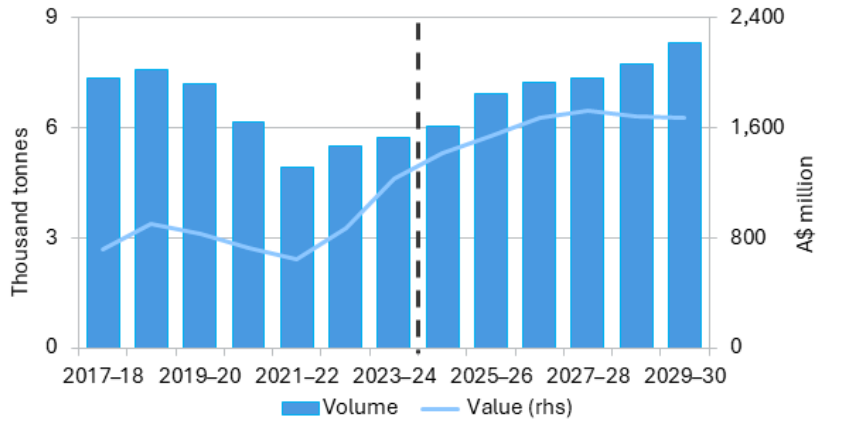
World's 4th
largest producer of uranium

$1,231 million
value of exports 2023–24



Major Uranium deposits, thousand tonnes

Australian uranium exports



Outlook

- Uranium prices have moderated, and growth is expected
- Higher prices and volumes expected from growing demand
- The newly reopened Honeymoon mine is ramping up production
- Exploration spending is rising solidly from low points in 2020

Source: GA, DISR, OCE

8.1 Summary

- Uranium prices are expected to rise from US$87 a pound in 2024 to US$93 a pound in 2030 (in real terms).
- Rising demand for nuclear power, driven by net zero ambitions and the need for base load power for data centres, is projected to increase uranium consumption from 95 kilotonnes (kt) in 2024 to 105 kt in 2030.
- Australia's export volumes are projected to increase from 6kt to 8.3kt by 2029–30 as the Honeymoon mine reaches full production and other projects are brought online.

8.2 World Consumption

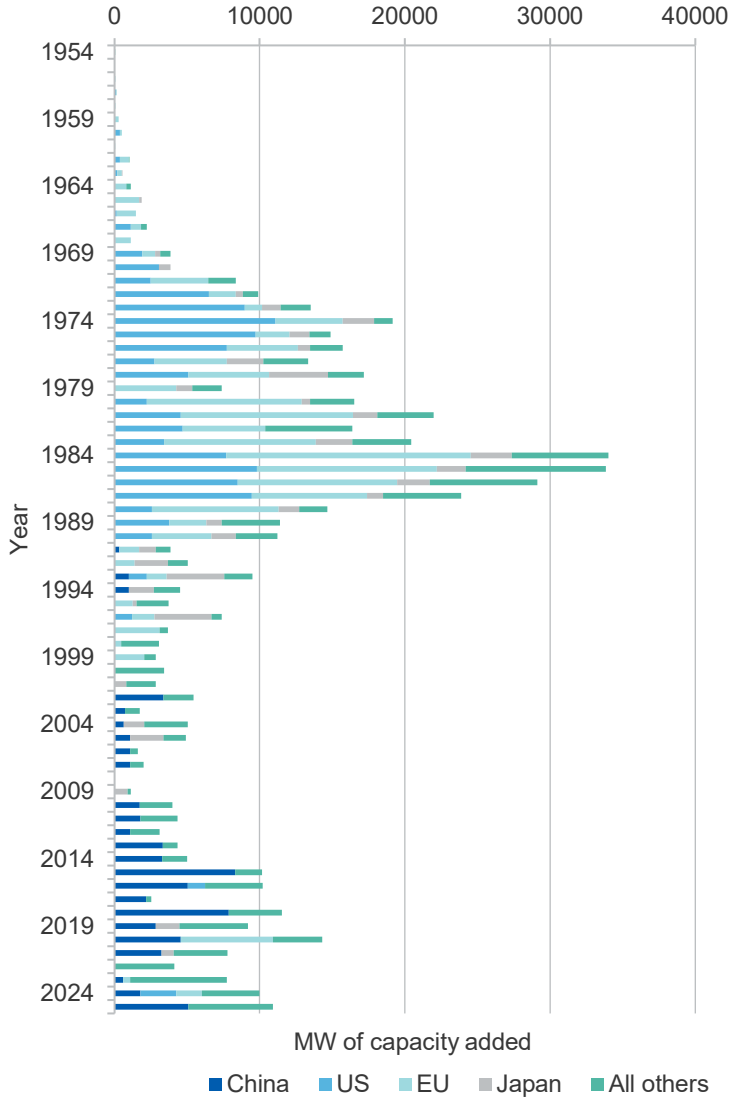
Global uranium demand rises led by China and India

Uranium is primarily used to generate electricity in nuclear reactors. Reactor construction rates have risen significantly over the last decade (Figure 8.1). Reactors consume relatively small, steady quantities of uranium, as a portion of their fuel load is replaced every year. New reactors have much higher initial demand as they need to be supplied with a full fuel load before they commence commercial operation. The pace of reactor construction is thus an important driver of uranium demand.

Global demand for uranium is expected to increase from 95 kt in 2024 to 105 kt in 2025, as a number of countries expand their nuclear generation capacity (Figure 8.2). Of the 63 reactors currently under construction around the world, 28 are in China and 7 are in India. China and India are among relatively few countries able to build reactors independently without importing capability from other countries. As part of its 2025 Budget, the Indian government announced plans to expand its nuclear generation capacity to 100GW by 2047 (a sizeable increase from current levels of 8 GW).

Other notable countries expanding their nuclear fleets include Türkiye — which is currently constructing 4 VVER reactors (a Russian design) — and Egypt which has 3 VVER reactors under construction.

Figure 8.1: Megawatts of nuclear energy generation capacity added, yearly



Source: International Atomic energy Agency (2025), World Nuclear Association (2025), Department of Industry, Science and Resources (2025)

Demand for data centre power driving nuclear energy demand globally

One of the emerging use cases for nuclear power, and one of the biggest drivers of electricity usage according to the IEA, is to provide energy for data centres. Data centres have relatively high capital costs and aim to be always on and close to capacity, with flat load profiles. Nuclear reactors are also extremely capital intensive and therefore similarly aim for high utilisation and low downtime, making the technologies suited for one another. However, recent developments in AI could result in large energy efficiencies, tempering growth in AI energy demand.

The IEA reports that there are now plans to build 25 GW of Small Modular Reactor (SMR) capacity to meet data centre demand. Data centres are also driving restarts and the building of traditional reactors, an example being the Three Mile Island unit 1 restart to power a Microsoft data centre.

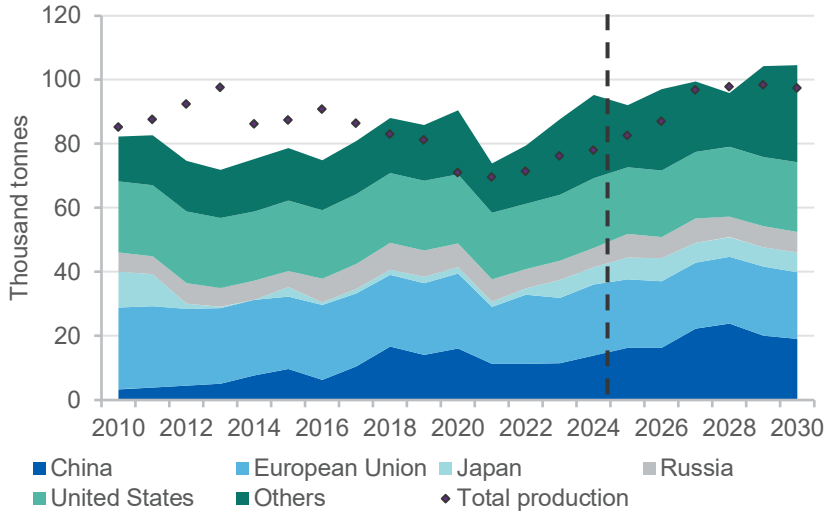
Reactor restarts/extensions to meet rising low-emissions power demand

The IEA estimates that 15% of reactors have had their operational life extended in the last 5 years as electricity demand has exceeded forecasts and there is a growing desire for demand to be met by low emissions technology. Life extensions have also been granted to reactors planned to restart in Japan, some of which are still going through their reconnection process. Japanese reactors were shut down after the Fukushima incident.

SMRs may rapidly increase uranium demand

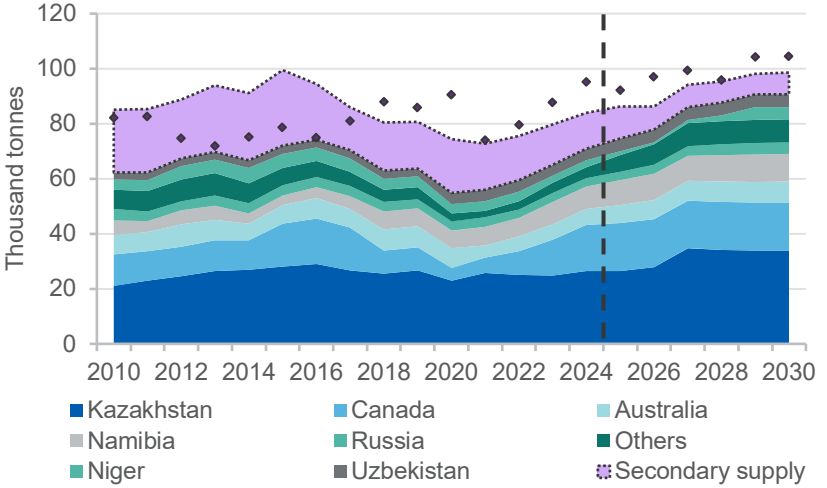
SMRs are a new style of reactor — and as yet commercially unproven — which could have a large impact on uranium markets. Traditional reactors are between 700-1200 MWh, whereas SMRs are typically between 100-300 MWh. SMR technology could have applications in servicing smaller use cases, including discrete data centres and rural communities. Some of the possible advantages of SMRs is that they could be mass produced off site, avoiding long and complicated construction onsite. SMRs also do not require as much of land or capital resources as a traditional reactor. SMRs could also be built much faster than traditional reactors, allowing better flexibility in rollout locations where local specialised labour for onsite speciality expertise may not be available.

Figure 8.2: Global Uranium Demand



Source: Department of Industry, Science and Resources (2025), World Nuclear Association (2025), International Atomic Energy Agency (2024)

Figure 8.3: Global Uranium Supply



Source: International Atomic Energy Agency (2025), Ux Consulting (2024), Department of Industry, Science and Resources (2025)

The world's first commercial SMR is due to commence commercial generation in China in 2026 and will have taken 5 years to construct. This is below the median reactor construction time for reactors completed in China between 2021 and 2023, despite the reactor being the first of its kind. Additionally, the Indian government in its 2025 Budget announced federal funds for initiatives to develop 5 SMRs of Indian design and construction by 2033. If SMR technology is found to be commercially viable they could be rolled out quite rapidly. The rapid roll out could increase uranium demand towards the end of the outlook period, as utilities buy up uranium to perform initial fuel loads.

8.3 World production

New mines in Morocco and Finland to open to meet reactor requirements

Uranium supply is projected to rise steadily as existing mines ramp up production and new mines are brought online. Total supply is projected to reach 97 kt in 2030, up from 78 kt in 2024.

New mines are opening around the world, in part in response to rising uranium prices. These include the Uranext mine in Morocco, which is due to begin production in 2026. The Sotkamo mine in Finland began commercial production in 2024 and is expected to ramp up through 2025 and 2026. The mine produces uranium as a byproduct of nickel and zinc extraction and is the only uranium producing mine in the European Union.

Two new mines in Kazakhstan — the world's largest uranium producer — are also ramping up to full production. Zahlpak and Budenvskoye 6/7 should extract over 4 kt per year once the ramp-up is complete.

Secondary supply to fall as excess enrichment capacity falls

The secondary supply of uranium (which encompasses enricher sales, Mox, RepU and government stockpile releases) is expected to fall steadily between 2024 and 2030. The fall will be largely due to declining enricher sales. As the demand for enriched uranium lifts — due to rising reactor usage — the amount of spare capacity that enrichers have for secondary production activities is expected to fall, reducing secondary supplies

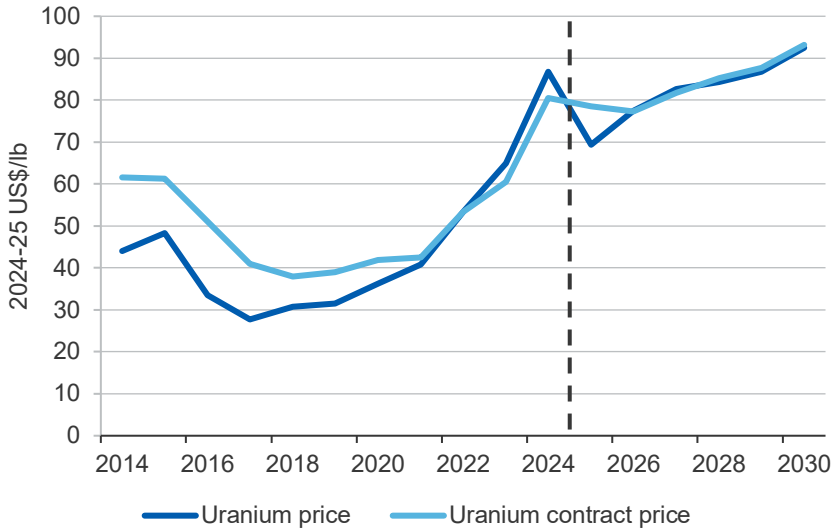
8.4 Prices

Uranium prices to rise in the long term as reactor builds outpace supply

In 2024, prices rose sharply following a downward adjustment to production guidance by Kazatomprom released in January. This guidance pushed prices above US$100 per pound. Other supply disruptions (notably in Niger) also kept upward pressure on prices, with recent stability reached at around US$65–70 per pound.

Prices are forecast to rise to US$93 per pound by 2030 in real terms from an average of US$79 per pound in 2025, with supply barely meeting, or even falling behind, demand across all years of the outlook period (Figure 8.4).

Figure 8.4: Uranium price real terms



Source: Cameco Corporation (2025). Department of Industry, Science and Resource (2025)

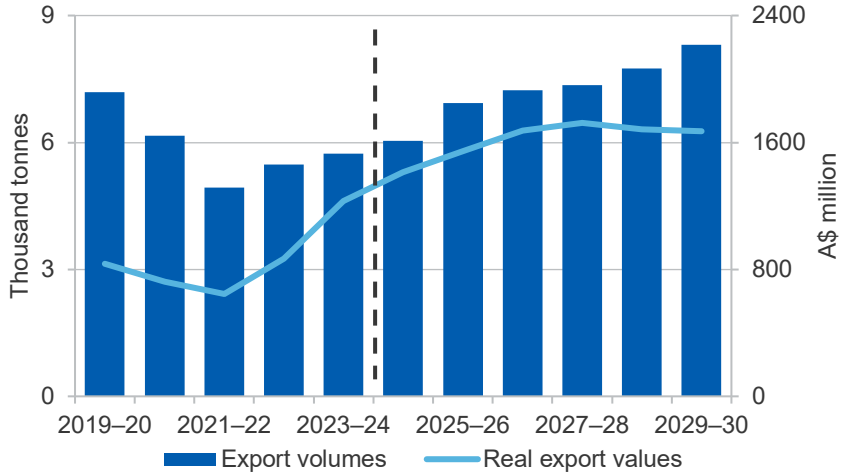
8.5 Australia

Australian export volumes are projected to rise as production increases

Australian production rose in 2024 following the reopening of the Honeymoon mine in South Australia. The addition of Honeymoon is expected to boost export values to $1.4 billion in 2024–25.

In addition to the three currently operating mines, Deep Yellow Limited's Mulga Rock is currently undertaking a revised definitive feasibility study. If the company proceeds with the project, it is expected to open in 2028 and eventually ramp up to a capacity of 1.5 kt, which would bring Australia's total export volumes to 8.3 kt (Figure 8.5) and values to $1.8 bn. The opening of Mulga rock will slightly increase production towards the end of the of the 2020s.

Figure 8.5: Australian export values and volumes



Source: Department of Industry, Science and Resources (2025)

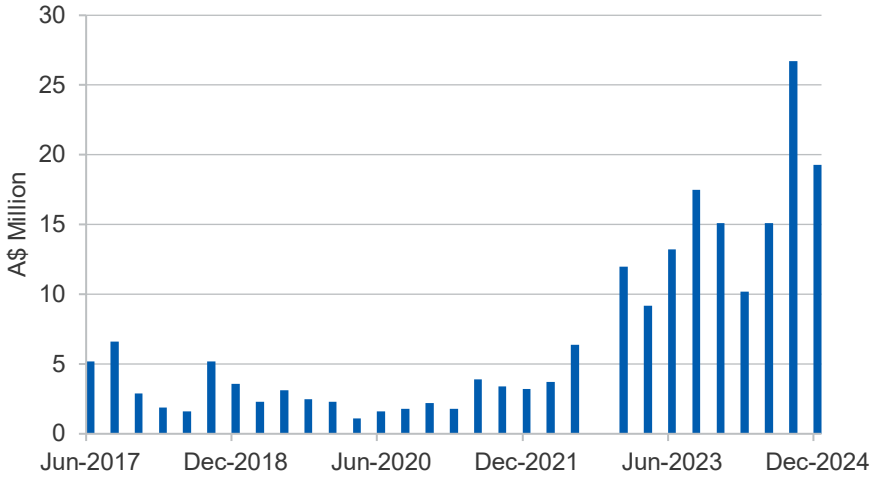
While export volumes and prices (in real US dollars) are projected to rise, export values are projected to rise then fall slightly in real Australian dollar terms (see the *Macroeconomic Outlook* chapter for further details on currency and inflation assumptions).

This fall can mostly be attributed to a strengthening of the Australian dollar against the US dollar, which uranium prices are typically denominated in.

Australian exploration rises as prices incentivise exploration activities

Uranium exploration expenditure in Australia has seen an uptick in the last two years, rising to a peak of $27 million in the September quarter 2024 (Figure 8.6). Prices are the primary driver of exploration, and the increased exploration is likely due to the recent above historical prices incentivising exploration activities.

Figure 8.6: Uranium exploration expenditure, quarterly



Note: Data has been made confidential by the ABS for some selected months and is presently unavailable.
Source: Australian Bureau of Statistics (2025)

Revisions to the outlook

Since the December 2024 *Resources and Energy Quarterly,* export values have been revised up by $50 million to $1,414 in 2024–25 and down by $80 million to $1,596 million in 2025–26 in nominal terms. Since the March 2024 *Resources and Energy Quarterly,* nominal terms export values in 2028–29 have been revised down by $300 million to $1,900 million as prices have been revised downward.

Table 8.1: Uranium outlook

World	Units	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Primary Production	kt	69.6	74.5	79.4	89.3	90.1	90.8	91.1	4.6
Canada	Kt	16.8	17.4	17.3	17.3	17.3	17.3	17.3	0.5
Namibia	Kt	8.2	9.1	9.5	9.1	9.6	10.0	10.0	3.3
Niger	kt	0.6	1.3	2.1	4.5	4.4	4.7	4.8	39.5
Kazakhstan	Kt	26.4	26.5	27.9	34.7	34.2	34.0	34.0	4.3
Russia	Kt	3.1	3.1	3.2	3.5	3.8	4.1	4.2	5.6
Uzbekistan	Kt	4.7	4.7	4.7	4.7	4.7	4.7	4.7	0.0
Demand	Kt	95.2	92.2	97.0	99.4	95.9	104.3	104.6	1.6
China	Kt	14.0	16.4	16.2	22.4	23.9	20.1	19.1	5.3
EU 28	Kt	22.1	21.2	20.9	20.6	20.9	21.6	20.9	– 1.0
Japan	Kt	5.5	6.9	7.2	6.1	6.1	6.1	6.1	1.7
Russia	Kt	6.0	7.3	6.6	7.6	6.6	6.6	6.6	1.5
United States	Kt	21.8	20.8	20.8	20.8	21.7	21.7	21.7	– 0.1
Price									
Nominal	US$/lb	85.1	69.4	79.0	86.1	89.7	94.3	102.6	3.2
Real[c]	US$/lb	86.8	69.4	77.4	82.7	84.3	86.8	92.5	1.1
Australia	**Units**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR[r]**
Production	t	5,797	6,040	6,933	7,233	7,355	7,755	8,305	6.2
Export volume	t	5,742	6,039	6,933	7,233	7,355	7,755	8,305	6.3
nominal value	A$m	1,200	1,414	1,596	1,780	1,877	1,881	1,912	8.1
real value[d]	A$m	1,231	1,414	1,544	1,675	1,723	1,685	1,671	5.2
Average price	A$/kg	209.1	234.2	230.2	246.0	255.2	242.5	230.2	1.6
Real average price	A$/kg	214.3	234.2	222.7	231.6	234.3	217.2	201.2	– 1.0

Notes: **c** In 2024 US dollars; **d** in 2024–25 Australian dollars; **s** estimate; **f** forecast; **r** Annual growth rate; **z** Projection.
Source: Department of Industry, Science and Resources (2025); Cameco Corporation (2024); Ux Consulting Uranium Market Outlook (2024)

Gold

Australia's gold sector

World's 3rd

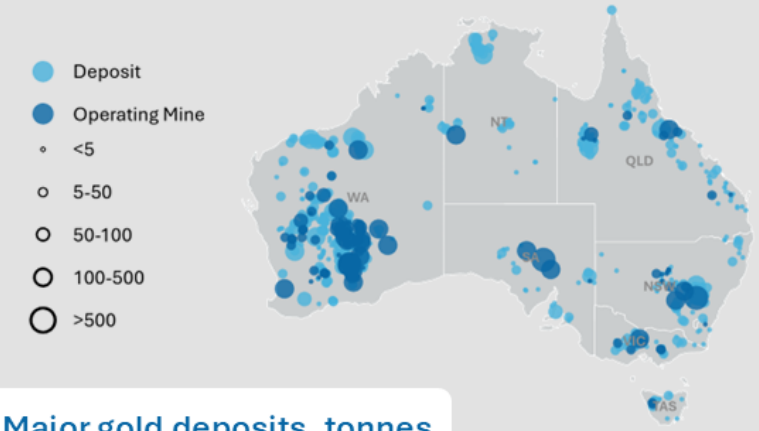
largest producer of gold, 2023

Largest

known global share of gold resources at 22%

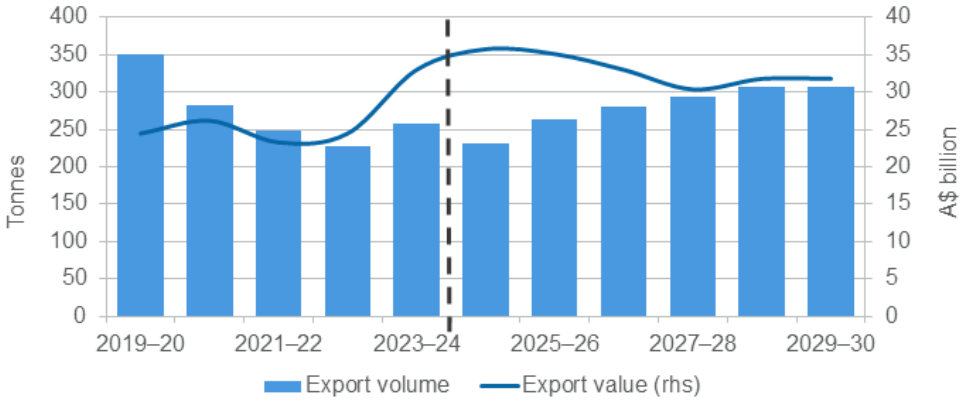
258 tonnes

exported in 2023–24, valued at $33 billion



Major gold deposits, tonnes

Australian gold exports



Outlook

Prices expected to remain high over the outlook period from strong demand

Export earnings to remain stable over the forecast period.

Production will continue rising to 2028–29 after which it will flatten

Exploration spending remained flat over 2024 at a lower level than the peak of 2020–22

Source: GA, DISR, OCE

Gold trade map

Source: UN ITC; ABS

Note: Global trade data reflects trade in HS code 7108 (Gold, including gold plated with platinum, unwrought or not further worked than semi-manufactured or in powder form). This includes ETF and investment flows.

9.1 Summary

- Gold prices rose 35% to the December quarter (year-on-year). Prices have been boosted by global economic uncertainty and monetary easing by major central banks. Prices are forecast to rise in 2025 before falling to about US$2,200 an ounce by 2030 (in real terms) as supply lifts and central banks meet target holdings.
- Australian gold output rose to 72 tonnes in the December quarter 2024. Australian gold output is projected to rise over the outlook period to 377 tonnes a year by 2029–30 (from 289 in 2023–24), with output lifting across multiple large-scale operations and new projects coming online.
- Australian gold earnings are forecast to increase to $36 billion in 2024–25 due to a rise in export volumes and a high gold price. Gold exports are forecast to be $32 billion by 2029–30 due to the forecast gold price decline.

9.2 World consumption

Demand increasing on trade uncertainty and geopolitical tensions

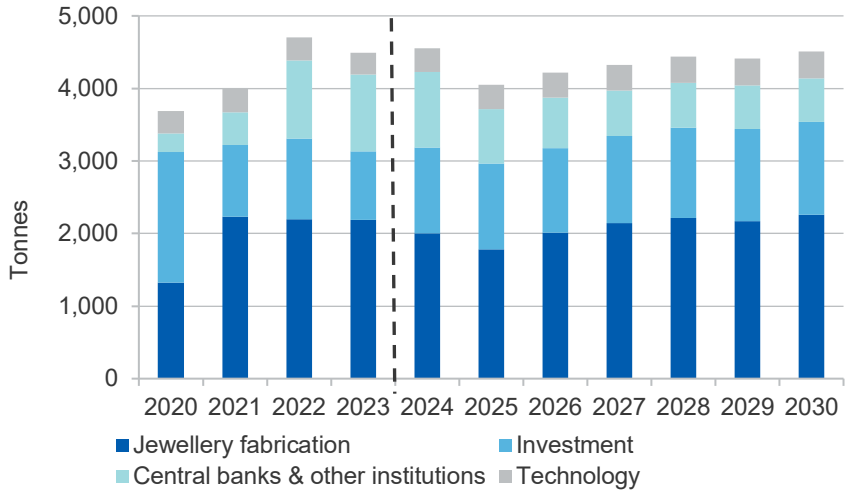
Global gold demand increased by 1.2% year-on-year in 2024 to 4,548 tonnes (Figure 9.1). The rise in demand was driven by increased investment across bar and coins and exchange traded funds, partly offset by falls in jewellery consumption. Gold consumption will decrease in 2025 to 4,196 tonnes but will rise from 2026 as prices moderate to around 4,500 tonnes per year in 2030.

Persistent high gold prices saw jewellery consumption in the December quarter fall in China (down 12% year-on-year) and India (down 5% year-on-year). Falling prices over the forecast period should drive a rebound in demand for jewellery after 2026.

Central bank demand is expected to continue to be strong. Official sector demand is forecast to ease to 752 tonnes in 2025, an upwards revision from 700 tonnes in the March 2024 Resources and Energy Quarterly (REQ). This is a 30% decline from the high levels of 2022 but remains elevated compared to historical averages. This forecast decline is premised on the expectation that some central banks will have likely met near-term targets for increasing gold reserves, following two years of record buying. Long-run official sector gold demand is unchanged at 600-650 tonnes from the March 2024 REQ.

The World Gold Council surveyed 70 central banks from 19 February 2024 to 30 April 2024, with 29% of the survey respondents stating an intention to increase their country's gold reserves in 2025.

Figure 9.1: World gold demand by sector



Notes: Jewellery fabrication includes jewellery consumption and the change in jewellery inventory. Investment includes ETFs, bars and coins. Technology includes gold used in electronic, dentistry and other industrial sectors.
Sources: Department of Industry, Science and Resources (2025); Metals Focus (2025); World Gold Council (2025).

Purchases of gold by the official sector are high due to some countries wanting to move reserves away from US dollar-based assets such as US equities and bonds. Economic and geopolitical uncertainty typically lift gold reserves. Uncertainty relating to global trade actions and foreign policy, combined with ongoing conflict and the imposition of sanctions against Russia, have bolstered the demand for gold to be held in reserves.

Investment demand (gold-backed exchange traded funds (ETFs) or bar/coin holdings) grew year on-year to 2024 by 25% after low investment

activity in gold in 2023. Investment demand will likely remain strong over the outlook, forecast at around current levels. In 2024, ETFs saw consistent outflows as profits were taken. It is expected that H1 2025 will see continued outflows, but positive inflows will resume after 2026.

Current investment is being driven by holding of gold as a 'safe haven' or defensive asset against uncertainty. As US policy changes are implemented, gold demand by investors should start to ease.

Box 9.1: Gold imports to the US – recent spike

In January 2025, the US saw a surge in non-monetary gold imports, including from Australia. According to ABS monthly trade data, in January 2025 Australian gold exports to the US rose by 283% month-on-month to $4.6 billion. Market commentators observed that this initial movement of gold was driven by market speculation of a blanket tariff that could apply to gold imports to the US. This led to large volumes of gold being moved to New York exchanges and private vaults. Demand for gold to be moved to the US was heightened by a widening spread between US COMEX and the London cash (LBMA) price.

High imports of gold by the US will likely subside to normal levels by Q2 2025. Inventories in the US are now high and the futures price differential between COMEX and London is dropping.

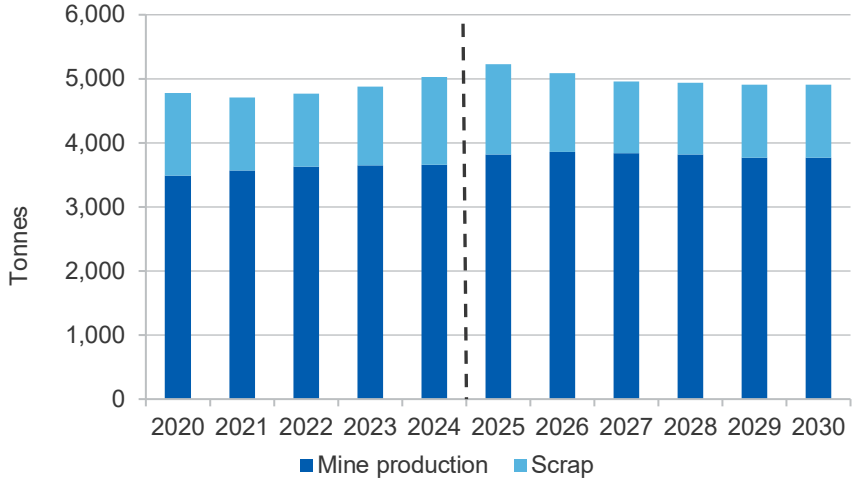
9.3 World production

World supply to stabilise after peaking in 2025

World gold supply increased by 1% year-on-year to reach 4,974 tonnes in 2024, as high prices pushed up gold recycling and primary production. Canada, Australia, Papua New Guinea and Central and South America are all forecast to lift their gold mine production in 2025, with expansions in existing projects and higher output offsetting output falls in Indonesia.

From 2026, gold supply is projected to remain relatively stable at about 5,000 tonnes per year (Figure 9.2). The rise in mine output to 2026 is expected to come from higher output from existing mines- as miners use high grade gold veins to capitalise on high gold prices- as well as new

Figure 9.2: World gold supply



Source: Department of Industry, Science and Resources (2024); Metals Focus (2024); World Gold Council (2024).

supply, especially in Canada. As high grades are depleted over the outlook period, output from currently operating mines will fall. Expected output from mines under construction and in the feasibility study stage are forecast to offset falling output from existing mines to 2030.

Gold scrap grew by 11% in 2024 (year-on-year) and this trend will likely continue in 2025. Scrap rose due to low jewellery sales in India and China, with retailers melting stock. Chinese scrap growth was particularly strong with 45% growth year-on-year and accounting for roughly 11 percentage points of the total global scrap growth. Over the rest of the outlook period, scrap supply will drop significantly from 2027 as inventories are depleted and the gold price moderates.

9.4 Prices

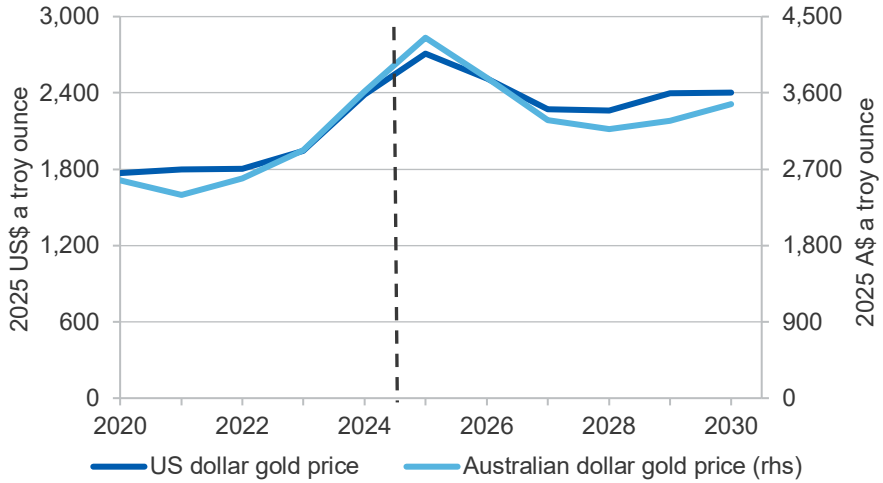
Gold prices to remain at record highs due to falling interest rates and geopolitical tensions

Safe-haven demand for gold helped drive strong gold price gains in 2024. This trend is expected to continue in 2025 with a forecast average price of

US$2,700 an ounce. Factors leading to safe-haven demand are expected to persist over the outlook period, including ongoing conflicts and rising trade barriers.

In 2026, the gold price is expected to fall to an average of about US$2,500 an ounce in nominal terms (Figure 9.3). This fall reflects higher gold mine output, lower official sector buying and reduced concerns over inflation. This new price level is projected to continue over the outlook period. The cumulative impact of central bank buying, a pickup in jewellery sales after low sales in 2024 and continued demand for investors, will buoy demand and prices to 2030.

Figure 9.3: Gold price



Source: Department of Industry, Science and Resources (2025); LMBA (2025).

As noted in the December 2024 REQ, lower official interest rates reduce the return on interest-bearing deposits with financial institutions and thus lower the opportunity cost of holding gold. Any significant risk that creates inflationary pressure may result in a tightening of monetary policy and the reversal of this trend. It is also worth noting that the traditional inverse relationship with the US dollar has weakened recently, with gold prices and the USD both lifting.

9.5 Australia's trade, production and exploration

Australian gold production to be supported by major project expansions

Australia gold production is forecast to increase by about 20 tonnes in 2025 from around 300 tonnes in 2024. Production in 2024 was impacted by planned outages and rain. An increase in Australian production is anticipated over the forecast period, as a pipeline of gold projects (noted in the 2024 *Resources and Energy Major Projects* report) progresses. Significant expansions to existing mines are also expected, which should counter some declining grades and mine production downgrades. New mill capacity will also be coming online which will allow total production to increase.

Westgold's Great Fingall project remains on track to commence production in the first half of 2025, with annual production of 1.4 tonnes per year anticipated. Greatland Gold's Telfer gold mine in WA resumed production in September 2024 and is forecast to extract an average 0.9 tonnes of gold a month for the next 15 months. De Grey Mining's Hemi gold mine is due to be operational in 2026 with production to be around 17 tonnes per year.

Northern Star Resources' and KCGM Super Pit gold operation is expected to produce about 20 tonnes per year by 2025–26. In 2023, Northern Star committed to a $1.5 billion mill expansion at KCGM: the expansion should lift the Super Pit's output to 28 tonnes in 2028–29, up from 13 tonnes in 2022–23.

On 31 October 2024, Newmont submitted an application to extend the permit for its Cadia underground mine operation in NSW from 2031 to 2050. Cadia is one of Australia's biggest gold mines with about 530 tonnes of reserves, and annual production is expected to be about 35 tonnes per year. Newmont also is expanding its Tanami mine and is expected to increase production to 18 tonnes per year in the second half of 2025 (from around 6 tonnes per year currently). Stripping in the Boddington mine is due to be completed soon and should lift output at the site by about 4-5 tonnes per year.

Evolution Mining received final regulatory approval for the continuation of Cowal gold operations in New South Wales until at least 2042. The Cowal mine produced 9.7 tonnes of gold in 2023-24 and production is expected to increase in coming years.

Gold earnings to rise in 2025–26 before declining over the longer term

Australia's gold export earnings rose by 35% to $33 billion in 2023–24, reaching a record in nominal terms (Figure 9.4). The gain was driven by higher Australian dollar gold prices and a lift in volumes. Export earnings are forecast to increase by a further 8.3% in 2024–25 to $36 billion. Export earnings are then projected to drop by 2.2% annually (on average), to around $28 billion (in real terms) by 2029–30. This decrease is due to the forecast drop in gold prices over this period.

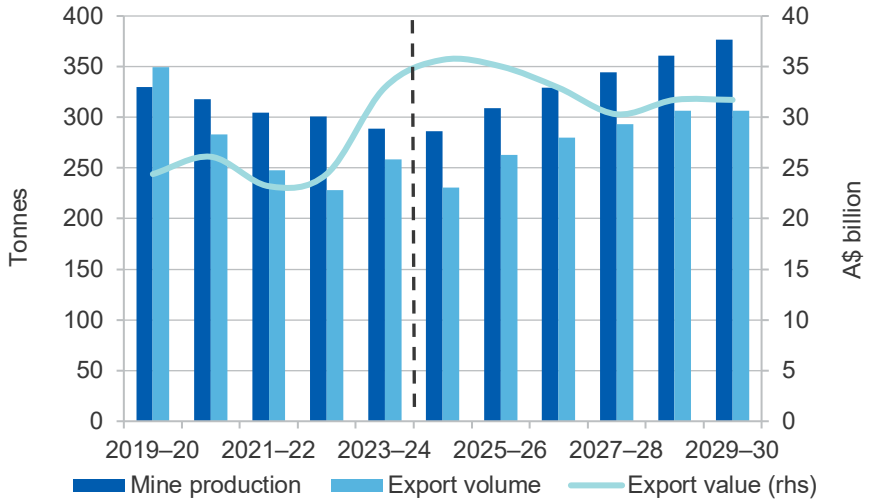
Growth in Australian exports in 2024 (year-on-year) was led by a 44% year-on-year rise in exports to financial hubs (US, UK, Switzerland, Hong Kong and Singapore), which collectively purchased $23 billion worth of gold in 2024. Year-on-year to 2024 exports to the US rose by 80% ($2.9 billion), exports to Hong Kong rose by 30% (to $8.8 billion), exports to Singapore by 20% (to $3.3 billion) and exports to the United Kingdom by 131% (to $3.5 billion). In key consumer markets, exports to India rose by 48% (to $5.0 billion) and exports to China fell by 52% (to $3.6 billion).

Exports to financial hubs will continue at similar levels to 2024 over the outlook period in-line with investment demand. Demand by consumers for jewellery in India and China will increase as prices drop after 2025 and will see a pickup in exports to these markets.

Revisions to the outlook

Australia's forecast gold export earnings in 2024–25 have been revised up (by 3%) from the December 2024 REQ. The driver of upward revisions to export values (which have been revised up across the board) has been US dollar gold prices, due to persistent strength on the demand side from investors and central banks. Combining this with a weaker than expected AUD/USD, Australian dollar gold prices have been revised up by 4% in 2024–25 and 10% in 2025–26. Further out, exports in 2028–29 are now projected to be $32 billion compared to $23 billion in the March quarter 2024 REQ.

Figure 9.4: Australian gold exports and mine production



Source: Department of Industry, Science and Resources (2024); Metals Focus (2024); World Gold Council (2024).

Table 9.1: Gold outlook

World	Unit	2024	2025[f]	2026[f]	2027[f]	2028[z]	2029[z]	2030[z]	CAGR[r]
Total demand	tonnes	4,548	4,196	4,381	4,574	4,618	4,561	4,508	-0.1
Fabrication consumption [b]	tonnes	2,330	2,835	2,856	2,889	2,924	2,538	2,628	2.0
Mine production	tonnes	3,661	3,817	3,857	3,836	3,818	3,768	3,768	0.5
Price [c]									
– nominal	US$/oz	2,387	2,709	2,515	2,270	2,261	2,395	2,400	0.1
– real [d]	US$/oz	2,365	2,466	2,207	2,179	2,126	2,205	2,164	-1.5
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[f]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR[r]**
Mine production	tonnes	289	286	309	329	345	361	377	4.5
Exports									
– volume	tonnes	258	230	263	280	293	307	307	2.9
– nominal value	A$m	32,931	35,677	35,030	32,916	30,300	31,721	31,721	-0.6
– real value [e]	A$m	33,760	35,677	33,895	30,979	27,821	28,415	28,415	-2.8
Price									
– nominal	A$/oz	3,171	4,141	4,041	3,444	3,217	3,218	3,218	0.2
– real [e]	A$/oz	3,254	3,625	3,273	3,241	2,954	2,882	2,882	-2.0

Notes: **b** includes jewellery consumption and industrial applications; **c** London Bullion Market Association; **d** in 2024 US dollars; **e** In 2023-24 Australian dollars; **f** Forecast; **z** Projection.
Sources: ABS (2025); Department of Industry, Science and Resources (2025); London Bullion Market Association (2025) gold price PM; World Gold Council (2025).

Aluminium, alumina, bauxite (AAB)

Australia's AAB sector

12%

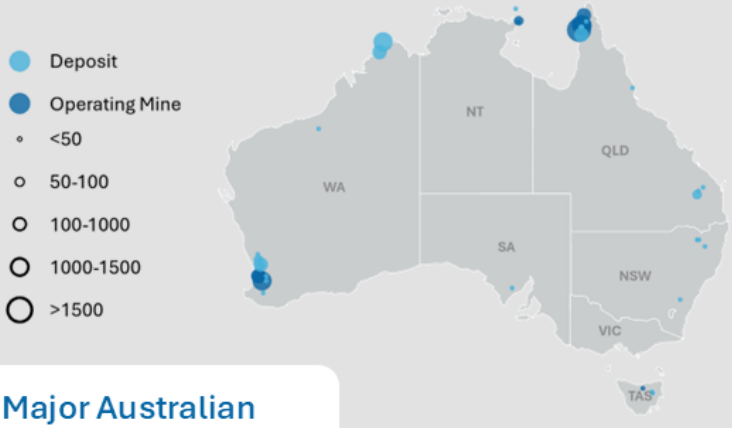
of global primary aluminium exports are Australian

$17 billion

Of primary Aluminium alumina and bauxite exported in 2023–24

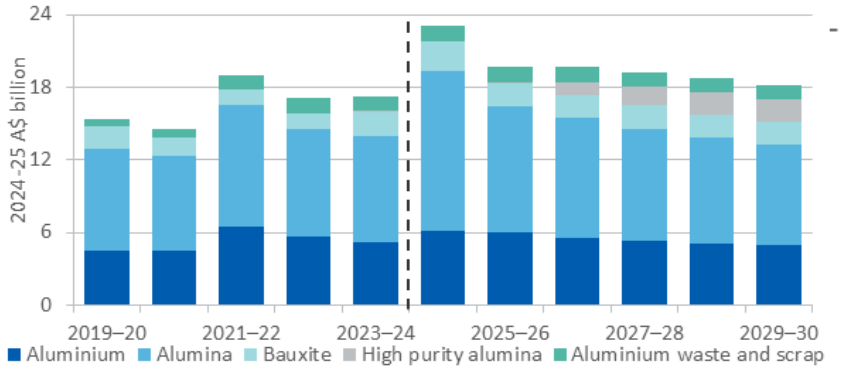
Over 98%

of Australian bauxite is exported to China



Major Australian Bauxite deposits, Gt

Australia's AAB exports



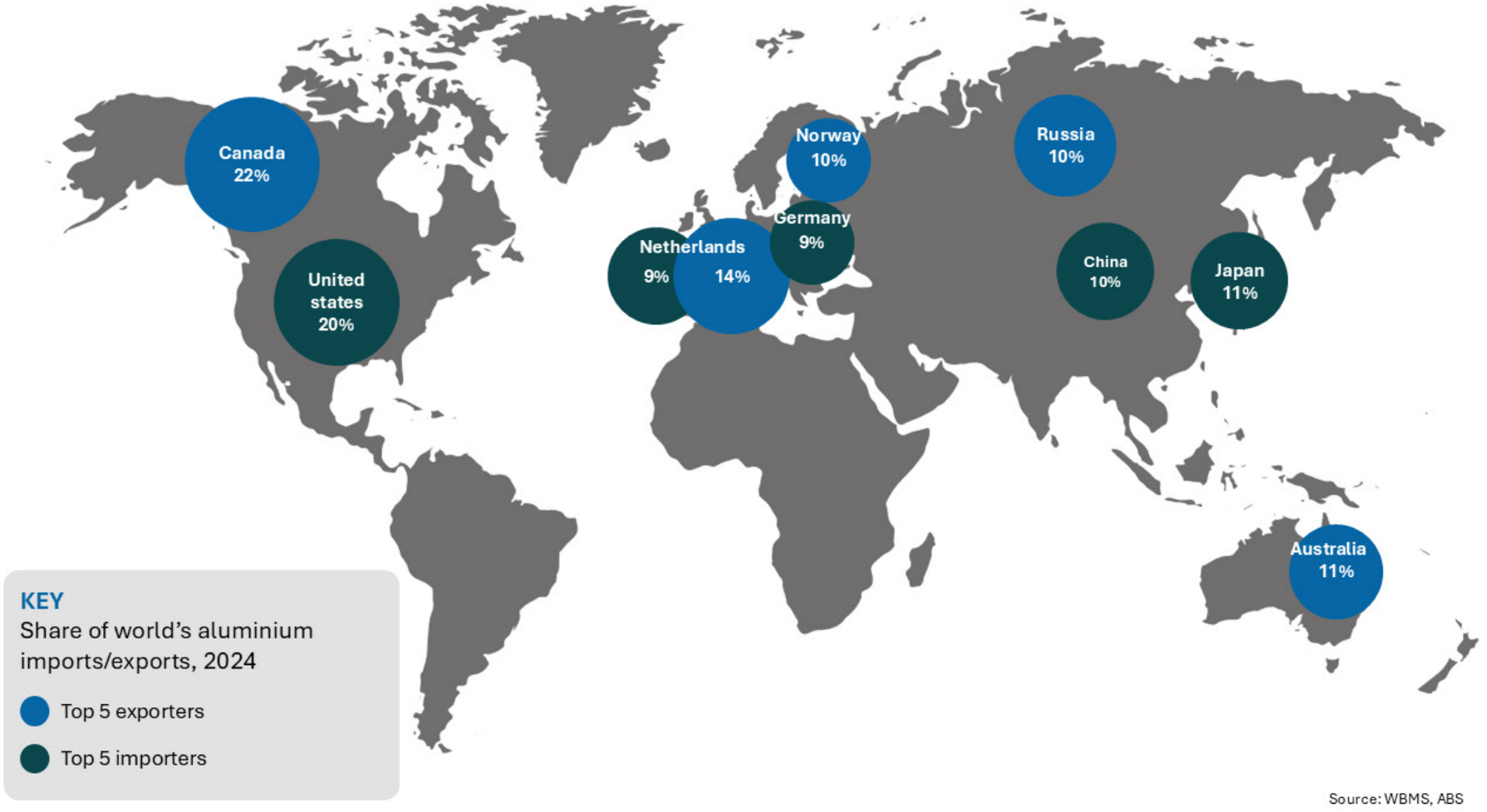
Outlook

- AAB earnings set to reach a record of $23 billion in 2024–25
- Australian alumina output to reach 18 million tonnes per annum
- Australian bauxite alone is a $2 billion export industry
- Aluminium prices expected to remain elevated

Source: DISR, OCE

Source: DISR: OCE

Aluminium trade map



10.1 Summary

- The Australian alumina price hit record highs in 2024, on the back of a reduced supply of alumina and bauxite from Australia and Guinea. The alumina price is expected to fall over the outlook period as supply recovers. Growing demand for new energy-efficient cars/technologies is forecast to push the aluminium price up to US$2,713 (or US$2,445 in real terms) a tonne by 2030.
- Australia's primary aluminium output is expected to be stable at 1.6 million tonnes (Mt) a year over the outlook period. Increased production at South32's Worsley alumina refinery is expected to lift Australian output to 18 Mt in 2029–30. New projects and sustained output in existing mines are expected to lift Australian bauxite output to 104 Mt in 2029–30.
- High Australian alumina prices and bauxite export volumes are forecast to drive Australia's total aluminium, alumina and bauxite (AAB) export earnings to a new record high of $23 billion in 2024–25. Earnings are expected to fall to $18 billion a year in real terms by 2029–30, as alumina prices ease.

10.2 World demand

Electric vehicles and solar power boosted aluminium demand in 2024

Strong demand for electric vehicles (EV) and rooftop solar helped boost global primary aluminium demand in 2024. Global primary aluminium demand rose by 3.3% in 2024 to nearly 72 Mt, with 17 million EVs sold in the world — up 26% on 2023 figures.

Solar power projects attracted US$521 billion of global investment in 2024, with nearly 600 gigawatts of solar power installed around the world. China, India, the US and Brazil built record amounts of solar power, both at the utility scale and on rooftops (Bloomberg New Energy Finance).

Cost-cutting efforts by automotive makers have led to greater use of recycled aluminium and helped to push secondary aluminium demand up by 3.6% to 26 Mt in 2024.

Higher global primary aluminium production boosted demand for alumina by 2.5% to 140 Mt in 2024. Demand in China and India rose by 4.1% and 1.5%, respectively, as Chinese and Indian aluminium smelters required more alumina to increase primary aluminium production.

Higher alumina production in China increased global bauxite demand by 2.0% year-on-year to nearly 359 Mt in 2024.

EV and low emission technologies drive aluminium demand further

Strong demand from the EV manufacturing and other low emission technology sectors — such as solar panel components and wind turbines — is expected to boost global aluminium demand from 74 Mt in 2025 to 78 Mt in 2030 (Figure 10.1).

Rising primary aluminium prices and demand for low-carbon aluminium are expected to boost recycled aluminium demand over the outlook period. Recycled aluminium demand is projected to increase from 27 Mt in 2025 to 33 Mt in 2030, with the International Aluminium Institute noting that recycled aluminium is 95% less energy-intensive than primary aluminium.

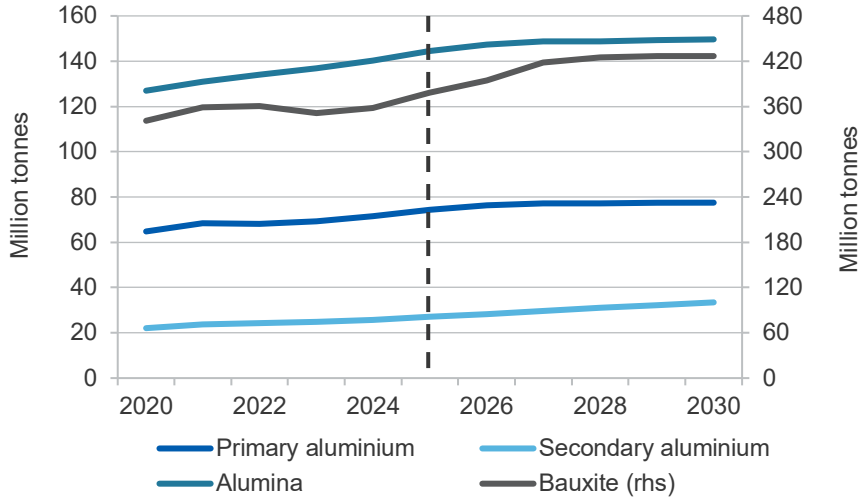
An expected rise in global primary aluminium production is likely to drive higher demand for alumina over the outlook period. In line with world primary aluminium production, world alumina demand is projected to increase from 145 Mt in 2025 to 150 Mt in 2030 (Figure 10.1).

An expected rise in Chinese, Indian and Indonesian alumina production is likely to increase global bauxite demand over the outlook period; usage should rise to 427 Mt by 2030 (Figure 10.1).

Growing trend for aluminium to substitute for copper

There has been a renewed surge in the replacement of copper with aluminium in some applications. Copper is a better conductor of electricity than aluminium, but in recent quarters the price differential has become large enough to justify switching. The substitution has taken place among Japanese and South Korean manufacturers who use electrical wire for motors in appliances such as refrigerators.

Figure 10.1: World primary aluminium, alumina and bauxite demand



Source: Department of Industry, Science and Resources (2025); World Bureau of Metal Statistics (2025).

10.3 World supply

Global AAB output grew to accommodate rising demand in 2024

An increase in Chinese supply contributed to a 2.5% rise in global primary aluminium output in 2024 from 2023, to nearly 72 Mt. In 2024 China produced 43 Mt of primary aluminium (up 4.1% year-on-year), with producers reacting to rising demand from the renewable power industry. This increased demand offset weakness in demand from the Chinese residential construction sector.

Driven by the increased demand for recycled aluminium, global recycled aluminium output rose by 1.2% year-on-year to 32 Mt in 2024. Italy and the US accounted for most of this increase, with recycled aluminium output increasing by 11% and 3.8% year-on-year, respectively.

Lower alumina output in Australia — the world's second largest alumina producer — was offset by an increase in China, which saw global alumina output 2024 increased by 1.4%.

Higher bauxite output from Guinea and Australia boosted global bauxite output by 1.1% year-on-year in 2024.

High prices to drive global AAB output over the outlook period

High primary aluminium prices are expected to encourage growth in global primary aluminium supply over the outlook period. It is projected that global primary aluminium supply will increase from 74 Mt in 2025 to 77 Mt in 2030 (Figure 10.2).

Indonesia will contribute most to this rise. Primary aluminium supply in Indonesia is projected to increase from 0.6 Mt in 2025 to 1.8 Mt in 2030, tripling of output.

In China, primary aluminium output is expected to stay at 44 Mt a year over the outlook period, close to the capacity cap of 45 Mt a year introduced by the Chinese Government in 2017.

Driven by higher output from China, the US and Europe, global recycled aluminium output is projected to increase from 33 Mt in 2025 to 42 Mt in 2030.

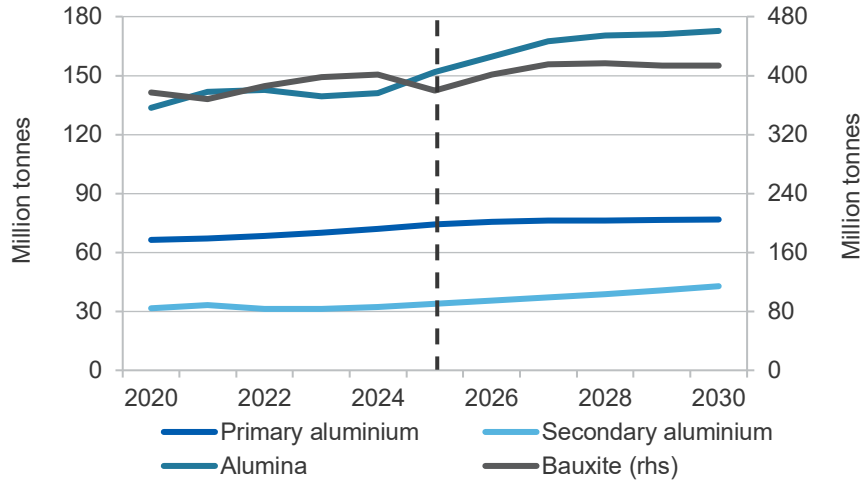
High alumina prices, new refineries and production ramp-ups are expected to drive up global alumina output to 173 Mt by 2030 (Figure 10.2).

It is projected that around 13 Mt of new alumina refining capacity will come online in China in 2025. On 24 February 2024, China Hongqiao Group commenced the construction of its 8 Mt a year Binzhou alumina refinery.

Outside of China, India's Vedanta plans to invest in a new 6 Mt a year alumina refinery by 2026. In Guinea, Emirates Global Aluminium plans to build a new 2 Mt a year alumina refinery, expected to come online in September 2026. The construction of SPIC International Investment and Development Guinea's 1.2 Mt a year alumina refinery in Boffa d in March 2025.

Higher output from Guinea and Australia is expected to increase global bauxite output from 379 Mt in 2025 to 413 Mt in 2030.

Figure 10.2: World primary aluminium, alumina and bauxite supply



Source: Department of Industry, Science and Resources (2025); World Bureau of Metal Statistics (2025).

Research into extracting gallium

Research into extracting gallium will untap the opportunity for the global AAB industry to extract and process an important semiconductor material: gallium. Gallium is found for the most part in bauxite deposits and produced primarily as a by-product of alumina refining. China accounts for 98% of current global gallium production. Global supply of semiconductors is not expected to keep up with the global demand, as the transition to net zero accelerates.

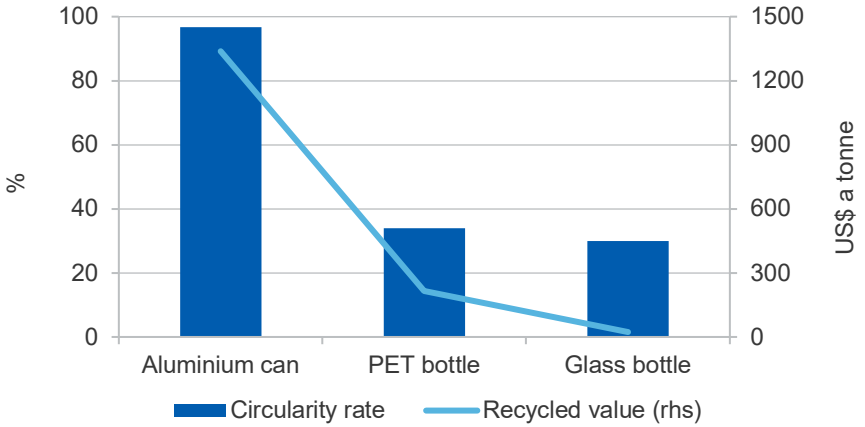
In December 2024, Rio Tinto announced the commencement of a research and development program to explore gallium extraction from bauxite at its Saguenay-Lac-Saint-Jean alumina refinery in Canada. If successful, a demonstration plant will be established with a production capacity of up to 3.5 tonnes a year of gallium.

Australia, as the world's major supplier of bauxite, is likely to benefit from any future research into extracting gallium.

Recycling growth to displace aluminium demand

The Can Manufacturers Institute and the US Aluminium Association put the circularity rate — the measure of efficiency that resources are re-used and recycled within a system — of aluminium cans at 97%, followed by polyethylene terephthalate (PET) bottles (34%) and glass bottles (30%).

Figure 10.3: US' recycling rates and values, 2023



Source: US Aluminium Council (2024); US Can Manufacturers Institute (2024).

The value of recycled aluminium cans is the highest among beverage packages with an average value of US$1,338 a tonne, compared to an average of US$215 a tonne for PET bottles and US$23 a tonne for glass bottles (Figure 10.3), emphasizing good demand for recycled aluminium.

Investment boosts Guinea and global alumina supply

The Guinean Government's push to increase its refining capacity is set to accelerate with the latest investment from China. In January 2025, China's State Power Investment Corporation (SPIC) announced the construction of a 1.2 Mt a year alumina refinery in Guinea. Due for completion in 2027, the SPIC refinery is set to become the second largest alumina refinery in Guinea and to bring up Guinea's alumina output to 1.7 Mt a year from 2027 and beyond. As a result, global alumina supply is projected to increase from 152 Mt in 2025 to 173 Mt in 2030.

10.4 World trade

Sanctions on Russian aluminium reduced global exports in 2024

Global primary aluminium exports fell by 5.7% year-on-year in 2024 to 13 Mt. Sanctions on Russian exports were the main driver, with Russia's share of world primary aluminium exports falling from 16% in 2023 to 10% in 2024. Stronger-than-expected growth in European primary aluminium output offset this partly, freeing up more secondary aluminium for export. Global secondary aluminium exports rose by 0.6% year-on-year in 2024 to 3.4 Mt.

Lower alumina exports from Australia led to a 1.2% fall in global alumina exports in 2024. In 2024, Australia — the world's largest alumina exporter — exported 14.9 Mt of alumina, down by 7.9% year-on-year. China exported 2.1Mt of alumina in 2024, up 31% year-on-year.

Lower bauxite exports from Guinea reduced global bauxite exports by 5.8% year-on-year in 2024 to nearly 170 Mt.

China lifted bauxite imports to meet demand from its alumina refineries

Strong primary aluminium demand in China and the US boosted global primary aluminium imports by 15% year-on-year in 2024 to nearly 20 Mt. Lower secondary aluminium demand in Europe — due to sluggish construction activity — reduced global imports of secondary aluminium.

Lower Russian imports reduced global alumina imports by 7.6% year-on-year in 2024 to 33 Mt. Russian imports fell by 48% year-on-year in 2024 as its domestic alumina output rose.

Higher bauxite imports by China and Ireland led to a 12% year-on-year rise in global bauxite imports in 2024. China and Ireland imported 159 Mt and 4.5 Mt of bauxite, up 13% and 32% year-on-year, respectively.

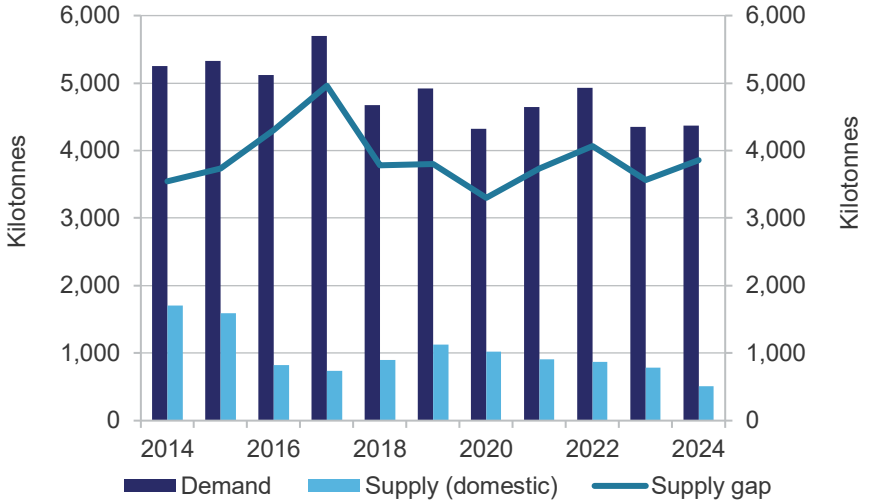
Rising US tariffs

In 2018, the US Government imposed duties of 10% on aluminium imports and 25% on steel imports. However, this had little effect on the US' structural deficit in primary aluminium (Figure 10.4).

On 10 February 2025, the US Government announced a 25% tariff on aluminium (and steel) imports, in an attempt to boost domestic production. The tariffs took effect on 12 March 2025. The US has long had a structural deficit in primary aluminium (Figure 10.4). In 2024, imports still accounted for 83% of US primary aluminium consumption, with Canada accounting for 76% of these (Figure 10.5).

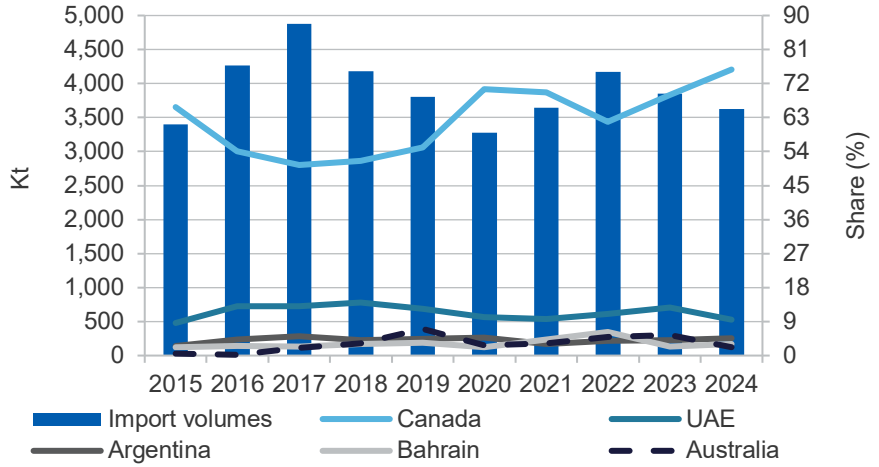
Global primary aluminium production and trade shares may change if the tariffs remain in place. Canada will likely need to divert its primary aluminium exports to other markets. China — accounting for just 0.2% of total US primary aluminium imports — may be less affected by the US tariffs. China is the world's largest primary aluminium producer and consumer, accounting for over 60% of global primary aluminium production and consumption. Primary aluminium production in the US is not expected to increase in the short term, as energy supply and long-term policy uncertainty present challenges for US aluminium producers.

Figure 10.4: US primary aluminium demand and supply



Source: World Bureau of Metal Statistics (2025)

Figure 10.5: US primary aluminium* imports by volumes and shares



Notes: *Unwrought aluminium
Source: US International Trade Administration

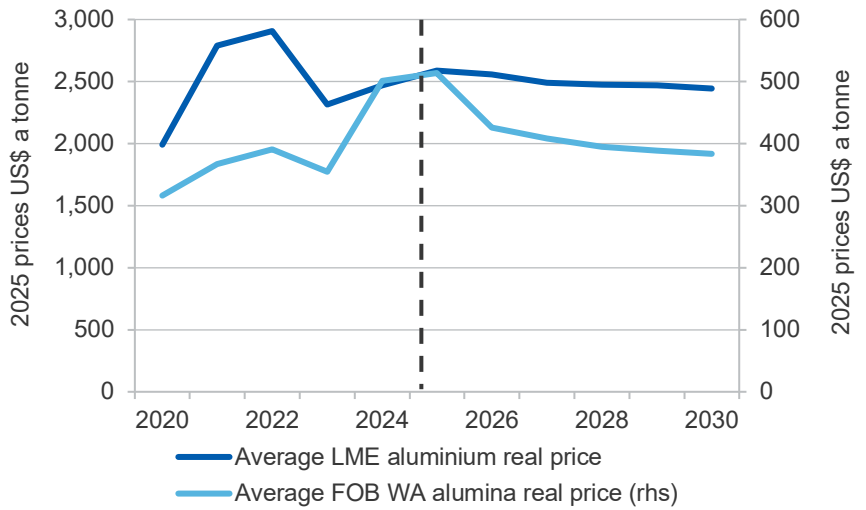
10.5 Prices

Supply issues drove alumina and aluminium prices up in 2024

The production curtailment at Alcoa's Kwinana alumina refinery in WA and a decision by Guinea's government to block bauxite exports from Emirates Global Aluminium drove alumina prices to record highs in 2024. In 2024, the FOB WA alumina price averaged US$502 a tonne, up 41% from 2023. High alumina prices and China's economic policy measures helped push the LME primary aluminium spot price to an average US$2,467 a tonne in 2024, up 6.5% from 2023 (Figure 10.6).

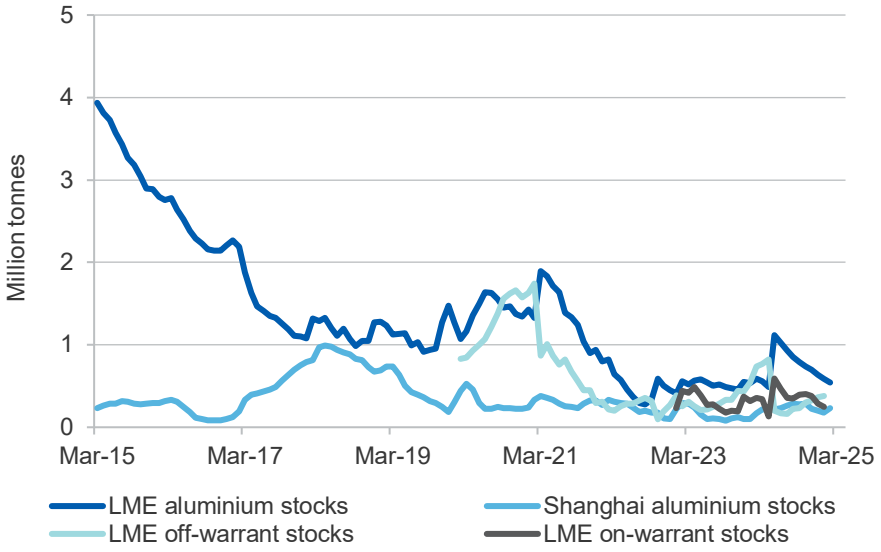
Low inventories have been supporting aluminium prices. Large amounts of Russian aluminium appear to have been held off-warrant — aluminium held in LME approved warehouses that is not yet eligible for LME delivery, but is still subject to reporting requirements to increase market transparency — to avoid sanctions. However, when aluminium sanctions began on 13 April 2024, holders of Russian aluminium steadily switched their holdings back on-warrant. As a result, LME aluminium stocks rose from 491 kt in April 2024 to 639 kt in December 2024 (Figure 10.7).

Figure 10.6: Primary aluminium and alumina real prices



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

Figure 10.7: Exchange aluminium stocks



Source: Bloomberg (2025); London Metal Exchange (2025).

Growing global demand to support prices over the outlook period

Easing global monetary conditions are expected to keep aluminium prices elevated in the first half of the outlook period. The LME aluminium spot price is forecast to average about US$2,600 a tonne in 2025 and 2026.

On balance, price risks are skewed to the upside in the short-term, with power vulnerability in China posing particular risks to aluminium production. On 1 January 2025, 13 provinces in China issued drought warnings, with water levels at the Three Gorges Dam 6% below the five-year average in the December quarter 2024. Downside risks to the short term price forecast include trade actions and retaliatory measures.

Growing global demand for new, energy-efficient cars and technologies and increased electrification efforts are expected to lift aluminium demand over the medium term. The LME primary aluminium price is projected to average US$2,500 a tonne in real terms in 2030 (Figure 10.6).

Alumina prices are expected to remain elevated in 2025, as global supply issues in 2024 are taking a little longer to ease and demand from China remains strong. Australia's alumina output is likely to remain below its normal level (at 18 to 19 Mt a year) for some yet. As a result, the FOB WA alumina price is forecast rise slightly from the 2024 level of US$502 a tonne in real terms.

After 2025, alumina prices are expected to fall due to recovering global supply. Alumina production in China and Indonesia is expected to rise over the outlook period. Australia is also expected to see its output increase, driven by higher production from South32 Worsley operations in WA. The FOB WA alumina price is projected to fall from US$514 a tonne in 2025 to US$384 a tonne in 2030 in real terms (Figure 10.6).

10.6 Australian exports and production

Higher prices and bauxite export volumes lifted export earnings in 2024

Higher alumina and aluminium prices, and increased bauxite export volumes and values, boosted Australia's AAB export earnings by 19% year-on-year in 2024 to $20 billion in real terms.

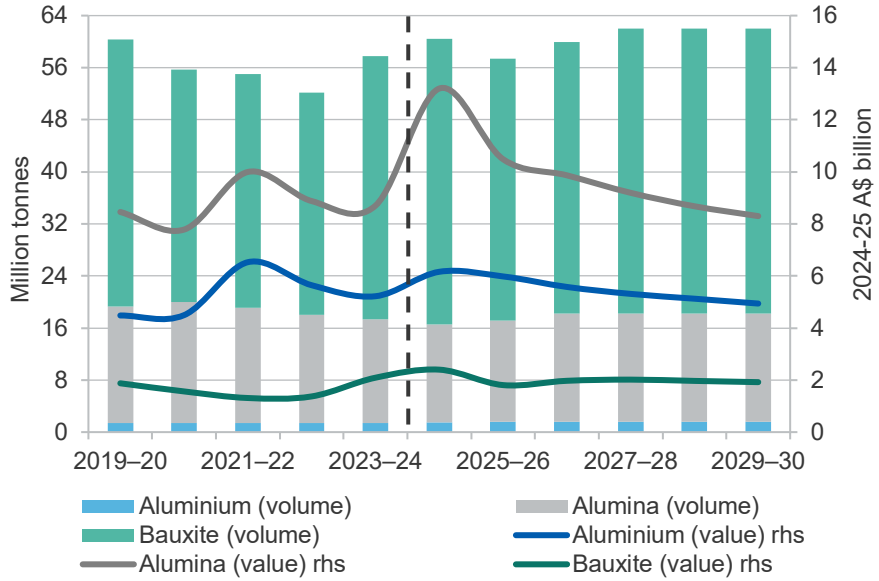
Higher prices and bauxite exports drive export earnings higher

Elevated alumina and aluminium prices, and high bauxite export volumes and values are likely to boost Australia's AAB export earnings to $23 billion in real terms in 2024–25, up 34% year-on-year (Figure 10.8). Australia's alumina and bauxite export earnings are expected to reach record highs of $13 and $2.4 billion, respectively in 2024–25. After 2024–25, Australia's AAB exports are projected to decline to $18 billion in real terms by 2029–30 (Figure 10.8).

Australian aluminium and bauxite producers responded to supply issues

Australian bauxite producers recently have ramped up production in response to export bans from Indonesia and Guinea. Australia's bauxite output rose by 1.4% year-on-year to 101 Mt in 2024.

Figure 10.8: Australian aluminium/alumina/bauxite exports



Note: Excluding high purity alumina and aluminium waste and scrap exports.
Source: ABS (2025); Department of Industry, Science and Resources (2025).

A production curtailment at the Kwinana alumina refinery in WA — due to rising costs, ageing plant and grade challenges — reduced Australia's alumina output by 9.2% year-on-year in 2024.

In 2024, a 2.2% year-on-year rise in Boyne Island's aluminium output drove a minor lift in Australia's primary aluminium output (up 1%).

Environmental approvals support Australia's refinery and mine output

In the March quarter 2025, South32 received approvals from the Commonwealth and WA Governments for the Worsley Mine Development Project. The approvals will enable South32 to access bauxite to sustain production at Worsley Alumina until at least 2036.

In December 2024, Chevron Australia signed a long-term gas supply deal with Alcoa. Under this agreement, Chevron will supply a total of 130 petajoules of gas to Alcoa's alumina refineries in WA over a 10-year period starting in 2028. This sustained supply of energy is expected to support Australia's alumina output over the outlook period. Increased production at South32's Worsley alumina refinery is expected to lift Australian alumina output from under 17 Mt in 2024–25 to over 18 Mt in 2029–30.

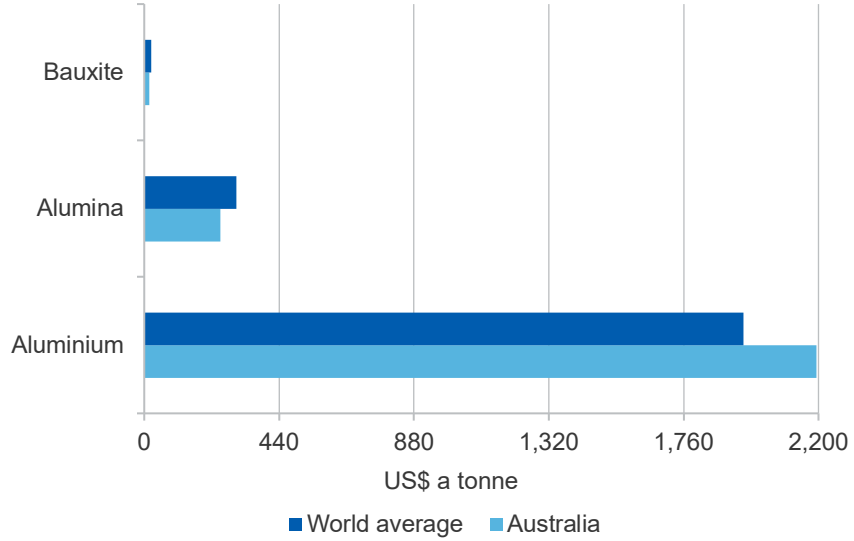
New bauxite projects and sustained output in existing mines are expected to lift Australian bauxite output from 97 Mt in 2025 to 104 Mt in 2030.

No expansions or major disruptions are expected at existing aluminium smelters in Australia over the outlook period. Australia's primary aluminium output is projected to be around 1.6 Mt a year.

Australian alumina and bauxite producers have comparatively low costs

Operating cash costs of aluminium smelters, alumina refineries and bauxite mines are shown in Figure 10.9. Australian refiners and miners' operating cash costs are below the world average, but smelters' costs are above it. Australia's alumina and bauxite output is projected to increase over the outlook period, driven by low operating costs.

Figure 10.9: Operating cash costs, 2025



Notes: Aluminium: Total operating cash costs include average delivered alumina cost, carbon and other raw materials, consumables, labour, repair and maintenance materials, services and other cost, and total energy; Alumina: Total operating cash costs include bauxite, freight, caustic/lime/limestone/ash, total energy, labour, and other costs; Bauxite: Total operating cash costs include diesel, residual fuel, labour, consumables, other materials, services, bauxite levy, royalties and taxes.

Source: Wood Mackenzie (2025)

Revisions to the outlook

The forecast for Australia's AAB export earnings in 2024–25 has been revised up from the December 2024 *Resources and Energy Quarterly (REQ)* by $2.6 billion. The revision reflects a stronger than expected rise in alumina and bauxite exports in the December quarter 2024.

Earnings forecasts for 2028–29 (in nominal terms) has been revised up by 11% to nearly $21 billion from the March 2024 REQ. This reflects the impact of higher aluminium and alumina export earnings.

Table 10.1: Aluminium, alumina and bauxite outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Primary aluminium									
Supply	kt	71,926	74,119	75,486	76,242	76,316	76,613	76,738	1.1
Demand	kt	71,628	74,491	76,381	77,083	77,105	77,451	77,501	1.3
Prices aluminium									
- nominal	US$/t	2,419	2,588	2,608	2,594	2,633	2,686	2,713	1.9
- real	US$/t	2,467	2,588	2,555	2,490	2,475	2,472	2,445	-0.2
Prices alumina									
- nominal	US$/t	492	514	435	425	420	423	426	-2.4
- real	US$/t	502	514	426	408	394	389	384	-4.4
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR[r]**
Supply									
Primary aluminium	kt	1,567	1,609	1,631	1,634	1,636	1,636	1,636	0.7
Alumina	kt	18,255	16,926	17,375	18,350	18,400	18,400	18,400	0.1
Bauxite	Mt	100.5	100.9	95.6	99.4	104.3	104.3	104.3	0.6
Demand									
Primary aluminium	kt	186	131	130	130	130	130	82	-12.8
Exports									
Primary aluminium	kt	1,432	1,527	1,549	1,552	1,554	1,554	1,554	1.4
- nominal value	A$m	5,092	6,159	6,181	5,926	5,783	5,721	5,651	1.8
- real value	A$m	5,220	6,159	5,980	5,577	5,310	5,125	4,938	-0.9
Alumina	kt	15,877	15,040	15,638	16,632	16,632	16,632	16,632	0.8
- nominal value	A$m	8,486	13,199	10,834	10,481	10,011	9,685	9,495	1.9
- real value	A$m	8,700	13,199	10,483	9,864	9,192	8,676	8,298	-0.8
Bauxite	kt	40,497	43,862	40,147	41,745	43,807	43,807	43,807	1.3
- nominal value	A$m	2,039	2,399	1,867	2,095	2,196	2,196	2,196	1.2
- real value	A$m	2,091	2,399	1,806	1,971	2,016	1,967	1,919	-1.4
Total value									
- nominal value	A$m	16,799	23,050	20,357	20,876	20,930	20,912	20,800	3.6
- real value	A$m	17,222	23,050	19,697	19,647	19,218	18,733	18,178	0.9

Notes: Total nominal and real values of Australian exports include primary aluminium, aluminium waste and scrap, alumina, high purity alumina and bauxite. **c** LME cash prices for primary aluminium; **d** In 2025 calendar year US dollars; **e** In 2024–25 financial year Australian dollars; **f** Forecast; **r** Average annual growth between 2024 and 2030 or 2023–24 and 2029–30; **z** Projection; Source: ABS (2025) International Trade in Goods and Services, 5368.0; Bloomberg (2025); London Metal Exchange (2025); Department of Industry, Science and Resources (2025); World Bureau of Metal Statistics (2025)

Copper

Australia's copper sector

World's no.2

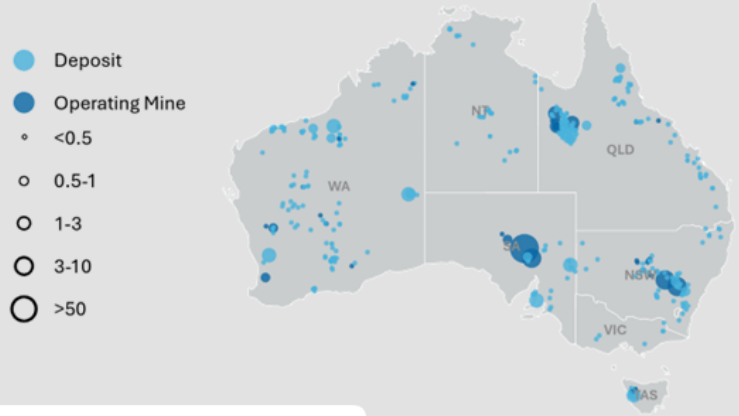
for copper resources

5th largest

refined exporter and 8th largest producer globally, 2024

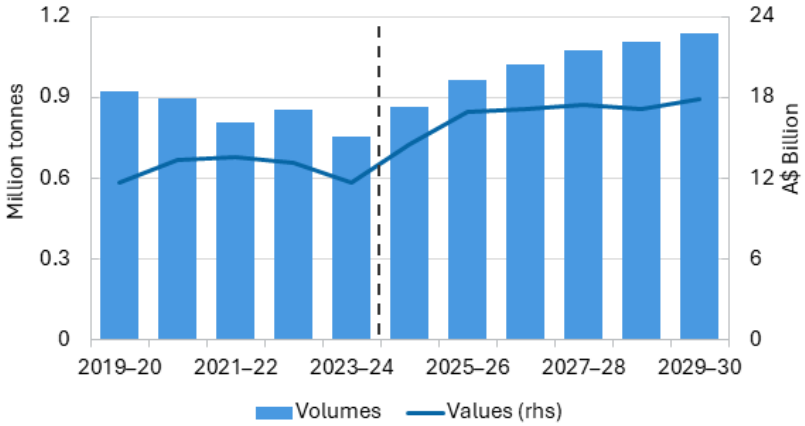
210,000

produced per year at Australia's largest mine in 2024



Major copper deposits, Mt

Australian copper exports

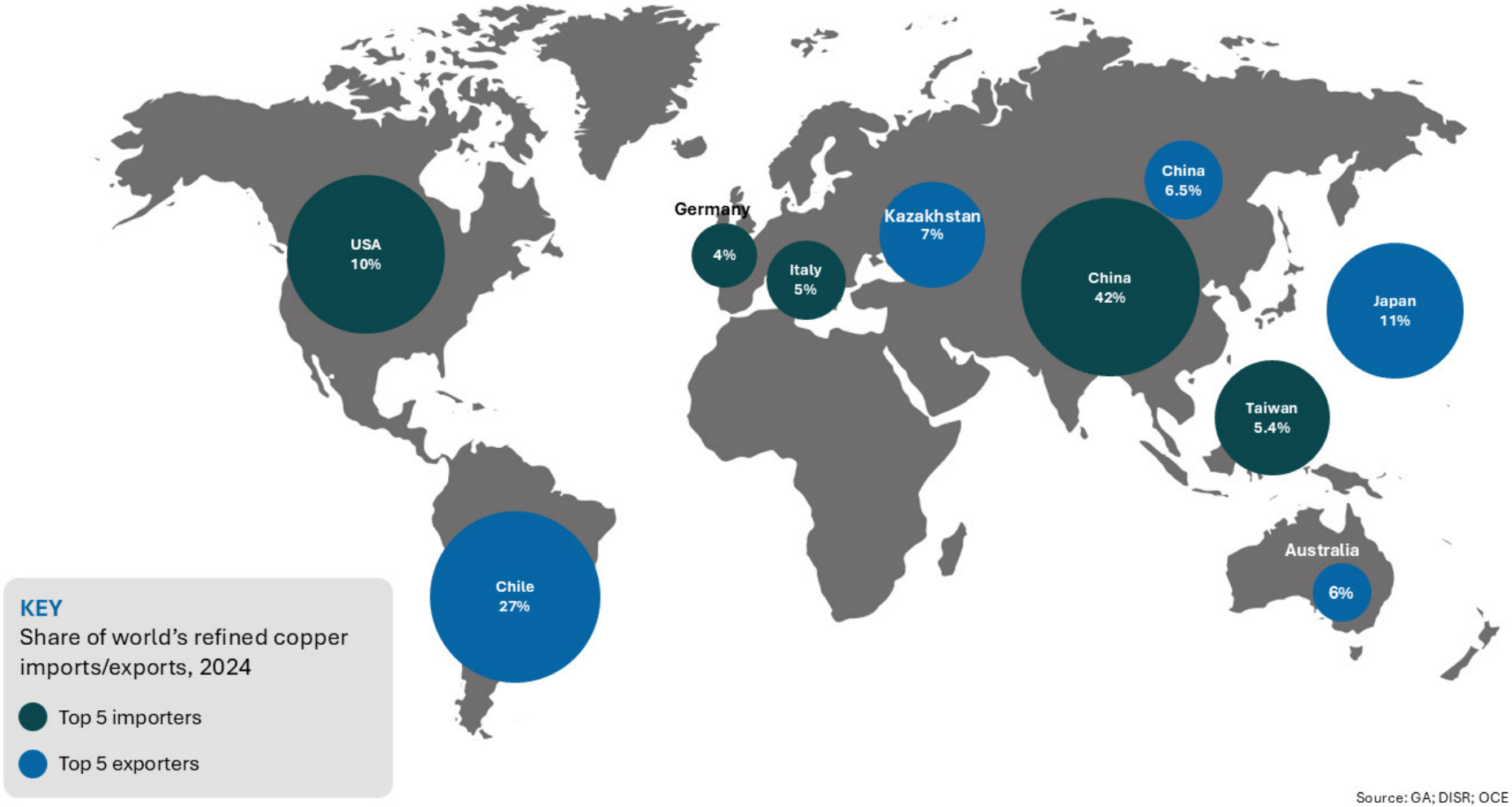


Outlook

- Prices expected to remain high due to strong demand
- Export earnings expected to rise from growing output and high prices
- Production to continue rising
- Exploration expenditure expected to rise

Source: GA; DISR; OCE

Copper trade map



Source: GA; DISR; OCE

11.1 Summary

- Copper prices have risen 11% since the start of 2025, driven by strong Chinese and US demand. Prices are expected to average US$9,570 a tonne in 2025 and rise to US$9,870 a tonne by 2030 in real terms.
- Global demand is projected to grow by an average 2.5% annually to reach 33.2 Mt by 2030. Growth in copper demand will be driven by investment in low emission technologies, data centres and urbanisation.
- Australia's copper exports are projected to grow from 753 kt in 2023–24 to 1.1 Mt in 2029–30, sustained by new mines and expansions. Export earnings are projected to grow — from $11.7 billion in 2023–24 to $17.9 billion (real terms) in 2029–30 due to output growth.

11.2 World Demand

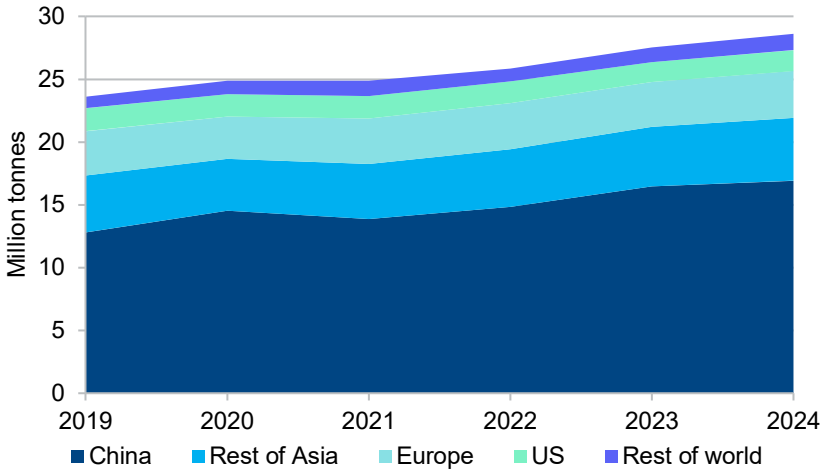
Copper demand to grow, driven by net zero transition

World refined copper demand was 28.6 million tonnes (Mt) in 2024, 3.9% higher than 2023, (Figure 11.1). There was an increase in demand across several key markets: China (2.5%), rest of Asia (6.4%), the EU (4.9%), and the US (4.7%). Copper demand in the rest of the world surged by 7.7% going from 1.2 Mt in 2023 to 1.3 Mt in 2024.

Global demand is forecast to grow by 1.6% in 2025, reaching almost 29.1 Mt. Beyond 2025, demand is expected to increase by an average 2.5% annually, reaching 33.2 Mt by 2030. Key drivers will include average global economic growth, rising usage in consumer appliances, energy transition infrastructure, and construction of data centres for use in AI.

In 2024, China's refined copper demand (representing 59% of global demand) reached nearly 17 Mt, a 2.5% rise from 2023. Imports rose by 8.6% to 4.0 Mt, signalling a demand recovery especially in H2 2024. China's energy transition investments were the main driver of growth, with investment reaching US$818 billion in 2024, a 20% increase from 2023. Renewable energy investment grew by 6% to US$290 billion. Investment in electrified transport rose 37% to US$398 billion as new electric vehicle models were launched, and government subsidies rose. By 2027, EVs are expected to account for 45% of all new vehicles produced.

Figure 11.1: Global refined copper demand



Source: World Bureau of Metal Statistics (2025), Department of Industry, Science and Resources (2025)

Last year, China spent US$87 billion connecting new renewable projects to the grid. In 2024, China surpassed 1,200 gigawatts (GW) of solar and wind capacity, 6 years ahead of schedule. The IEA expects Chinese solar and wind capacity to reach 4,232 GW by 2030, supporting copper usage.

In the US, refined copper demand rose by 4.7% in 2024, reaching 1.6 Mt. The rise was mainly driven by the manufacturing and construction sectors. The US began 2025 with devastating fires in California, damaging homes and buildings. Consequently, copper end use sectors such as construction and manufacturing are expected to see a short-term increase during repair efforts, particularly in wire rod and copper tubes.

In 2024, US investment in the energy transition rose by US$2 billion to US$338 billion. Electrified transport spending grew by 9.0%, and energy storage investment surged by 46% to US$13.7 billion. The US boosted data centre capacity by 10 GW from 2017 to 2022 and plans to add 50 GW between 2023 and 2028. In early 2025, the US announced there would be US$500 billion invested to build the physical and virtual AI infrastructure, all supporting copper demand through 2030. Recent

changes in US trade policy and paused funding for energy initiatives and altered EV subsidies could impact US copper demand. It will take some time to see what changes come into effect and evaluate their impact.

Copper-to-Aluminium switching a growing trend

Copper prices are high and expected to rise, encouraging copper 'thrifting': reducing the copper content of products or processes through design improvements and technological innovations. Copper is being replaced with aluminium in some manufacturing applications (see *Aluminium, Alumina and Bauxite* chapter) because it is about one quarter the price.

However, there are technical limits and trade-offs to thrifting and substitution. For example, aluminium has 60% of the conductivity of copper, requiring aluminium wire to be much thicker to achieve the same function. Copper's conductivity, durability, recyclability, and antimicrobial properties all support demand, however if the price difference is high enough, there could be a larger shift away from the metal.

11.3 World production

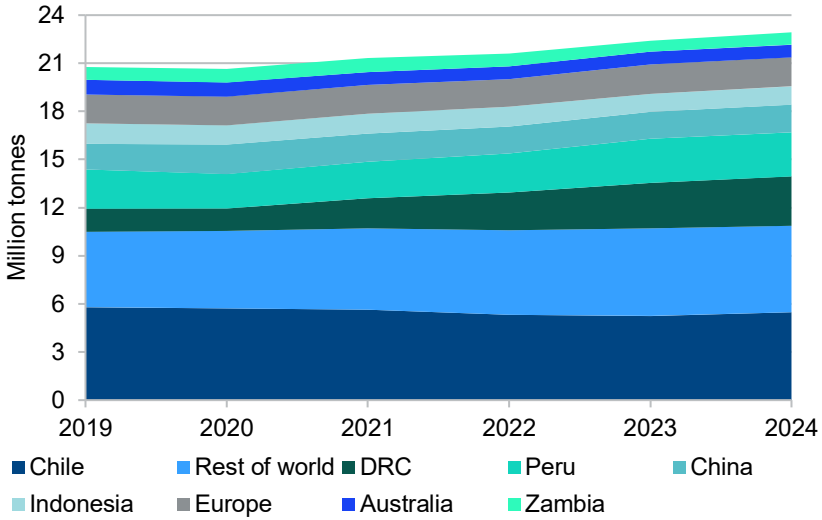
Global mine production to continue to rise in response to high prices

In 2024, global mine production reached 22.9 Mt, a 2.3% rise compared to 2023 (Figure 11.2). Mine output rose in Chile (up 4.2%), the Democratic Republic of Congo (DRC) (up 8.4%) and Indonesia (up 3.6%). The growth was mainly from a recovery of constrained output from Chile and Indonesia, as well as new mines ramping up in the DRC, Botswana, Mongolia and Serbia. This rise was partially offset by declines in other major producing countries such as Canada, Panama, Peru and the US.

Global mine production is expected to reach 23.3 Mt in 2025, and about 26.2 Mt by 2030, growing by an average 2.2% annually. This growth will be driven from capacity expansions of current operating mines and greenfield projects in Chile, the DRC and Peru.

Chile — the world's largest copper miner — is forecast to produce 5.4-5.6 Mt of copper in 2025. According to the Chilean Copper Commission (Cochilco), Chile's copper output is expected to peak in 2027 at 6.1 Mt.

Figure 11.2: Global mine production



Source: World Bureau of Metal Statistics (2025), International Copper Study Group (2025), Department of Industry, Science and Resources (2025)

The DRC produced 3.1 Mt of copper concentrates and around 2.0 Mt of refined copper in 2024, making it the second-largest global producer. Chinese investment has transformed the DRC landscape, with major ownership in mines like Kamoa-Kakula and Tenke Fungurume. New projects starting in 2025 are set to boost annual capacity by 130 Kt per annum. Peru produced 2.7 Mt of copper in 2024, a 1% decrease from 2023, due to declining ore grades and lack of new projects. However, Southern Copper's Tia Maria project from 2027 and Teck Resources' Zafranal project from 2029, could add around 150 Kt production capacity, potentially bringing Peru's output above 2.9 Mt per annum.

Declining ore grades triggering merger and acquisition activity

According to BHP and BDO, the average grades of operating copper mines have declined by about 40% since 1991. 239 copper deposits were discovered between 1990 and 2023 (S&P 2023). These deposits contained 1.315 billion tonnes of copper, but only 14 of the 239 deposits

were found after 2013. However, global exploration has grown by average of 5.0% annually since 2015 (Figure 11.3).

Global average grades of copper reserves have fallen by about 1.1 % since 2015 (Figure 11.4). Average reserve grades in established mining nations — such as Australia, Canada, Chile — have fallen by about 1.0%. Peru has experienced an even bigger fall (of 1.5%) over the same period. In contrast, the DRC has been able to maintain higher ore grades due to major untapped reserves.

With falling ore grades and fewer new discoveries, major miners are seeking mergers and acquisitions to secure access to copper deposits. Examples include BHP's attempt to take over Anglo American in May 2024, and Rio Tinto's merger talks with Glencore in late 2024.

Global refined copper output to increase, led by China and the DRC

Refined copper output grew by 2.5% in 2024, reaching about 28.1 Mt (Figure 11.5). In China, the world's largest producer, output rose 3.6% from 12.9 Mt in 2023 to 13.5 Mt in 2024, accounting for almost 48% of global refined output. Refined output in rose by 2.2% in the EU to 3.8 Mt and by 10.6% in the DRC to 1.9 Mt in the same period.

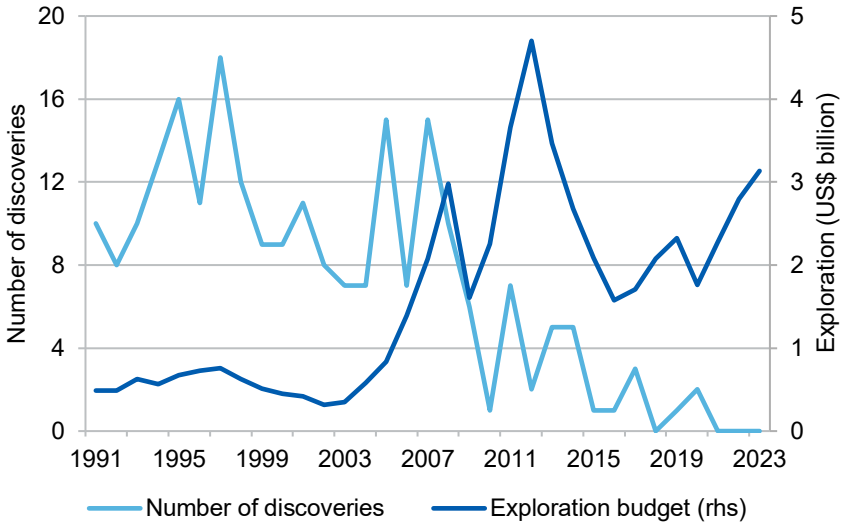
Refined output is expected to remain healthy in the Americas. Chile's refined output was 1.9 Mt in 2024 and is expected to exceed 2.0 Mt by 2027 before easing as mine production levels out. Peru's refined output is projected to stay at about 0.4 Mt through to 2030. Refined output in the US and Mexico is expected to be steady through to 2030 at about 0.9 Mt and 0.4 Mt per annum, respectively.

Global refined copper production is projected to grow by an average 2.8% annually through to 2030, reaching 33.2 Mt. This output expansion will be driven by increased production in China and the DRC.

Increase in scrap supply expected over the outlook period

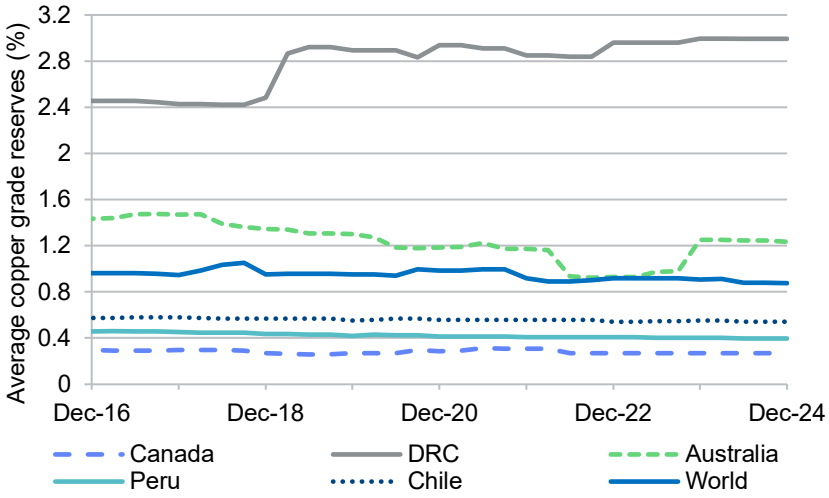
Secondary refined copper production reached 4.6 Mt in 2024; a 2.1% increase compared to the previous year (Figure 11.6). Secondary output accounted for 16% of global refined copper production.

Figure 11.3: Global number of discoveries via exploration budget



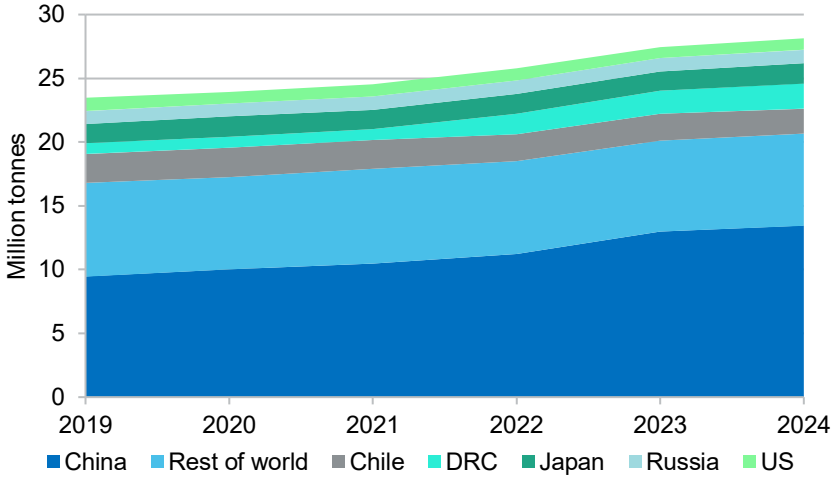
Source: S&P (2025), DISR (2025)

Figure 11.4: Average grade of global copper reserves



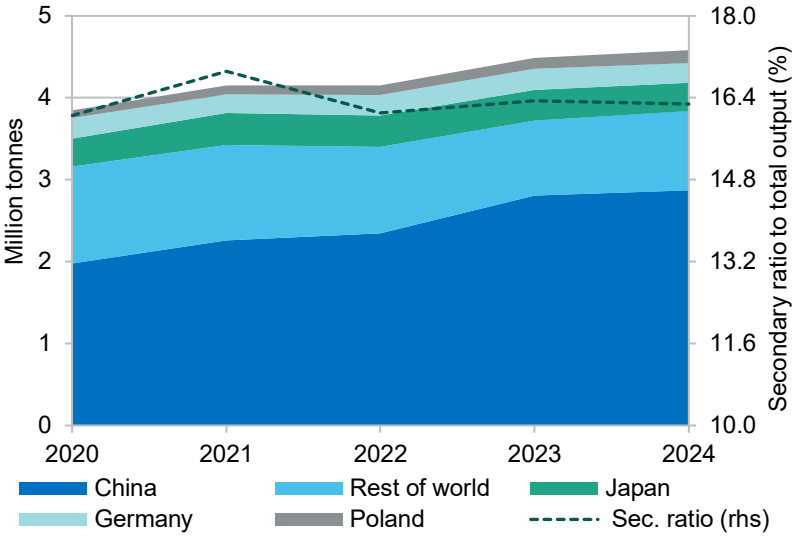
Source: S&P (2025), DISR (2025)

Figure 11.5: Global refined copper production



Source: World Bureau of Metal Statistics (2025), Department of Industry, Science and Resources (2025)

Figure 11.6: Global secondary copper production



Source: International Copper Study Group (2025), Department of Industry, Science and Resources (2025)

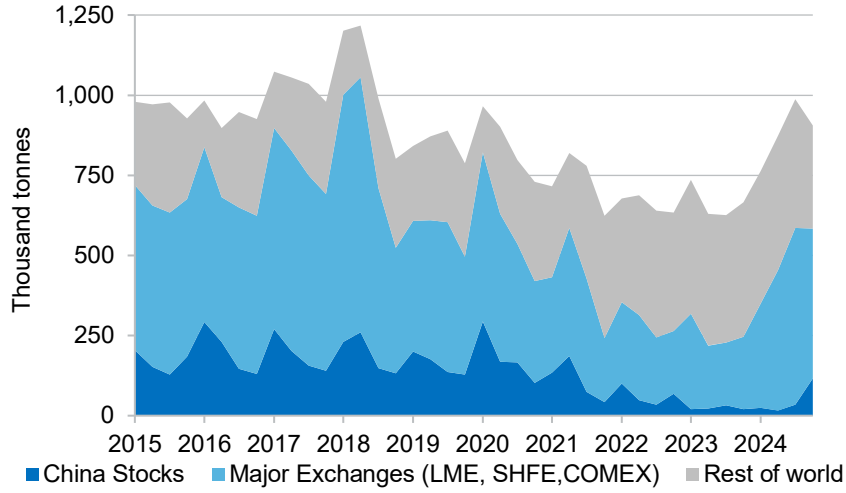
China's secondary copper production grew by 2.4% in 2024, reaching 2.9 Mt to make up around 63% of global scrap production. China expects to lift its secondary copper output to 3.5 Mt by 2030. Japan and Germany each produced 0.3 Mt and 0.2 Mt of secondary refined copper in 2024, marking a decline of 7.5% and 4.8%, respectively, compared to 2023.

Inventories have declined and are expected to remain low

Major exchange inventories (LME, Shanghai Futures Exchange, COMEX) fell by 15% and global inventories dropped by 20% in December quarter of 2024 compared to the previous quarter (Figure 11.7). Refined copper stocks in China rose from 34 kt in the September quarter 2024 to 115 kt in December quarter 2024. The rise in inventories was likely fuelled by some precautionary stockpiling due to trade policy uncertainty.

Over the outlook period, inventories are projected to decrease gradually and remain low. The fall can be attributed due to increased demand and relatively tight concentrate market. This reduction in inventory levels is expected to support rising prices through 2030.

Figure 11.7: Global copper inventories



Source: Bloomberg (2025); Department of Industry, Science and Resources (2025)

11.4 Prices

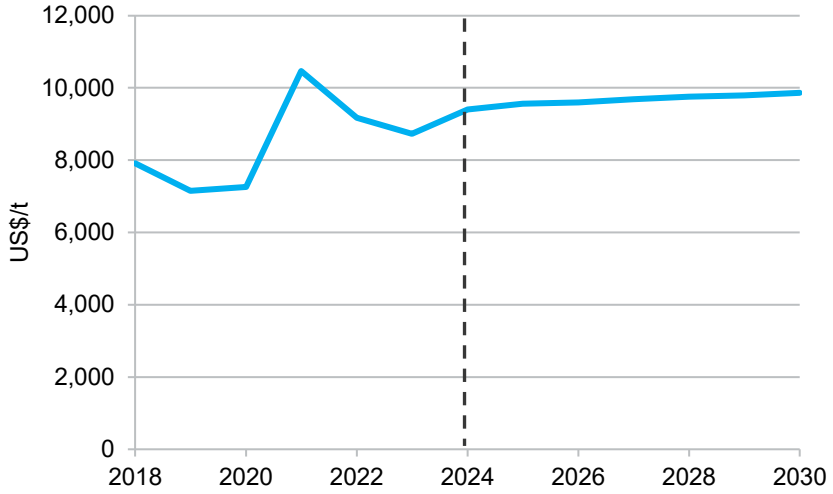
Global copper prices expected to rise over the outlook period

Copper prices fell during the December quarter 2024, as the market expressed disappointment over the extent of Chinese government stimulus measures. Prices then rebounded (by about 11%) in early 2025 to reach a peak of US$9,734 a tonne in early March. The price surge was brought about by renewed demand from China, the US and India.

The differential between Commodity Exchange (COMEX) and London Metal Exchange (LME) copper prices widened sharply in February as the prospect of US import tariffs strengthened. In mid-February, the premium of COMEX copper prices over LME prices reached US$1,128 a tonne, compared to US$548 a tonne in January.

Over the outlook period, prices (in real terms) are expected to rise to about US$9,875 a tonne (Figure 11.8) in 2030. Price rises are expected due to high demand for low emission technologies, rising data centres, and ongoing urbanization. A tight concentrates market will support price gains.

Figure 11.8: Refined copper price (real)



Source: LME (2025), Department of Industry, Science and Resources (2025)

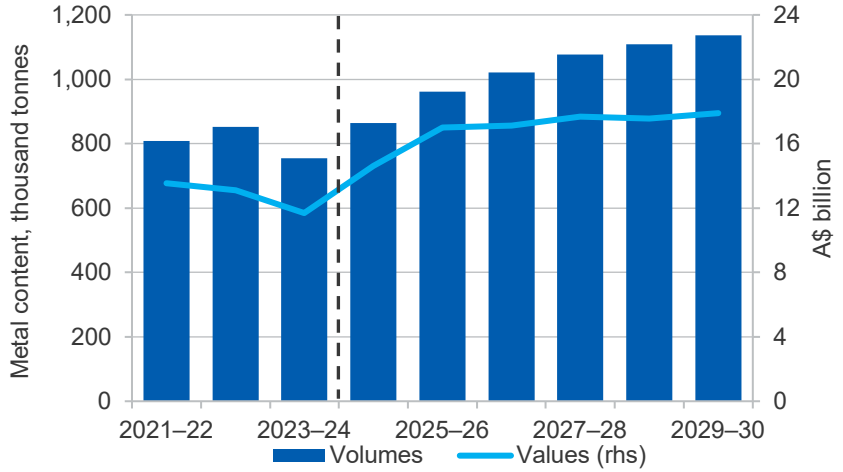
11.5 Australia

Australia's output capacity is rising as new mines boost export earnings

Export volumes are forecast to reach 865 kt in 2024–25 (Figure 11.9), a downward revision of 6.4% from the December 2024 REQ. The revision is due to reduced production guidance from major producers such as BHP. Export earnings are expected to reach $14.6 billion in 2024–25, up 25.5% compared to 2023–24, and grow to $16.9 billion in 2025–26, driven by higher forecast output volume coupled with price gains.

Over the rest of the outlook period, earnings are projected to grow by an average 7.3% annually, to reach $17.9 billion (in real terms) by 2029–30.

Figure 11.9: Australia's copper export volumes and values



Source: ABS - International Trade in Goods and Services (2025), Department of Industry, Science and Resources (2025)

Mine production is forecast to continue to grow

Australian mine production is projected to grow by 3.8% per annum over the outlook period, to reach 992 kt in 2029–30. Over the same period, Australian refined output is expected to grow by an average of about 1.6% per annum. The projected growth in both mined and refined output will be driven by expansion at existing mines and ramp-ups at new mines.

BHP's Copper South Australia operations experienced a 6% production drop in the first half of 2024–25 due to a two-week power outage caused by a severe storm in October 2024. Strong performance in December 2024 indicates a stable ramp up after the shutdown due to power outage.

According to BHP, at Carrapateena, Crusher 2 was commissioned in H2 2024, boosting production. As a result, output in the December quarter 2024 rose by 12% compared to the same period in 2023 and reached 17.1 kt. The company plans to continue to invest in processing capacity to enable an uplift in throughput to 7 Mt per annum of mined ore. The Block Cave Expansion, expected to lift throughput to 12 Mt per annum, is set to ramp up from 2028–29. At Olympic Dam, a US$200 million investment in underground development has been approved. The Southern Mining Area Decline (SMAD) project will add up to 2.5 Mt per annum of additional vertical capacity to Olympic Dam, with completion expected in 2027–28. The Prominent Hill expansion project is around 70% complete, with operations expected to commence in the second half of 2026–27.

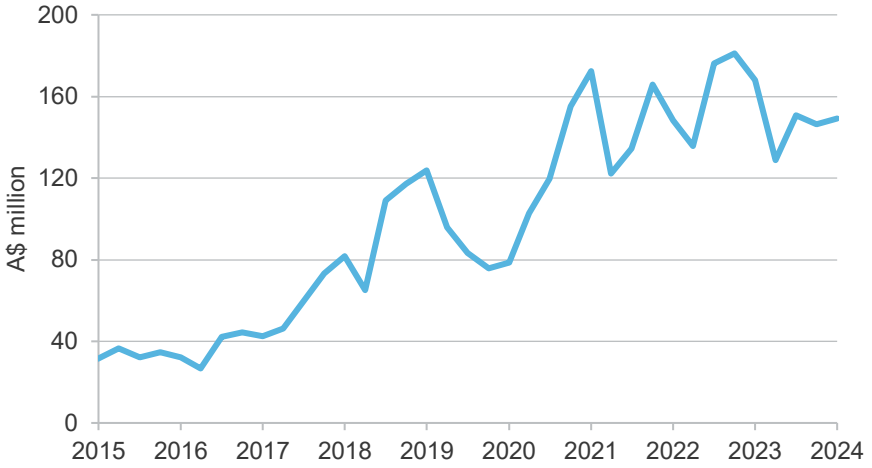
Several small and medium-sized projects are expected to commence operating in the outlook period. Collectively, these projects are expected to add around 70 kt of production capacity per annum.

Glencore will close the Mount Isa underground copper mines in H2 2025, due to declining ore quality. As a result, Australian concentrate output will be impacted negatively by around 5.0% per annum at least in the next two years until new capacity come online. The copper smelter in Mount Isa and the Townsville refinery will operate until 2030, pending approval for additional investment to rebrick the smelter. The decision on whether to rebrick the smelter is likely to be made in H1 2025.

Copper exploration decreased in 2024

Copper exploration expenditure increased by 1.9% in the December quarter 2024. 2024 expenditure was $575 million, down around 13% compared with 2023. Exploration expenditure appears to have levelled off in recent years after rising strongly in the 2018-2021 period (Figure 11.10).

Figure 11.10: Australian copper exploration



Source: ABS – Mineral and Petroleum Exploration, Australia (2025).

Revisions to the outlook

Since the December 2024 *Resources and Energy Quarterly*, the forecast for Australia's copper export earnings in 2024–25 has been revised down by 4.3%, due to a drop in production guidance. However, export earnings in 2025–26 have been revised up by around 7.3% from $15.7 billion to $16.9 billion mainly due to higher refined exports and forecast prices.

Export earnings in 2028–29 are projected at $19.2 billion (nominal terms). This is virtually unchanged from the March 2024 *Resources and Energy Quarterly*.

Table 11.1: Copper outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Production									
– mine	kt	22,930	23,274	23,972	24,691	25,432	26,195	26,195	2.2
– refined	kt	28,137	29,035	29,819	30,714	31,525	32,470	33,185	2.8
Consumption	kt	28,610	29,070	29,864	30,734	31,597	32,504	33,217	2.5
Closing stocks	kt	988	953	909	888	816	782	749	-4.5
– weeks of consumption		1.8	1.7	1.6	1.5	1.3	1.3	1.2	-6.9
Prices LME									
– nominal	US$/t	9,144	9,566	9,797	10,101	10,380	10,645	10,958	3.1
	USc/lb	415	434	444	458	471	483	497	3.1
– real[b]	US$/t	9,327	9,566	9,600	9,694	9,754	9,796	9,874	1.0
	USc/lb	423	434	435	440	442	444	448	1.0
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR[r]**
Mine output	kt	795	746	747	793	866	947	992	3.8
Refined output	kt	451	423	440	462	483	489	495	1.6
Exports									
– ores and concs[c]	kt	1,250	1,577	1,841	1,985	2,123	2,224	2,310	10.8
– refined	kt	396	412	440	462	483	489	495	3.8
– total metallic content	kt	753	865	962	1,021	1,077	1,108	1,137	7.1
Export value									
– nominal	A$m	11,402	14,676	17,510	18,200	18,996	19,169	20,455	10.2
– real[d]	A$m	11,690	14,676	16,942	17,129	17,442	17,171	17,876	7.3

Notes: **b** In 2024 calendar year US dollars; **c** Quantities refer to gross weight of all ores and concentrates; **d** In 2024–25 financial year Australian dollars; **f** Forecast; **r** Average annual growth between 2024 and 2030 or 2023–24 and 2029–30; **z** Projection.

Source: ABS (2025) International Trade, 5465.0; LME (2025) spot price; World Bureau of Metal Statistics (2025); Department of Industry, Science and Resources (2025)

Nickel

Australia's nickel sector

19%

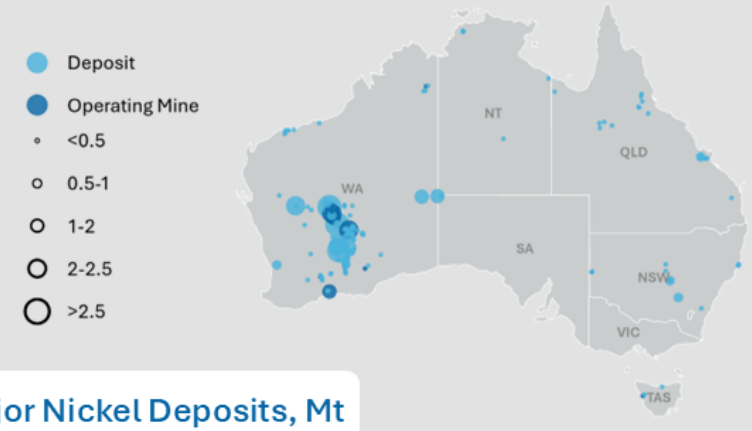
of global total resources, second largest global reserves

7th largest

nickel mined and refined producer globally in 2024

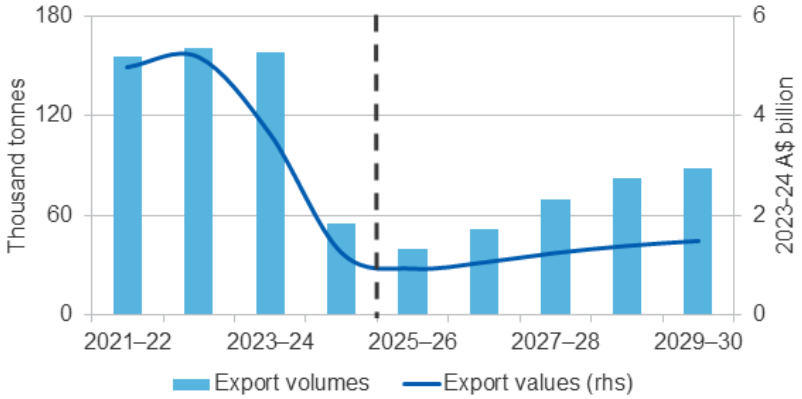
16%

of global nickel demand was for EV batteries in 2024



Major Nickel Deposits, Mt

Australia's nickel export volumes and values



Nickel prices to remain low because of global oversupply

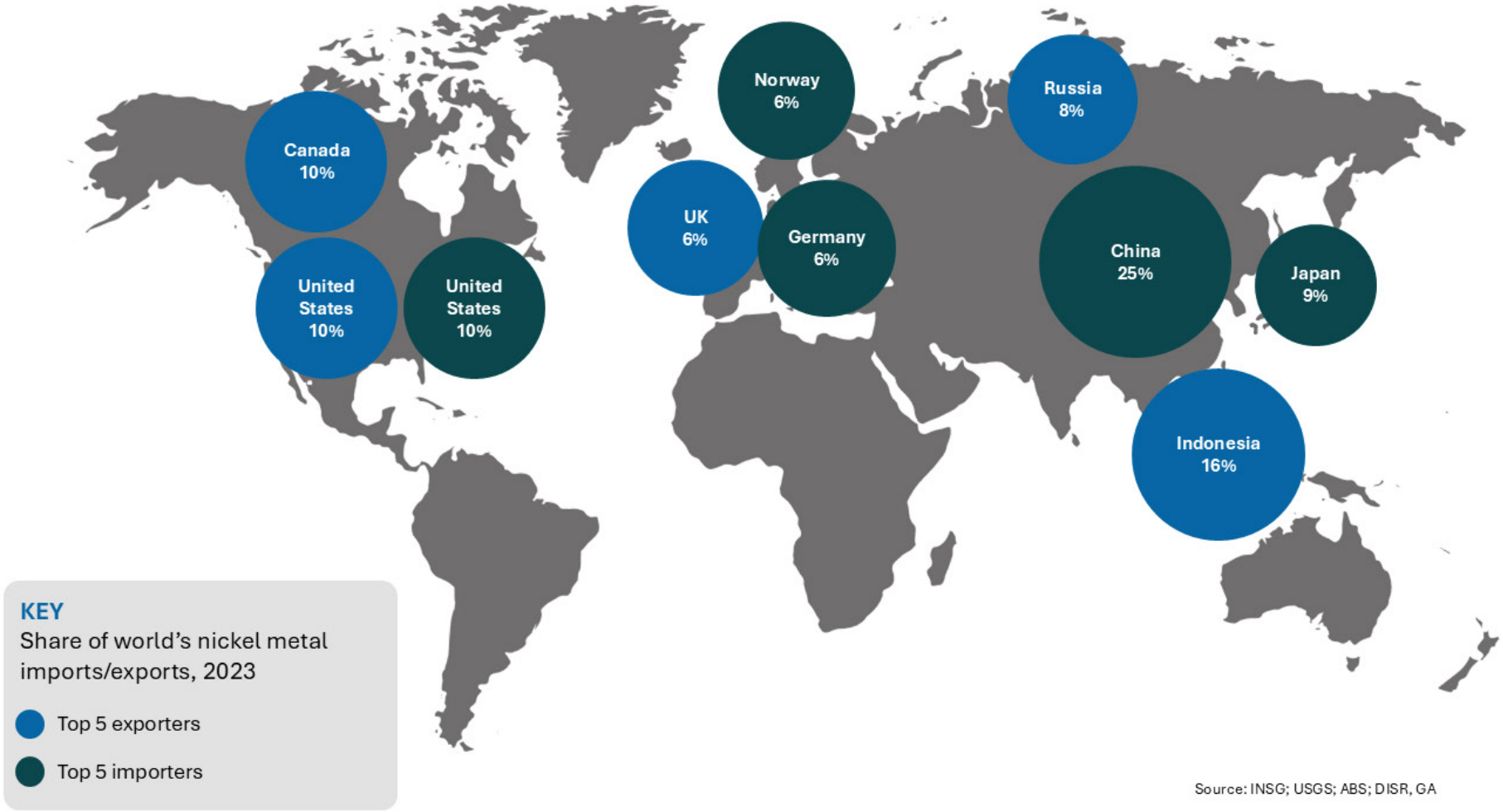
Export earnings to continue to fall, down to $0.9 billion in 2025–26 on lower prices and volumes

Australian production of mined and refined nickel to fall by around 45% in 2024-25

Ongoing demand for nickel for batteries will depend on the rate of adoption of non-nickel containing batteries

Source: INSG; USGS; ABS; DISR, GA

Nickel Trade Map



Source: INSG; USGS; ABS; DISR, GA

12.1 Summary

- Persistent growth in global refined nickel supply is expected to contain prices around US$17,000 a tonne (in real terms) for the next few years. However, easing supply growth toward the end of the outlook from major producers (like Indonesia) is expected to help reduce the current global surplus, and see prices recover to average $18,000/t by 2030.
- World nickel demand is projected to see steady growth over the outlook period, with EV batteries representing an increasing share of global end-use demand. Growth in global stainless-steel production is expected to ease from the high levels of recent years but remain a continued driver of demand to 2030.
- Weaker nickel prices and cuts to domestic capacity in 2024 are expected to see Australia's export earnings decline to $1.2 billion in 2024–25. However, a gradual improvement in prices later in the outlook period, combined with recovering production, is expected to see exports reach $1.5 billion (in real terms) by 2029–30.

12.2 World Consumption

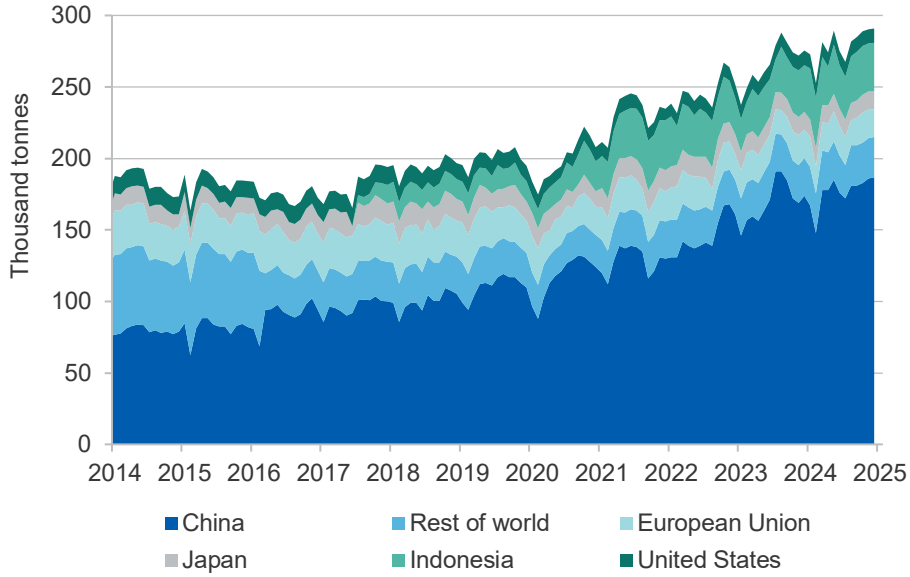
Sustained growth for world nickel demand in 2024 due to robust Asian stainless-steel production and rising EV demand

Global nickel consumption grew 5.0% in 2024, continuing a trend of strong growth seen since 2020. China continues to be the primary driver of this rise, accounting for close to two-thirds of global nickel consumption in 2024. Across other countries, Indonesia- the world's second largest nickel consumer- saw 16% growth in demand, while Japan, Europe and the US experienced low or negative growth (Figure 12.1).

Global stainless-steel output- accounting for 64% of world nickel demand in 2024- was a continued driving force for world nickel demand, growing 6.5% over the period. World stainless-steel production continues to be concentrated in China (40% of global output in 2024), with the country growing output by 7.5% over the period. China's growth owed to continued strength in infrastructure and manufacturing investment and activity, as well as a substantial expansion in its global exports of stainless-steel products. Impressive growth in stainless-steel output was also seen for emerging producers such as India (growing 11%), and Indonesia (+15%), with both countries drastically increasing domestic capacity to support future growth in their respective property, infrastructure and automotive sectors.

Demand for nickel from EV battery production grew 8% in 2024. Over the period, increasing EV sales in China followed a rising penetration rate (rising 10% points), and offset stagnating rates in the US and EU (see Lithium chapter). Expansion of EV vehicle production has seen the sector's share of total nickel demand reach 16% in 2024, from 5% in 2018. However, the increasing adoption of LFP batteries (which do not use nickel as an input) and growing deferment of battery-related projects worldwide in recent months has continued to weigh on market sentiment for battery-related nickel demand heading into 2025.

Figure 12.1: World nickel demand



Source: International Nickel Study Group (2025); Department of Industry, Science and Resources (2025)

World nickel demand to grow, supported by emerging industrial demand and substantial growth in total battery demand

World nickel demand is projected to grow 5.4% annually over the outlook period. This is expected to follow sustained growth in global stainless-steel production (particularly from emerging producers) and accelerating demand for battery metals and nickel precursors.

Global stainless-steel production is projected to grow at an average annual growth rate of 5.5% to 2030. This will be driven by rising production in China (albeit at a slower rate than recent years), with continued investment in the country's infrastructure and manufacturing sectors expected to provide a persistent driver of demand.

India is also expected to be a major contributor to global stainless-steel output, with the country's investment in large scale infrastructure spending and construction projected to spur a boom in demand over the remainder of the decade. This could see India compete with China as the world's largest stainless-steel producer early in the 2030s. Indonesia's burgeoning stainless industry is also expected to support higher levels of global output over the outlook period (see Figure 12.2)

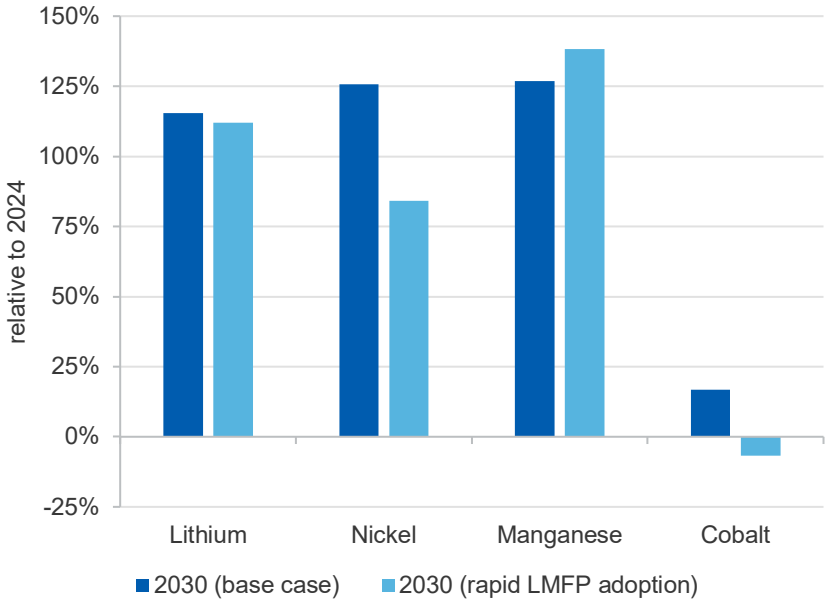
Consistent with recent IEA projections, global battery demand is projected to triple between 2024 and 2030, prompted by the ongoing mass deployment of EVs and battery energy storage systems. This is expected to lead to significant growth in nickel demand from this end-use both in absolute terms, and as a share of total nickel demand. World nickel use in batteries is expected to more than double over the outlook period, rising to close to 30% of total end demand in 2030.

This rise will come despite several ongoing challenges for nickel use in batteries, including technological innovation reducing the amount of nickel required in each battery and competing battery chemistries. Non-nickel batteries (like LFP) represented nearly 50% of the world market in 2024. Nickel demand from batteries to 2030 will heavily depend on the extent to which non-nickel battery chemistries continue to gain market share in coming years.

Commercialisation of lithium manganese iron phosphate (LMFP) batteries, a higher energy density variant of LFP batteries, with Chinese companies making large investments into LMFP production, including battery maker CATL, currently constructing a 120 GWh LMFP manufacturing facility in Sichuan. However, the increasing bifurcation in the global battery supply chain could limit uptake in the US and the EU.

Given the uncertainty in the rate of adoption, an alternative scenario is presented, considering a more rapid uptake of these battery types (Figure 12.2). The increasing adoption of LFP batteries (which do not use nickel as an input) and growing deferment of battery-related projects worldwide in recent months is expected to present an ongoing risk to battery-related nickel demand over the outlook period.

Figure 12.2: Battery demand for minerals under different scenarios



Notes: In the base case, lithium-nickel is expected to make up 42% of EV battery market by 2030, while in the rapid adoption case, it is expected to fall to 32%.
Source: Department of Industry, Sciences and Resources (2025)

The base case (on which final projections are modelled) assumes a sustained demand for nickel battery types, particularly for high performance and long-haul EVs, as well as the ongoing shift to higher nickel content in batteries (for example, Tesla's primarily nickel-based NMC 955 composition). Under the rapid LMFP adoption scenario, displacement of lithium nickel chemistries results in lower demand growth for nickel- at 84% compared to growth of 126%- in the base case scenario by 2030.

12.3 World Production

Growth in global supply slowed in 2024, on moderating Indonesian growth and ex. Indonesia global closures

World mined production grew 2.4% in 2024, a slowdown from growth of 15% in 2023. Production cuts in Australia, New Caledonia and Madagascar offset Indonesian output growth. Indonesian production accounted for 62% of global mined nickel supply in 2024.

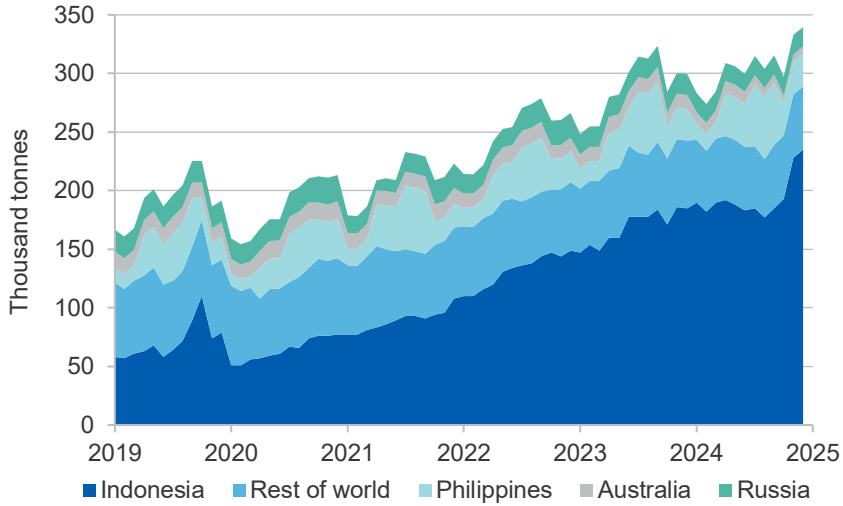
Growth in Indonesia's mined nickel output has slowed. Indonesia's mined output grew at close to 15% in 2024, compared to almost 50% in 2022. This deceleration coincides with the nation's introduction of a revised permitting (quota) system for mining permits. Amongst other major producers, falls in 2024 output were seen for Russia (7.6%), New Caledonia (50%) and Australia (32%). Despite more modest growth in global mined output, comparable refined and intermediate production continued to see more rapid expansions in 2024, rising 5.0% and 18% respectively (Figures 12.3 and 12.4).

A large share of the increases came from Indonesia, with refined output growing 14% and intermediate output growing 33% over the period. This appears to be part of a growing trend, with Indonesian matte and MHP production having grown as a percentage of Indonesian total nickel exports over the last few years. China – the world's second largest produced of refined nickel- also saw 6.1% growth over the period.

Market surpluses expected to narrow in the latter half of the outlook, but will remain geographically concentrated

A continued ramp up of mined and refined supply capacity in major producers Indonesia and China is expected to contribute to strong growth mined and refined nickel production over the outlook period (Figure 12.5). This includes ramp up of new mines such as PT Vale's 120 kt per year Pomalaa block mine (to be integrated with Zhejiang Huayou Cobalt's downstream HPAL facility) as well as existing projects such as Weda Bay (with an estimated capacity of 500kt per year).

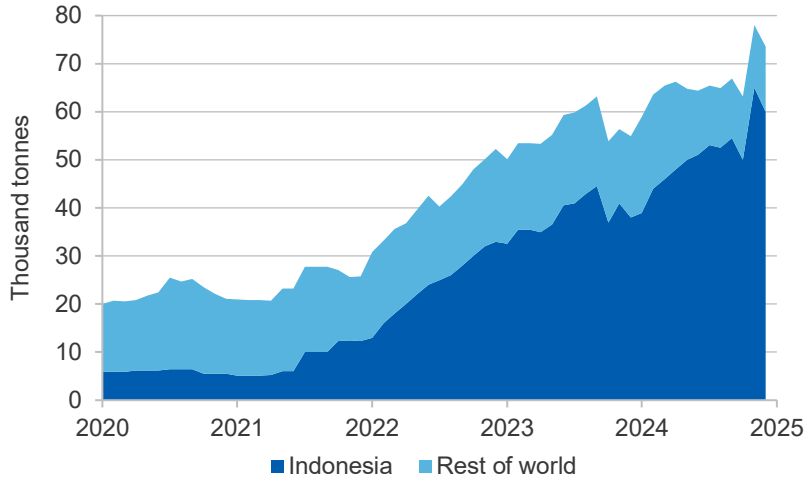
Figure 12.3: World mined nickel production



Source: International Nickel Study Group (2025); Department of Industry, Science and Resources (2025)

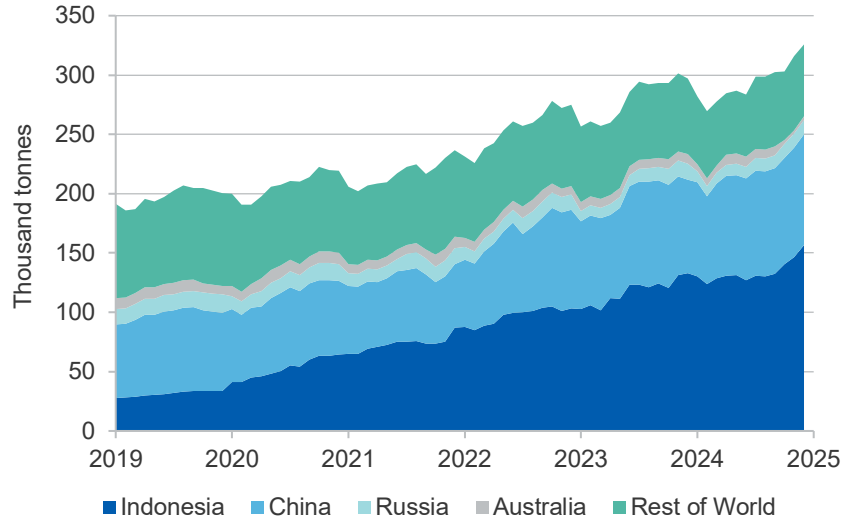
Indonesia is also expected to take a larger role in global refined production. While China accounts for 76% of global nickel sulphate production presently, this global share is projected to decline to 68% by 2027 as Indonesian capacity comes online. This is on the expectation that new plants in Indonesia (for example Excelsior, which will have optionality for nickel metal or MHP) will produce new sulphate capacity.

Figure 12.4: World intermediate nickel production



Source: International Nickel Study Group (2025); Department of Industry, Science and Resources (2025)

Figure 12.5: World refined nickel production



Source: International Nickel Study Group (2025); Department of Industry, Science and Resources (2025)

With prices now about US$16,000 a tonne, the profitability of downstream processing and refining remains a key risk to the continued expansion in global supply in 2025 and further into the outlook period. PT Gunbuster- one of Indonesia's largest nickel smelters- was reported to have cut production in early 2025 due to low prices and tight supply of mined ore. Further cuts to supply would be expected to accelerate the reduction in the global oversupply projected for later in the outlook period.

There is more reason to expect tighter global balance in the latter half of the outlook period (2028-2030): whist Indonesia has raised its production quota for 2025, profitability and declining ore grades are expected to act as natural constraints on the continued expansion of mine and refining capacity over the longer term.

12.4 Prices

Nickel prices fall steadily in 2024, despite some volatility

In terms of price, nickel was the weakest performing base metal in 2024, with the annual average LME price falling 22% year-on-year to $16,812 a tonne. This fall came despite substantial output cuts across key global producers, robust global nickel demand, and recent positive macroeconomic catalysts (such as Chinese monetary stimulus measures and ongoing Inflation Reduction Act spending).

Excess global supply remained the dominant factor for nickel prices in 2024. Substantial rises in global mine and refined production capacity in 2024 contributed to an estimated global surplus of about 170 kt in 2024, with noticeable inventory gains on both nickel exchanges (Figure 12.6).

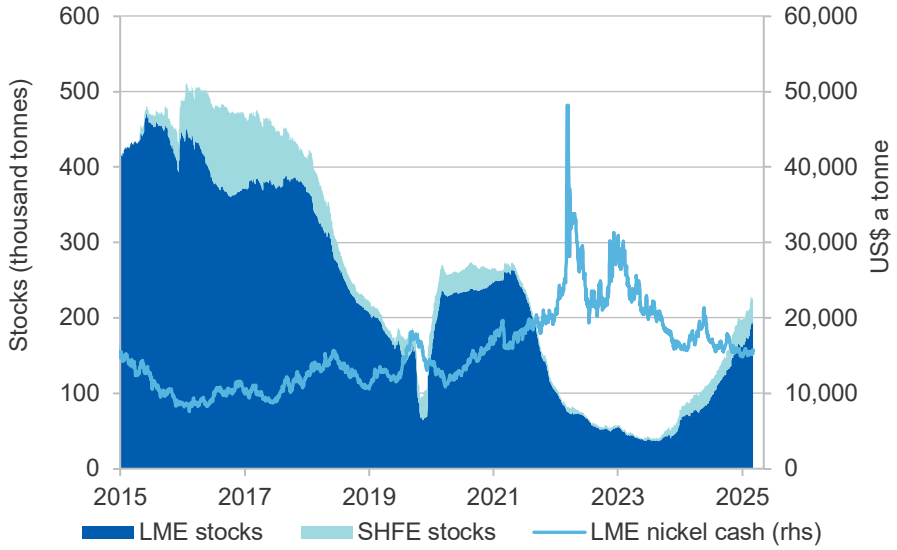
So far in 2025, the benchmark nickel price has remained about US$16,000 a tonne. Despite market expectation of a reduced allocation of mining permits in Indonesia in 2025, the announced quota is expected to represent a 10% rise on its 2024 level. This follows ongoing reporting of tight ore supplies by the country's major downstream smelters. With solid growth in capacity projected for both mine and refined global supply this year, the average price is expected to average around US$16,000 a tonne in 2025.

Prices may recover modestly as market surpluses narrow late in the outlook period

Strong supply growth in both mined and refined global supply to 2027 is expected to contain prices below US$17,500 a tonne (in real terms) over the period. However, the current low prices, and potential for induced supply cuts in even major producers such as Indonesia remain a potential catalyst for rising prices over the period.

Beyond 2027, more modest growth in production capacity, as well as ongoing strength in global demand (particularly from emerging end uses like batteries) is expected to contribute to a reduced global oversupply and recovery in prices. The benchmark nickel price is expected to average around US$18,000 a tonne (in real terms) by 2030.

Figure 12.6: Nickel spot price and stock at exchanges



Source: LME (2025); Department of Industry, Science and Resources (2025)

12.5 Australia

Higher prices may support improved industry conditions by 2030

Production cuts announced in 2024 are expected to see Australia's mined and refined output fall by around 45% in 2024–25. This includes the suspension of First Quantum Minerals' Ravensthorpe mine, the Wyloo Kambalda mines, and BHP's integrated Nickel West operations. Total production is also expected to see a further, minor fall in 2025–26 as cuts take effect across the full financial year.

Despite several project suspensions in 2024, there remains a robust pipeline of projects under development targeting commercial production within the outlook period. This includes new projects aimed at intermediates like mixed hydroxide precipitate (MHP) and nickel and cobalt sulphate that could feed into the fast-growing battery-cathode market. Higher prices in the latter half of the outlook period will likely coincide with the progression and start of greenfield projects.

Similarly, mines placed into care and maintenance are expected to face an improved operating environment. BHP expects to review its decision to close Nickel West in early 2027. Australian nickel output is projected to grow in the latter half of the outlook period as key projects come online.

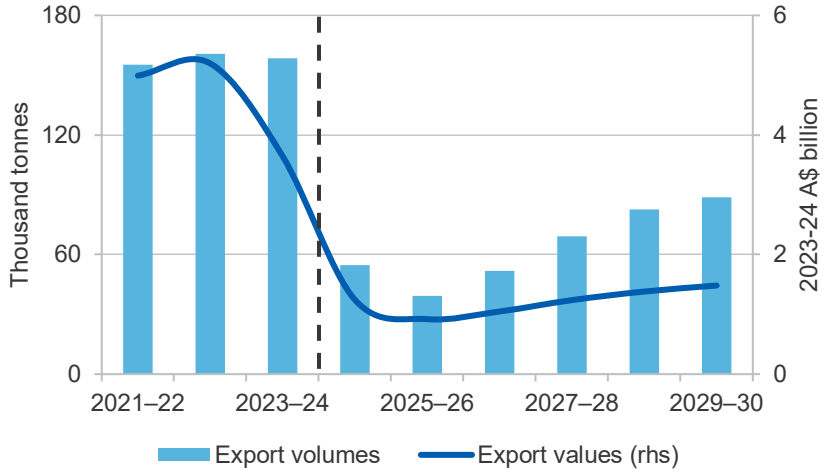
Export earnings to fall to 2025–26, but improve later in the outlook period

The persistence of weak prices and the full effect of cuts announced in 2024 are expected to see the value of Australia's nickel exports fall from $3.6 billion in 2023–24, to $1.2 billion in 2024–25 and then $0.9 billion in 2025–26 (in real terms). However, a modest recovery in prices and Australian production over the outlook will see a rebound in Australia's export values, to around $1.5 billion in 2029–30 (Figure 12.7).

2024 exploration expenditure well off highs of 2023

Nickel and cobalt exploration expenditure in Australia for 2024 was around $208 million (the ABS reports combined exploration for these two minerals given their common co-location in deposits). This was 36% lower than the previous year, and 9% lower than the comparable period in 2019 (nominal

Figure 12.7: Nickel export volumes and values



Source: ABS (2025); International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025)

Figure 12.8: Australia's nickel and cobalt quarterly exploration expenditure

Source: ABS (2025)

terms) (Figure 13.8). This reflects the challenging conditions experienced in the development pipeline for both minerals, due to recent weak global prices (see Prices section and Other Critical Minerals chapter).

Revisions to the outlook

Forecast export earnings for 2024–25 (in nominal terms) have been cut by $0.2 billion from the December 2024 *Resources and Energy Quarterly* (REQ). This reflects impact of the Forrestania mine entering care and maintenance in September 2024. Compared with the March 2024 REQ, forecast Australian earnings in 2028–29 (in nominal terms) have also been revised down, by $2.7 billion. This follows lower projected prices, as well as significant cuts to Australian production that occurred through 2024.

Table 12.1: Nickel outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Production									
– mine	kt	3,776	4,014	4,242	4,460	4,580	4,587	4,620	3.4
– refined	kt	3,528	3,830	3,992	4,250	4,390	4,500	4,600	4.5
Consumption	kt	3,354	3,540	3,804	4,110	4,320	4,450	4,590	5.4
Global balance		174	289	188	140	70	50	10	
Closing stocks	kt	1 030	1 319	1 507	1 647	1 717	1 767	1 777	9.5
– weeks of consumption		16	19	21	21	21	21	20	3.9
Prices LME									
– nominal	US$/t	16,825	16,317	17,375	17,775	18,600	19,175	20,125	3.0
	USc/lb	763	740	788	806	844	870	913	3.0
– real [b]	US$/t	17,162	16,317	17,026	17,059	17,479	17,645	18,134	0.9
	USc/lb	778	740	772	774	793	800	823	0.9
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR**
Production									
– mine [c]	kt	133	62	59	64	75	92	98	-5.0
– refined	kt	93	87	48	39	42	48	56	-12.4
– intermediate	kt	38	42	5	0	3	7	12	-15.7
Export volume [dg]	kt	158	55	39	52	69	83	89	-9.2
Export value[g]									
– nominal value	A$m	3,557	1,244	951	1,114	1,348	1,542	1,696	-11.6
– real value [e]	A$m	3,646	1,244	920	1,048	1,238	1,381	1,482	-13.9

Notes: **b** In 2025 calendar year US dollars; **c** Quantities refer to gross weight of all ores and concentrates; **d** In 2024–25 financial year Australian dollars; **f** Forecast; **r** Average annual growth between 2024 and 20230 or 2023–24 and 2029–30; **z** Projection.
Source: ABS (2025) International Trade, 5465.0; LME (2025) spot price; World Bureau of Metal Statistics (2025) World Metal Statistics; Department of Industry, Science and Resources (2025)

Zinc

Australia's zinc sector

40%

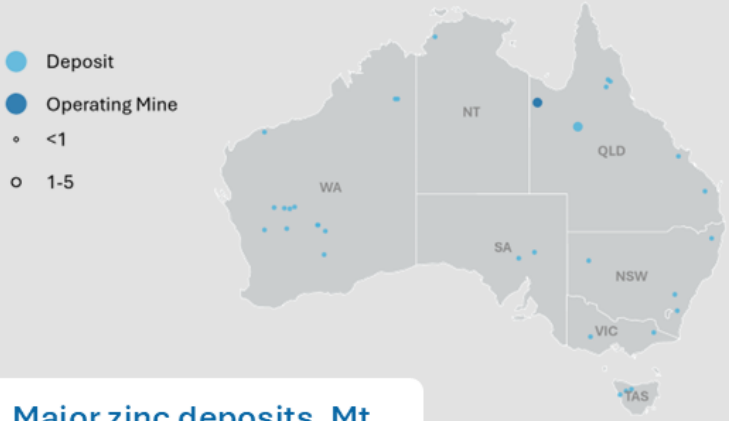
of ores and concentrate production refined domestically

28%

of the world's known zinc resources

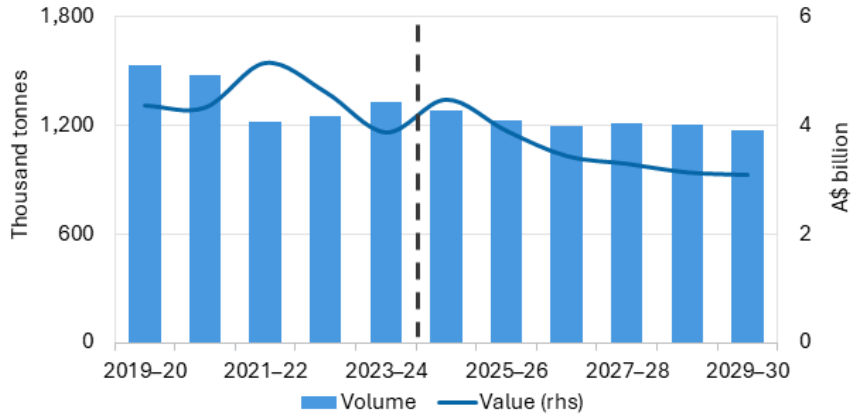
430,000 tonnes

of refined zinc produced at Townsville and Hobart smelters in 2023–24



Major zinc deposits, Mt

Australian zinc exports

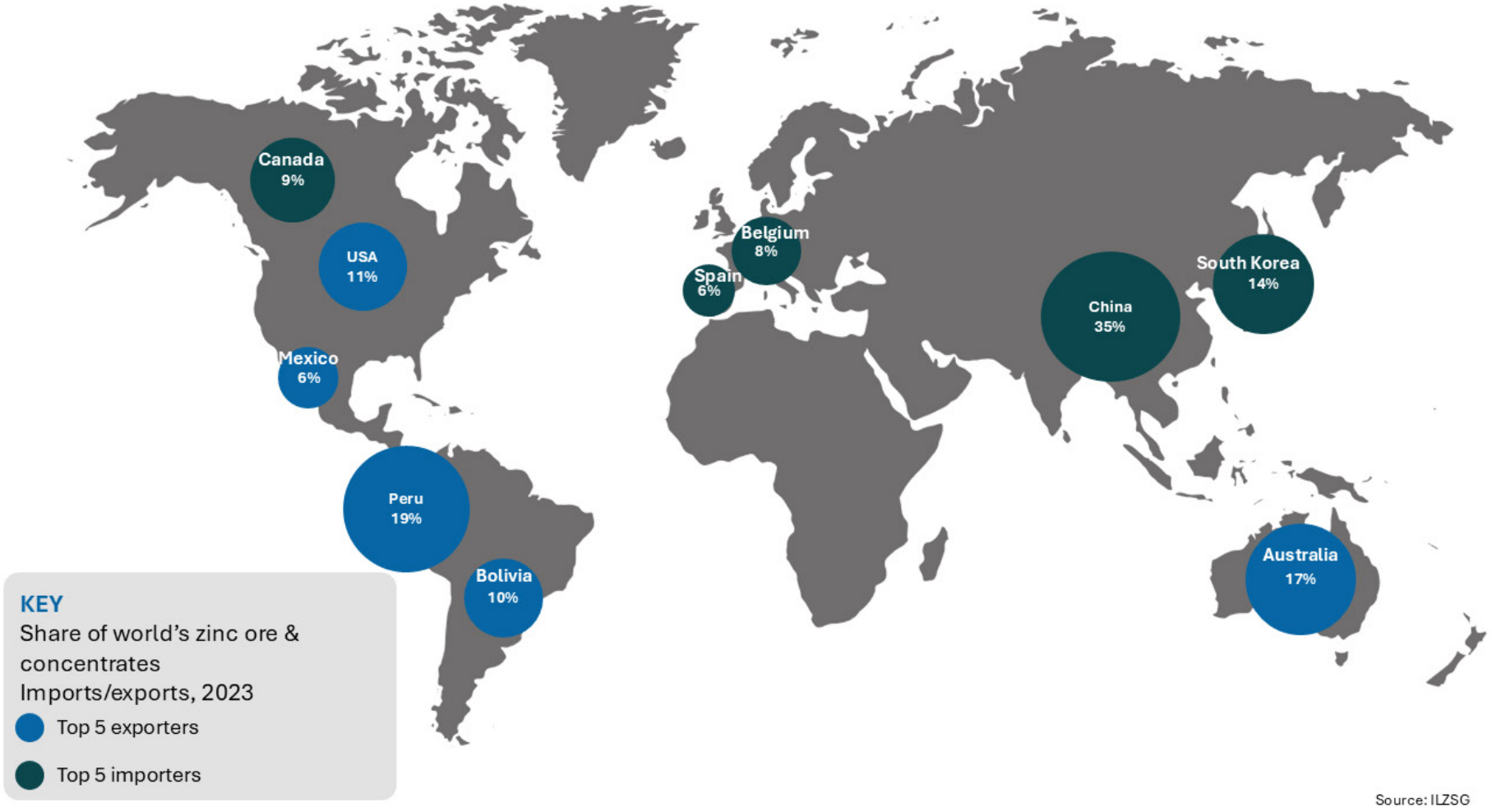


Outlook

- Zinc prices expected to lift from growing demand
- Earnings to ease as mine output drifts down
- Production expected to slow as output from older mines tapers
- Exploration spending reduced over 2024 than the peak of the December quarter 2023

Source: GA; DISR; OCE

Zinc trade map



13.1 Summary

- Prices are forecast to average US$2,800 a tonne in 2025, decreasing to US$2,600 a tonne by 2027 before recovering to US$2,700 a tonne (in real terms) by 2030. Growth in later years is expected to be driven by demand for galvanised steel in manufacturing and construction.
- Global zinc demand is projected to grow at an average annual rate of 2.1%, reaching 15.4 Mt by 2030, with Asia leading this growth.
- Australian zinc exports are forecast at $4.5 billion and $3.9 billion in 2024–25 and 2025–26. Export earnings are projected to ease to $3.1 billion (real terms) by 2029–30.

13.2 World demand

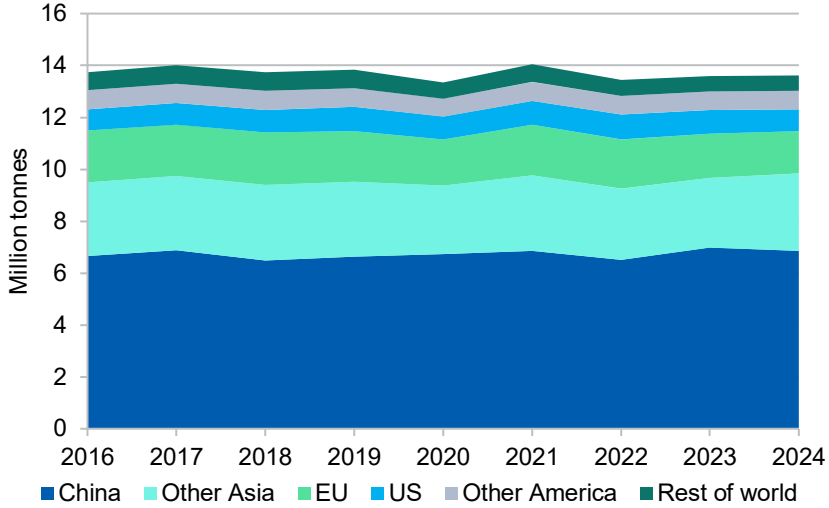
Global demand increases driven by Asian manufacturing and construction

Global refined zinc demand was flat at 13.6 million tonnes (Mt) in 2024 (Figure 12.1). In Asia- which accounts for around 72% of global demand- demand grew by 2.0% to 9.8 Mt. Chinese demand fell by 2.0% to 6.8 Mt in 2024 mainly due to challenges in the property sector and raw material shortages affecting smelters. Despite this, China still accounts for 50% of global usage. Meanwhile, demand in India and South Korea rose by 10% and 26%, reaching 0.8 Mt and 0.5 Mt. This was mainly due to healthy activity in the construction and automotive sectors.

In the Americas, overall demand fell. The US and Canada saw 8.0% and 14.5% falls in zinc demand, respectively. Demand grew in Mexico by 9.4% and in Brazil by 5.1%. The EU saw a 4.0% fall in zinc demand in 2024, as the manufacturing and construction sectors contracted, cutting zinc usage.

Global zinc demand is projected to grow modestly at an average 2.1% over the outlook period, reaching 15.4 Mt by 2030. Growth will be mainly driven by investment in manufacturing and construction sectors. The global energy transition will have mixed impacts on zinc demand. While renewable energy infrastructure and construction will boost zinc demand, the rise of electric vehicles may cut demand, as automakers shift to lighter materials like aluminium and composites to lift vehicle efficiency.

Figure 13.1: Global zinc demand



Source: International Lead Zinc Study Group (2025); Department of Industry, Science and Resources (2025).

In China, despite a slowdown in galvanised steel production, recent policy measures aimed to stimulate industrial production. These measures include expanding consumer goods trade-in programs (covering 12 categories of home appliances), and 15-20% subsidies on sales prices. Increased purchases of durable home appliances such as fridges, dishwashers, washing machines and food mixers, could increase zinc die casting alloys consumption. China's car trade-in program has also been broadened to include more passenger vehicles. The connection of new renewable projects to the electricity grid will drive additional zinc demand for transmission infrastructure, supporting demand from post-fabrication galvanisers to 2030.

US zinc import demand is likely to continue falling from the 931 kt high in 2015. US galvanised steel imports have also fallen over the past decade; US galvanised steel imports declined from 18% of consumption in 2015 to 12% in 2023. However, since 2015, refined zinc production in the US has risen by 3% annually, primarily driven by secondary production, which has

grown by 12% per annum over the same period. This growth in production appears to be replacing part of its galvanised steel sheet imports.

In the EU, refined zinc demand has fallen by 2.4% annually over the past decade, from 2.5 Mt to 1.9 Mt. However, Western Europe is now seeing some improvement in demand, with increased buyer enquiries in Spain, France and Germany. Green policy changes in the energy and transport sectors are expected to support zinc demand over the outlook period. According to the Euroconstruct, total construction output is projected to grow by 0.6% in 2025, followed by 1.8% in 2026 and 1.7% in 2027.

In 2024, India consumed 822kt (up 10% from 2023) and accounted for 6.0% of global zinc demand. Since 2015, India's zinc usage has risen by an average of 2.6% per annum and is expected to grow strongly over the period to 2030. According to the International Zinc Association, India's zinc demand is expected to reach to almost 2 Mt per annum over next decade, driven by rising urbanisation and the rising need for infrastructure.

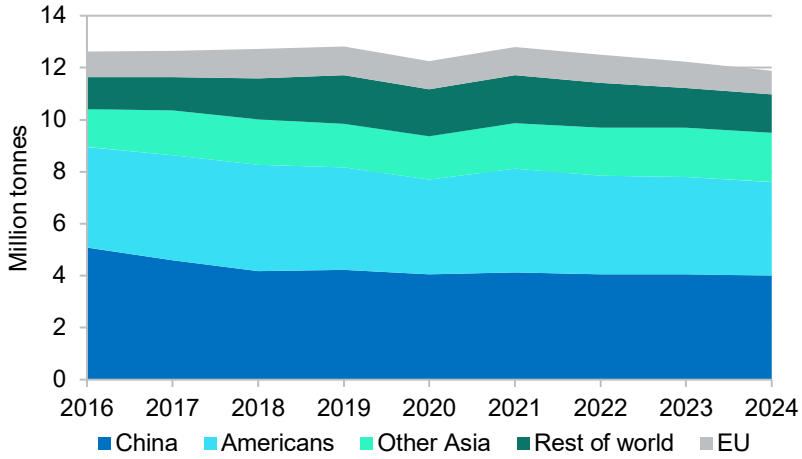
13.3 World Production

Mine output to grow over the outlook period, driven by China and Peru

In 2024, global zinc mine output reduced by 2.8% from the previous year to 11.8 Mt (Figure 12.2), primarily driven by depleted ore grades and some mines closure in 2023. Zinc mine output in Peru fell by 13.5%, as output at the large Antamina mine fell sharply due to lower grades. China's output fell by 1.5% to 4.0 Mt. The EU had a 10% fall in output, mainly impacted by temporary closure of Tara mine in Ireland and Aljustrel mine in Portugal in 2023.

Global zinc mine output is expected to grow by an average 2.4% per annum to reach 13.7 Mt by 2030. Gains will be driven by a combination of expansions at existing mines, ramp-ups at new mines and mine re-openings. Notably, the Kipushi mine in the Democratic Republic of Congo (DRC) reopened in H2 2024, with an expected annual output of 278kt in its first five years.

Figure 13.2: Global zinc mine production



Source: Department of Industry, Science and Resources (2025); International Lead Zinc Study Group (2025)

Refined zinc output to surge over the outlook period, primarily led by China

Global refined zinc output decreased by 2.6% to 13.5 Mt in 2024, mainly due to production cuts in China (3.4%), Japan (2.3%), South Korea (7.2%) and Peru (2.5%). Increases in France (1.2%), India (6.3%), and Germany (1.0%) partially offset those declines. The tight concentrate markets- due to mine closures in 2023 and 2024-impacted refined zinc output. Global production of refined zinc is forecast to rise by 2.8% to reach 13.9 Mt in 2025. Refined zinc output is then projected to rise by an average of 2.2% per annum to reach 15.4 Mt in 2030.

The limited availability of zinc concentrates cut treatment charges (TCs) and refining fees (fees paid by concentrate producers to smelters and refiners) during 2024. Zinc concentrate shortages were driven by several mine closures in 2023, and uncertainties about and the start of new projects. Coupled with expansion of smelters in recent years mainly in China, this saw TCs fall from $280 a tonne in 2023 to below $50 a tonne during 2024. Lower TCs negatively impact the profitability of smelters and refineries, however, they have been less of an issue for zinc smelters and refineries who own mines than for 3rd-party concentrate processors.

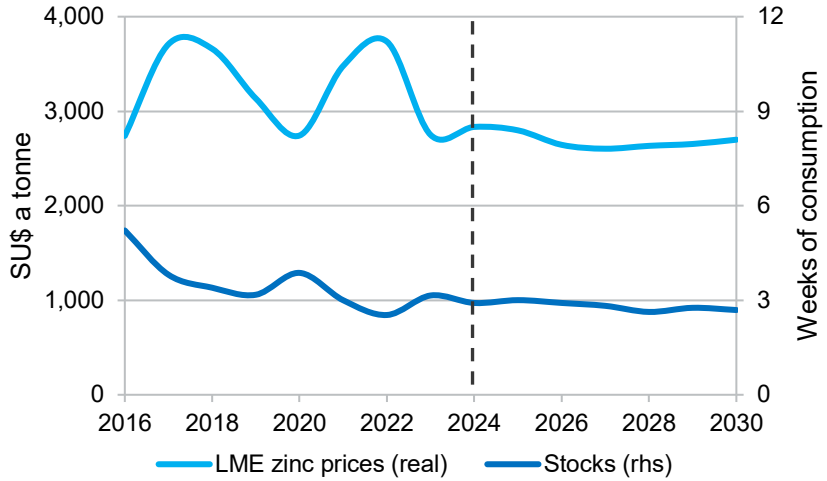
13.4 Prices

Prices should remain above 2023 lows due to market tightness

After exceeding US$3,200 in October 2024, the London Metal Exchange (LME) spot zinc price has since declined by around 12% to average US$2,805 a tonne in February 2025. Like other base metal prices, sentiment in the zinc market has been impacted by perceptions of insufficient Chinese policy stimulus measures in late 2024 and weak demand in the US and EU. However, the recent announcement of a production cut at Nystar's zinc smelter in Australia, coupled with the signs of limited concentrate markets, pushed the LME zinc price to above US$2,960 a tonne in mid-March 2025.

Zinc prices are forecast to average around US$2,800 a tonne in 2025 before declining to 2027 to US$2,600 a tonne, due to softer demand. From 2028 prices are projected to lift modestly to reach around US$2,700 a tonne by 2030 in real terms (Figure 12.3), due to higher expected demand mainly from Asia.

Figure 13.3: Zinc prices and stocks



Source: Department of Industry, Science and Resources (2025); LME (2025); International Lead Zinc Study Group (2025).

13.5 Australia

Healthy mine & refined zinc output to stabilise Australian export earnings

Australia's export volumes are forecast to reach 1,285 kt in 2024–25, a 3.2% decrease compared to the previous financial year (Figure 12.4). This decline is primarily attributed to a reduction in the refined zinc production forecast for the Nystar zinc smelter in Tasmania. On 12 March 2025, Nyrstar Australia announced a 25% production cut from April 2025 — from about 260 kt to 195 kt per annum — as profitability turned negative.

Export earnings are forecast to rise from $3.9 billion in 2023–24 to $4.5 billion in 2024–25, mainly due to an improvement in prices throughout 2024. Export earnings are projected to fall by 3.7% per annum to $3.1 billion by 2029–30 due to lower zinc concentrate production.

Mine closures are negatively impacting Australian output. The Jaguar and King Vol mines ceased production in 2023 due to operational challenges, cost inflation and softer prices, and are now in 'care and maintenance'. Glencore's Lady Loretta mine in Mount Isa will close in 2025 due to depleted mineral reserves. However, the George Fisher zinc mine in Mount Isa is expected to remain operational until at least 2036.

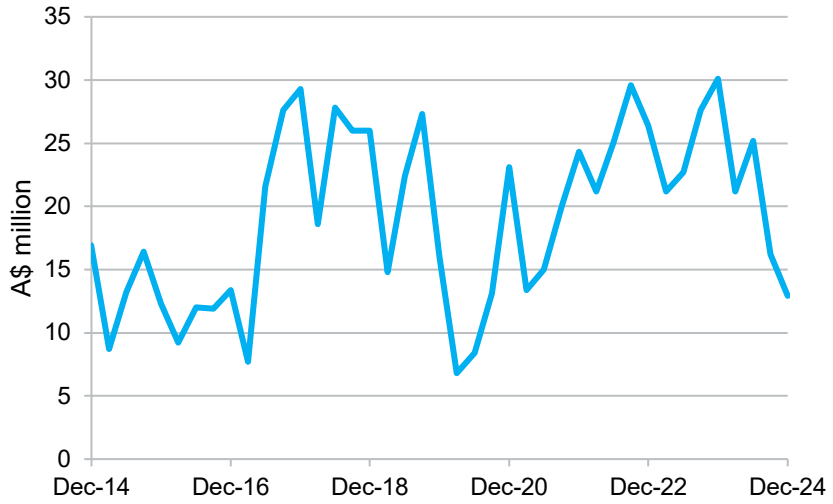
Australian mine output is forecast to reach 1,180kt in 2024–25, up 8.5% from 2023–24, driven by higher production from a number of operating mines. In 2025–26, mine output is expected to decline slightly due to the closure of Lady Loretta mine in Queensland. From 2027–28 to 2029–30, mine output is expected to ease as ore grades decline in operating zinc mines.

Australian refined zinc production is forecast to rise from 434 kt in 2023–24 to 481 kt in 2024–25. This represents an average of 1.9% annually, driven by expected increased production at Sun Metals' Townsville refinery. Following its 2021 expansion, the refinery aims to produce 270kt per annum from 2025 through 2030.

Exploration expenditure down in December quarter

Zinc, lead and silver exploration expenditure fell by 20% in the December quarter 2024 compared to the September quarter 2024. Total exploration spending for zinc, lead and silver was $76 million in 2014, down 26% compared to previous year (Figure 12.4). However, the decadal trend is still one of growth: exploration expenditure for zinc, lead and silver has shown average annual growth of 5.5%.

Figure 13.4: Australian zinc, lead and silver exploration



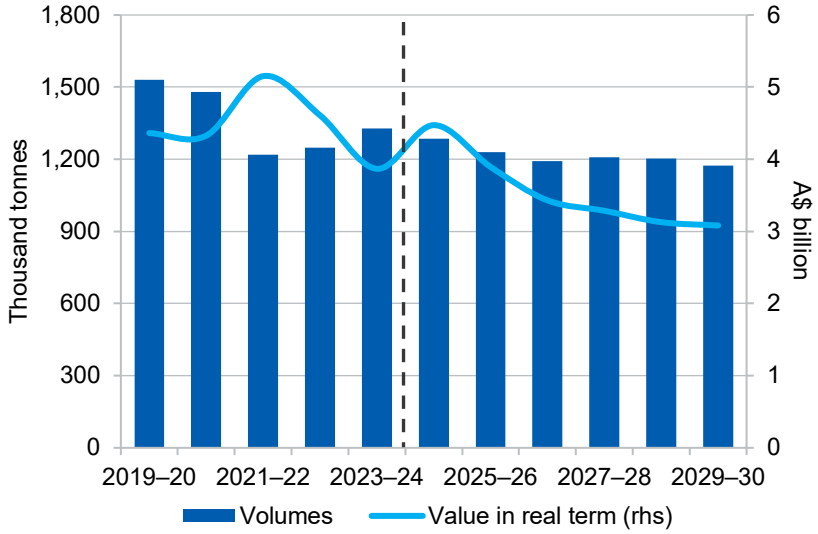
Source: ABS (2025).

Revisions to the outlook

Since the December 2024 *Resources and Energy Quarterly* (REQ), the forecasts for Australia's zinc export earnings in 2024–25 ($4.5 billion) and in 2025–26 ($3.9 billion) has been revised up by around 4.3% and 3.2%, respectively. The revisions have been driven by an upward revision in the forecast zinc price.

Compared to the March 2024 REQ, export earnings in 2028–29 have been revised down by 7.5% to $3.5 billion (nominal terms), due to small reductions in refined and concentrate export volumes.

Figure 13.5: Australia's zinc export volumes and values



Source: ABS (2025); Department of Industry, Science and Resources (2025).

Table 13.1: Zinc outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[z]	CAGR[r]
Production									
– mine	kt	11,882	12,922	12,816	13,099	13,146	13,336	13,725	2.4
– refined [a]	kt	13,545	13,923	14,360	14,674	14,683	15,083	15,389	2.2
Consumption	kt	13,607	13,884	14,357	14,682	14,735	15,030	15,391	2.1
Closing stocks	kt	760	800	802	795	743	796	794	0.7
– weeks of consumption		2.9	3.0	2.9	2.8	2.6	2.8	2.7	-1.3
Price									
– nominal	US$/t	2,778	2,797	2,698	2,712	2,802	2,883	2,995	1.3
	USc/lb	126	127	122	123	127	131	136	1.3
– real [b]	US$/t	2,834	2,797	2,644	2,603	2,633	2,653	2,698	-0.8
	USc/lb	129	127	120	118	119	120	122	-0.8
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR[r]**
Mine output	kt	1,116	1,180	1,148	1,109	1,126	1,120	1,090	-0.4
Refined output	kt	434	481	461	461	474	487	487	1.9
Export volume									
– ore and concentrate [c]	kt	1,907	1,867	1,714	1,632	1,640	1,599	1,536	-3.5
– refined	kt	433	421	436	436	449	461	461	1.1
– total metallic content	kt	1,327	1,285	1,231	1,192	1,209	1,203	1,173	-2.0
Export value									
– nominal	A$m	3,773	4,473	4,025	3,645	3,579	3,492	3,527	-1.1
– real [d]	A$m	3,868	4,473	3,895	3,430	3,286	3,128	3,082	-3.7

Notes: **a** Includes secondary refined zinc; **b** In 2025 US dollars; **c** Quantities refer to the gross weight of all ores and concentrates; **d** In 2024–25 Australian dollars; **f** Forecast; **s** Estimated.
Source: ABS (2025) International Trade in Goods and Services, Australia, Cat. No. 5368.0; Company reports; Department of Industry, Science and Resources (2025); International Lead Zinc Study Group (2025); Wood Mackenzie (2025); LME (2025).

Lithium

Australia's lithium sector

95%

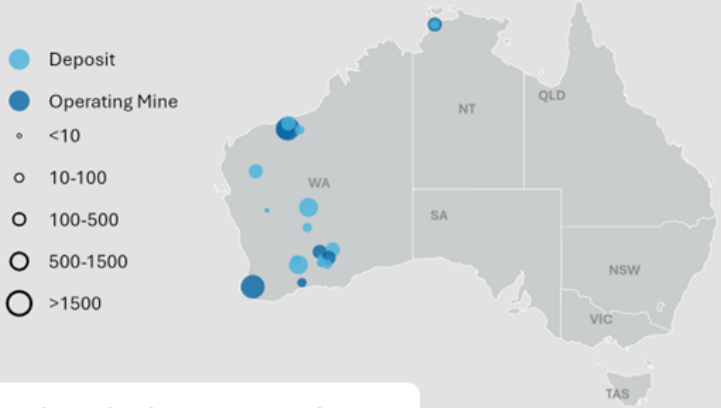
of 2024 spodumene exports shipped to China

36%

of global extraction in 2024 with 2nd highest reserves globally

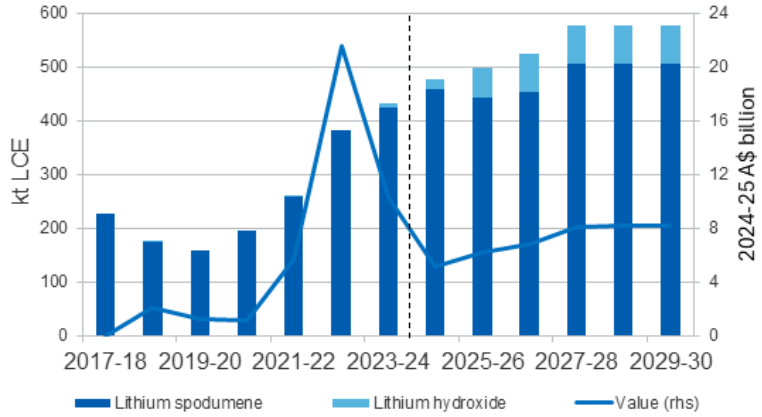
9%

of total global lithium hydroxide to be produced in Australia by 2030



Major Lithium Deposits, kt

Australia's lithium exports



Outlook

- Prices are expected rise slowly to 2030
- Large rise in exploration expenditure between 2021 and 2024 boosted by very high 2022/2023 prices
- Australian mine output to grow
- Argentina's global lithium extraction share to more than double from 6% to almost 13%

Source: GA, DISR, OCE

14.1 Summary

- Australia's lithium export earnings are forecast to increase in real terms from $5.2 billion in 2024–25 to $8.2 billion in 2029–30, driven largely by growth in export volumes. Australian mine output is expected to grow by about 5% a year to 2030.
- Global lithium demand is forecast to grow by almost 13% a year to 2030, driven by rising electric vehicle (EV) adoption and battery energy storage system (BESS) deployment.
- The current oversupply in the global lithium market is expected to diminish over the outlook period, leading to an improved supply-demand balance by 2030. Global refining capacity and downstream demand are expected to remain heavily concentrated in China.

14.2 World Demand

Downward revision in projected growth in ex-China EV sales

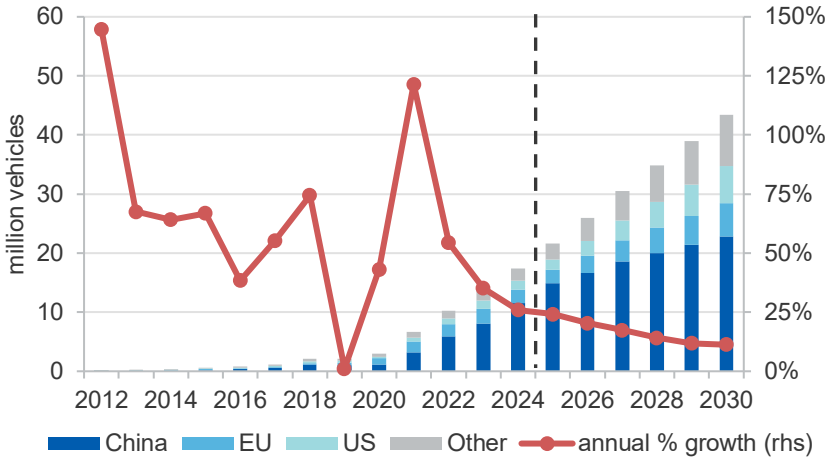
In 2024, global EV sales grew 26%. Rising adoption rates in China (Figure 14.1) drove this trend, with EV penetration rising 10 percentage points in 2024 (Figure 14.2). In comparison, the US and EU markets experienced low or flat growth in 2024. The regional divergence reflects lower EV prices in China, with both the US and the EU lifting tariffs on EVs from China in 2024. Leading market analysis suggests that Chinese EV maker BYD can stay competitive in EU markets even with a 30% import duty[1].

Current projections for medium-term (to 2030) EV sales growth outside of China have moderated when compared with a year ago, following weaker EV adoption in the US and EU in 2024. As of September 2024, the combined expectations of 14 major automakers are for targeted 2030 EV sales to be 10% less than their expectations in 2023.

EV adoption in the EU is still expected to rise rapidly, as automakers must comply with emissions performance standards requiring fleet-average emissions to fall to 55% of 2021 levels by 2030.

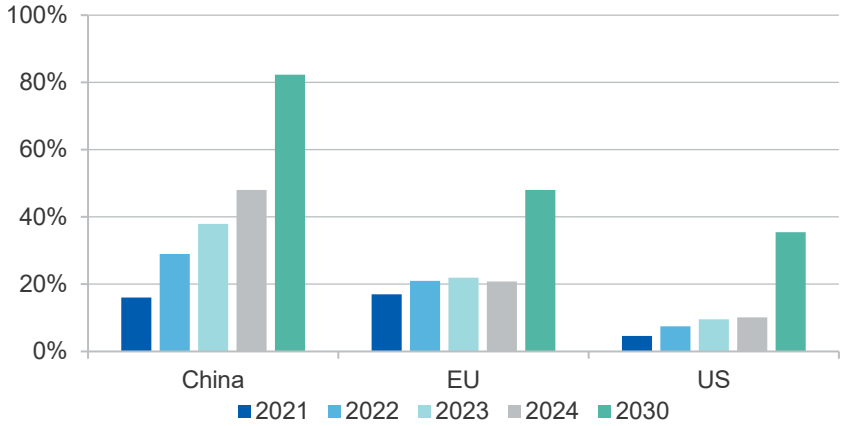
[1] Rhodium Group (2024): EV report

Figure 14.1: Global passenger EV sales volumes and growth



Source: IEA (2024), Department of Industry, Science and Resources (2025)

Figure 14.2: Passenger EV penetration in major vehicle markets



Notes: EVs include battery and plug-in hybrid electric vehicles
Source: International Energy Agency (2024); China Passenger Car Association (2025); European Automobile Manufacturers' Association (2025); Department of Industry, Science and Resources (2025)

The US is reviewing EPA fleet-average emissions standards, following the revocation of a non-binding national EV target in January 2025, which required a 49% cut in fleet-average emissions from 2026 levels by 2032. In the US, state-level rules, most notably in California, may still require automakers to sell lower emissions vehicles, even if federal rules change.

EVs and battery energy storage systems to drive strong growth in global lithium demand

Global lithium demand is forecast to rise by about 13% annually to 2030, as policy settings and improving technology drives rising EV adoption and battery energy storage system (BESS) deployment. Electric trucks and other heavy-duty vehicles are expected to represent a growing share of global lithium demand over the outlook period. In China, electric truck sales rose by close to 150% in 2024 following extensive deployment of comparable battery swapping technology and infrastructure. China made up about 70% of global electric truck sales in 2023 according to estimates of the International Energy Agency (IEA).

BESS are expected to grow at a similar rate to the broader battery market, accounting for 10-15% of battery demand over the outlook period. Resources and Energy Quarterly (REQ) published in September 2024 contains BESS projections to 2030.

14.3 World production

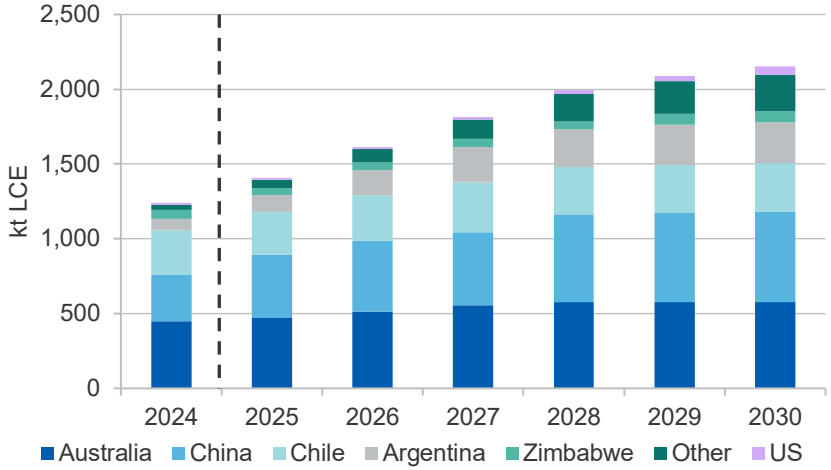
Global lithium production to grow as existing operations expand and new projects commence production

Global lithium extraction is forecast to grow by almost 10% annually over the outlook period, to reach almost 2.2 Mt of lithium carbonate equivalent (LCE) by 2030 (Figure 14.3). While Australia will remain the leading lithium supplier, North America and Africa will increase market share. Most of the new supply will be added in China, Australia and Argentina, with China forecast to add the largest volume over the period.

China's share of global extraction is set to increase marginally from about 25% in 2024 to 28% in 2030, through a combination of new brine and hard rock projects. In December 2024, it was reported that Contemporary Amperex Technology Co. Limited (CATL) decided internally to suspend production at a major lepidolite (a lithium mineral) mine in China. Jianxiawo mine's annual capacity is around 45 kt LCE, which could be more than doubled from 2027. In early February 2025, there were reports CATL had reopened the mine.

Australia's share of global lithium extraction is forecast to fall from 36% in 2024 to 27% by 2030, despite a rise of almost 30% in Australian lithium extraction. The rate of growth in Australian lithium mine output (around 5% annually) is slower than in the past, with some mines recently cutting production or closing temporarily due to low prices (see Australia section).

Figure 14.3: Global lithium extraction



Source: Department of Industry, Science and Resources (2025), Wood Mackenzie (2025)

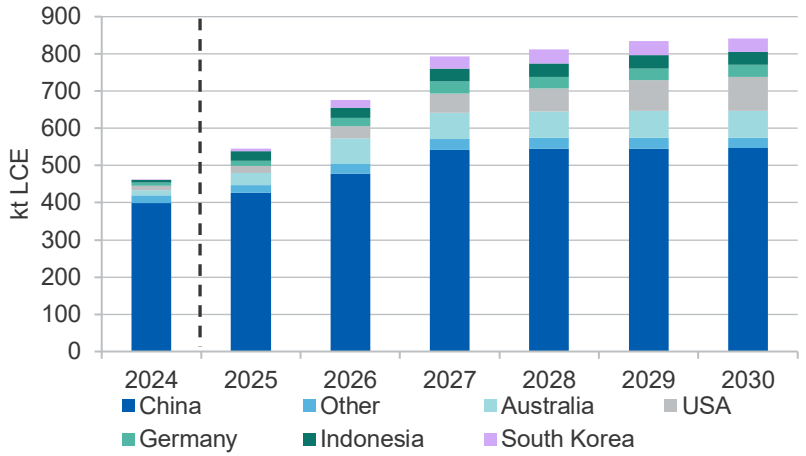
Argentina's market share is expected to more than double from 6% to almost 13% of global lithium extraction by 2030, as a series of large brine operations come online. Low prices in 2024 led to reduced development spending on new projects in Argentina, with several companies scaling back or suspending new developments. Despite these recent decisions, in December 2024 Rio Tinto announced a US$2.5 billion investment in Rincon Lithium Project. Rincon is expected to have an annual capacity of 60 kt tonnes of battery grade lithium carbonate.

Other announced new and expansion and projects could bring up to 249 kt per annum LCE in extra lithium output capacity by 2030. These include brine projects such as Arcadium Lithium's (now part of Rio Tinto) Olaroz, Lithium Argentina and Gangfeng Lithium's Cauchari-Olaroz, Salar del Hombre Muerto and Sal de Vida, and Eramet's Ratones y Centenario.

Zimbabwe's lithium extraction is expected to shrink from under 5% in 2024 to over 3% of global extraction by 2030. This will come despite recent suspensions, with Chinese-owned Bikita mine placed in care and maintenance since October 2024. Petalite (a lithium mineral) production is not expected to resume within the outlook period, due to its lower grade.

While Chile's lithium extraction is set to rise in level terms, the pace of growth is forecast to lag other lithium-producers. This is forecast to see its share of world extraction fall to 15% by 2030 from almost 24% in 2024.

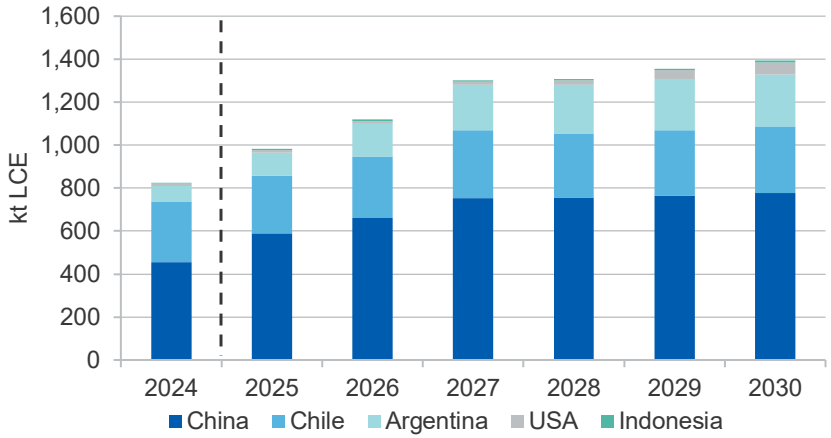
Figure 14.4: Global primary lithium hydroxide production



Source: Department of Industry, Science and Resources (2025), Wood Mackenzie (2025)

Global primary lithium carbonate production is forecast to rise by 9% a year to 1,394 kt LCE by 2030 (Figure 14.5). China's share of global lithium carbonate production is forecast to rise from 55% in 2024 to 56% in 2030. There is currently no substantial investment in facilities refining hard-rock lithium into lithium carbonate outside China.

Figure 14.5: Global primary lithium carbonate production



Source: Department of Industry, Science and Resources (2025), Wood Mackenzie (2025)

Lithium hydroxide is used to manufacture nickel manganese cobalt oxides (NMC) batteries while carbonate in manufacturing of lithium iron phosphate batteries (LFP). The competition between these two, and any other emerging battery technology, will determine the demand for battery chemicals such as lithium hydroxide and lithium carbonate into the future.

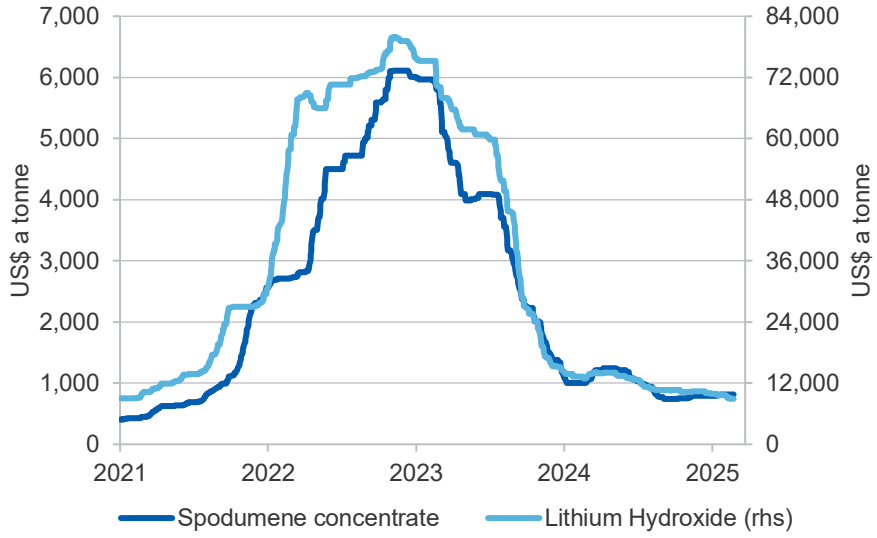
14.4 Prices

Prices expected to gradually recover as the global market balance tightens

Lithium prices remained weak in 2024 as EV sales growth slowed and additional production-from projects incentivised by high prices in 2022-came online. In February 2025, spodumene prices averaged US$815 a tonne FOB Aus (Figure 14.6), while lithium hydroxide prices averaged US$9,150 a tonne (China FOB).

Prices are projected to recover modestly over the outlook period due to a combination of production curtailments and demand growth. However, they will remain well below the peak of 2022 and early 2023. Prices are expected to rise to an annual average price of about US$1,100 a tonne for spodumene and US$16,000 a tonne for lithium hydroxide in 2030 (in real terms).

Figure 14.6: Spodumene and lithium hydroxide prices



Source: Bloomberg (2025)

14.5 Australia

Australian mine production to continue to grow driven by ramping up economic operations

Spodumene concentrate production at Kathleen Valley more than tripled in the December quarter 2024 compared to the previous quarter. The mine helped in a slight overall increase in Australia's quarterly spodumene concentrate output (114 kt LCE) compared to the previous quarter.

Australian lithium mine output is estimated to have increased by more than 9% year-on-year to 114 kt LCE on a recoverable lithium basis in the December quarter 2024. This increase is in line with our December quarter forecast. Bald Hill was put in care and maintenance on 13 November 2024 but still produced around 25 kt (2.7 kt LCE) of spodumene compared to 26 kt (3.1 kt LCE) in the December quarter 2023.The total Australian mine production is forecast to rise by about 5% a year over the outlook period from 448 kt LCE in 2024 to 578 kt LCE in 2030.

Australia's lithium hydroxide production to expand steadily driven by ramping up of commissioned refineries

Total lithium hydroxide production in the December quarter 2024 was almost 5.4% lower compared with previous quarter. The persistent low global price for lithium hydroxide is continuing to present challenging operating conditions for Australian producers in the near term. The fall in output can be also partly attributed to technical issues with ramping up production at Kwinana's Tianqi Lithium Refinery. Covalent/Wesfarmers' Kwinana Refinery is expected to start production in mid-2025. Wesfarmers recently reported the refinery was 95% constructed and 50% commissioned at the end of 2024.

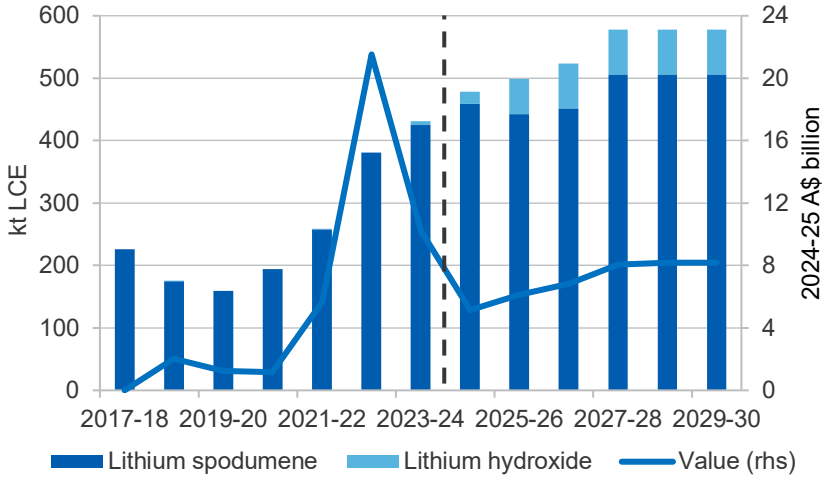
Over the outlook period, Australia's total lithium hydroxide output is expected to rise from about 17 kt in 2024 to about 82 kt in 2030. This output will come from Western Australia's Tianqi and Covalent's respective joint venture refineries in Kwinana and Abermarle and Mineral Resources' refinery in Kemerton. Lithium hydroxide export values are projected to grow from about A$0.3 billion to A$1.9 billion over the same period.

Export earnings expected to pick up later in the outlook driven by volumes

Australian spodumene export earnings fell from around A$18.9 billion in 2023 to about A$5.3 billion in 2024. This was due to lower prices and some production curtailment. Australian lithium hydroxide export earnings grew from A$43 million in 2023 to A$248 million in 2024. This growth was driven by increased volumes despite lower prices.

Australia's lithium export earnings are forecast to increase in real terms from $5.2 billion in 2024–25 to $8.2 billion in 2029–30 (Figure 14.7). The increase is expected to be primarily driven more by increased export volumes, though improving prices are expected to have a positive impact later in the outlook period. Australian mine output is expected to about 5% annual growth over the outlook period, while refined production is expected to grow by 43% annually.

Figure 14.7: Australia's lithium export volumes and values

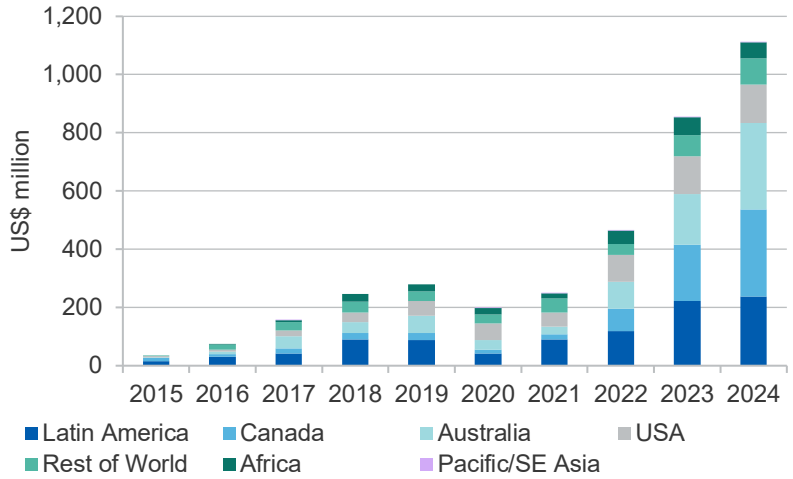


Source: Department of Industry, Science and Resources (2025)

Exploration strong in Australia and Canada supported by past high prices and US policy

Companies operating in Australia reported US$298 million in lithium exploration expenditure in 2024. Canada matched this (US$299 million). It was the biggest lithium exploration spender in 2024. The two nations accounted for about 54% of the global lithium exploration spend in 2024 (Figure 14.8). Australia's exploration expenditure has been trending up, from about US$1.4 million in 2015 to almost US$300 million in 2024.

Figure 14.8: Global lithium exploration expenditure by location



Source: S&P Global Market Intelligence (2025)

Revisions to the outlook

Export earnings in 2024–25 have been revised up from the December 2024 REQ reflecting higher forecast spodumene production and a lower exchange rate assumption. Earnings of $5.2 billion are now forecast for 2024–25, up from $4.9 billion. Export earnings in 2025–26 have been revised down from $6.5 billion in the December 2024 REQ to $6.1 billion in this edition (in nominal terms).

Compared with the March 2024 REQ, Australian lithium earnings in 2028–29 (in nominal terms) have been revised down from around $10.4 billion to $9.2 billion. The change reflects forecasts of a slower price recovery partially offset by growth in forecast volumes and a lower exchange rate assumption.

Table 14.1: Lithium outlook

World	Unit	2024	2025[f]	2026[f]	2027[z]	2028[z]	2029[z]	2030[f]	CAGR
Production [b]	LCE[a] kt	1,293	1,490	1,715	1,944	2,149	2,275	2,378	10.7
Demand	LCE[a] kt	1,185	1,375	1,571	1,794	2,032	2,228	2,410	12.6
Spodumene price									
– nominal	US$/t	970	877	925	1,075	1,200	1,275	1,300	5.0
– real [c]	US$/t	989	877	906	1,032	1,128	1,173	1,171	2.9
Lithium hydroxide price									
– nominal	US$/t	12,129	10,542	12,500	14,500	16,500	17,000	17,750	6.6
– real [c]	US$/t	12,372	10,542	12,249	13,916	15,506	15,643	15,994	4.4
Australia	**Unit**	**2023–24**	**2024–25[f]**	**2025–26[f]**	**2026–27[z]**	**2027–28[z]**	**2028–29[z]**	**2029–30[z]**	**CAGR**
Production									
– Mine (spodumene)	LCE[a] kt	418	467	499	524	578	578	578	5.6
Export volume									
– Ore and concentrate (spodumene) [h]	kt	3,668	3,977	4,232	4,439	4,848	4,848	4,848	4.8
– Refined (lithium hydroxide) [h]	kt	9	22	64	82	82	82	82	43.4
Export value									
– Ore and concentrate (spodumene)	A$m	9,727	4,592	4,991	5,417	6,761	7,003	7,233	-4.8
– Refined (lithium hydroxide)	A$m	144	343	1,143	1,617	1,800	1,920	1,896	53.7
– Total (nominal) [d]	A$m	9,996	5,164	6,349	7,250	8,777	9,139	9,344	-1.1
– Total (real) [d g]	A$m	10,248	5,164	6,144	6,823	8,059	8,187	8,166	-3.7

Notes: **a** Lithium carbonate equivalent: this is a measure of the quantity of lithium metal in the product; **b** Refined lithium products include lithium hydroxide and lithium carbonate; **c** In current calendar year US dollars; **d** Revenue from spodumene concentrate, lithium hydroxide and other lithium products; **g** In current financial year Australian dollars; **h** Quantities refer to the gross weight of the product without adjustments for lithium content: lithium content of spodumene from Australian mines are generally, but not always, between 5 to 6 percent; **f** Forecast; **r** Compound annual growth rate (per cent), for the period from 2023 to 2029 or for the equivalent financial years; **s** Estimate; **z** Projection.

Sources: ABS (2025); Bloomberg (2025); Company reports; Department of Industry, Science and Resources (2025); Wood Mackenzie (2025)

Other Critical Minerals

Opportunities in Australia's Critical Minerals Industry

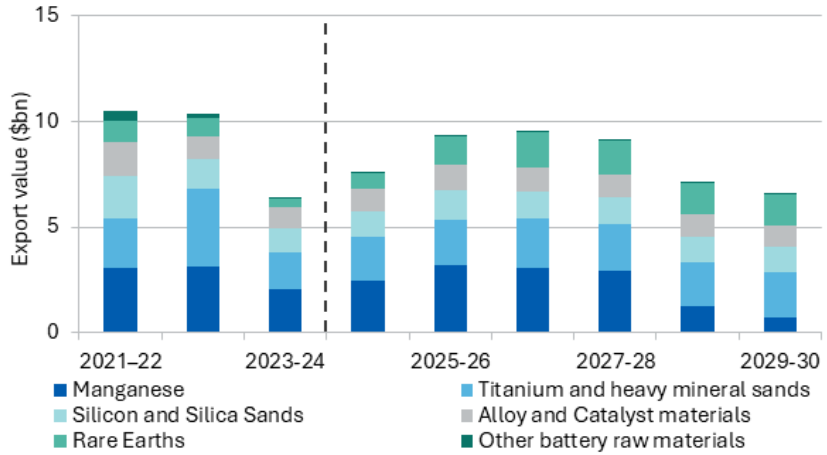
$9.5 billion
in potential export value by 2029-30

$3.8 billion
of which to come from projects in the development pipeline

Around half
of export revenue expected from rare earths and mineral sands

Australian Operating Mines and Deposits of Critical Minerals

Australia's critical mineral exports



Outlook

- $10 billion in capital investment required to realise the development pipeline
- Rare earths exports to grow from new processing facilities
- Prices to remain volatile, especially for clean energy applications
- Closure of Groote Eylandt manganese mine to reduce exports

Source: GA; DISR; OCE

15.1 Summary

- This chapter explores the emerging potential for critical minerals not typically covered by this publication, including antimony, cobalt, graphite, magnesium, manganese, rare earth elements, silicon, titania-based mineral sands, tungsten, and vanadium (*other critical minerals*).
- Australia's exports of other critical minerals are estimated at $7.6 billion in 2024–25. Other critical mineral exports could be worth between $5.7 billion and $9.5 billion in real terms by 2029–30, depending on how much of Australia's advanced project pipeline comes online.
- When combined with lithium and nickel, this could see Australia's total critical minerals exports reach $19 billion in 2029–30- making critical minerals the sixth largest category of resource and energy exports.
- Manganese currently makes up the largest portion of other critical mineral exports, though the approaching end of life of a major manganese mine is expected to see exports fall by the end of the outlook period.
- Australia's first rare earth refinery (Lynas's Kalgoorlie refinery) recently started operations, with Eneabba expected to reach production in the next few years. Exports of raw and refined rare earth elements could reach between $1.3 and $3.7 billion in 2029–30.
- Emerging critical minerals facilities will create economic opportunities, including new graphite production which is expected to reach $576 million in value by 2029–30.

15.2 Global market dynamics

Demand for clean energy applications is expected to drive majority of growth in cobalt, graphite and rare earths over the next five years

The deployment of clean energy technologies has ignited a surge in the global demand for critical minerals in recent years. Most critical mineral consumption in clean energy technologies is accounted for by use in electric vehicle (EV) batteries and motors, renewable solar and wind power generation, and battery energy storage systems (BESS; see September 2024 *Resources and Energy Quarterly*) (Table 1.1).

Table 15.1: Other critical minerals and uses

Critical mineral	Traditional and defence uses	Clean energy applications
Antimony	Alloys	Solar PV panels
Cobalt	Superalloys	EV batteries
	Device batteries	
Graphite	Foundry applications	Lithium battery anodes
	High-temp lubricants	
	Composite materials	
Magnesium	Lightweight alloys	—
	Steelmaking purposes	
Manganese	Alloys	EV batteries
Rare Earth Elements	Glass, lights	Wind turbines
	Magnets	EV motors
Silicon	Computing chips	Solar PV panels
Titanium and mineral sands	Specialised alloys	EV batteries
	Pigments	Solar cells
Tungsten	Alloys	Permanent magnets in EVs/wind turbines
	Cutting tools	
Vanadium	Steel alloys	Vanadium flow batteries
	Sulphuric acid production	

Notes: Excludes critical minerals already covered by the REQ (nickel, lithium), as well as other critical minerals where Australia does not have significant production or reserves. List is non-exhaustive and other smaller uses may not be included. Defence uses mainly include uses in alloys.
Source: Geoscience Australia (2025); USGS (2025).

Clean energy technologies are being adopted at a rapid rate- installations of solar PV increased by 85% in 2023, while installations of wind turbines increased by 60%.

The IEA projects that clean energy demand will account for 48% of cobalt demand, 54% of graphite demand and 31% of rare earth element (REE) demand by 2030 in its stated policies scenario (STEPS) (Figure 15.1). Clean energy demand for manganese is also expected to triple, though most manganese will still be used as a component in steel-based alloys. The IEA projects that mineral demand in clean energy technology will be even greater in its more ambitious net zero scenario.

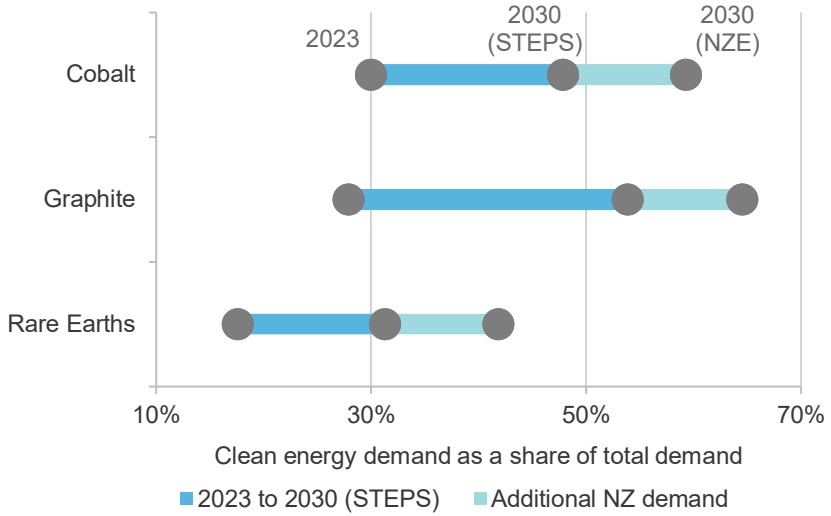
However, resource demand is expected to increase at a slower rate than total battery demand, as technical advances are expected to gradually reduce the size of battery packs relative to energy stored (that is, increase battery energy density). Further, most newer battery designs use little or no cobalt due to costs and concerns about mining practices in the Democratic Republic of Congo (DRC). Faster adoption of newer battery technologies could see cobalt consumption in clean energy technology lower than projected in the STEPS scenario.

Compared to cobalt, alternative technologies are less likely to present a risk to REE consumption over the outlook period. While induction motors- which use copper or aluminium- are still used by some OEMs, manufacturers are continuing to move to REE-based permanent magnet motors due to higher efficiency. While research is ongoing into REE-free permanent magnet motors, these are yet to be commercialised.

Traditional uses to continue to lead global consumption of vanadium and manganese despite growth in clean energy demand

Despite strong growth in clean energy demand, traditional use cases for most other critical minerals will still lead global consumption. For example, vanadium is primarily used in high-strength steel alloys, with a growing share expected to come from its role in vanadium redox flow batteries (VRFBs) for grid-scale energy storage. VRFBs offer advantages over lithium-ion batteries in terms of lifespan and scalability (see September 2024 Resources and Energy Quarterly).

Figure 15.1: Projected share of mineral demand for clean energy applications by 2030 under different IEA scenarios



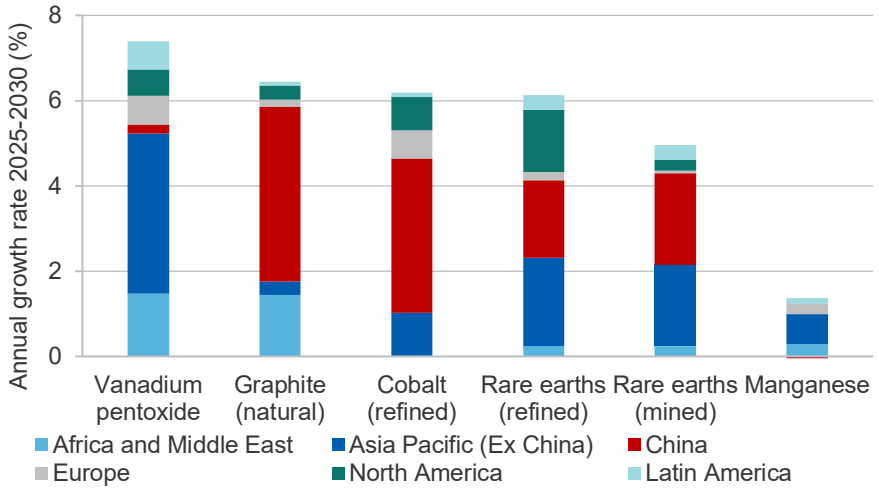
Notes: STEPS refers to the stated policies scenario while NZE refers to projections under the IEA's Net Zero by 2050 Scenario
Source: IEA (2024)

Similarly, manganese is a vital component in steel making, and in consumer battery applications such as power tools. Manganese is also a key component in nickel-based (NMC) EV batteries, and its use in nickel-free (LFP) batteries is becoming more widespread. Demand from batteries (for both consumer goods and EVs) only accounts for around 2 to 3% of world manganese consumption.

However, the specification of critical minerals consumed in clean energy technology applications is not always interchangeable with those consumed in traditional industrial use cases.

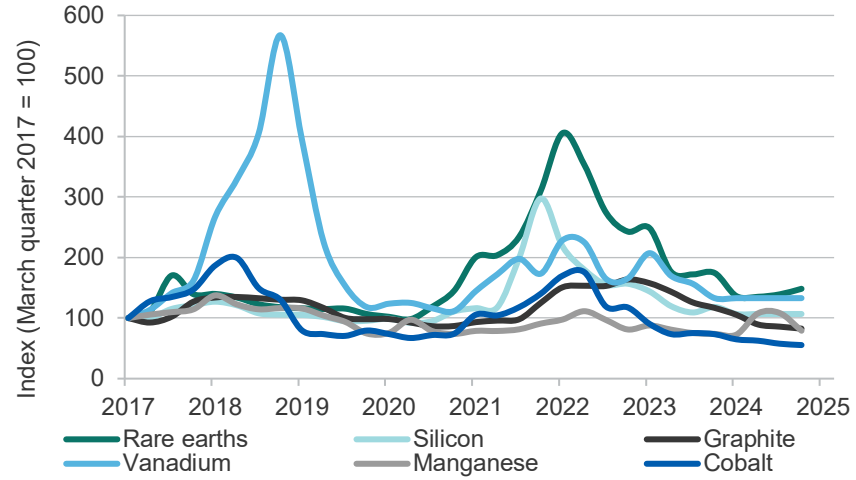
For example, NMC batteries used in EVs require high purity electrolytic manganese metal or high purity manganese sulphate monohydrate as inputs. These higher-purity products are often refined using different techniques than the ferromanganese used in steelmaking, or the electrolytic manganese dioxide used in portable power tool batteries.

Figure 15.2: Projected growth in global production to 2030



Source: Wood Mackenzie (2025); S&P Global (2025); Department of Industry, Science and Resources calculations (2025)

Figure 15.3: Selected critical minerals prices



Notes: Prices are for: Nd/Pr oxide; silicon metal; graphite flake 94%; vanadium pentoxide flake 98%; manganese ore 44%; LME Cobalt 98%.
Source: Asian Metal Inc (2024); Bloomberg (2024); LME (2024); Shanghai Steelhome (2024); Department of Industry, Science and Resources calculations (2024)

Ex-China refined production expected to grow as countries seek to build critical mineral supply chains

With rapid expansion in global critical mineral demand expected to continue through to 2030 (and beyond), growth in the production and processing of critical minerals is expected to mirror this growth. Vanadium pentoxide, cobalt (refined), and rare earths (both mined and refined) are all expected to see marked growth in annual global production to 2030, with a significant share coming from the Asia Pacific region (Figure 15.2).

Amongst other regions, Africa is expected to expand its production of vanadium and graphite, while North America is expected to expand production of refined rare earths, cobalt and vanadium pentoxide. China is expected to continue expanding its capacity in the rare earths, refined graphite and cobalt sectors.

Supply and demand mismatches are contributing to price volatility in critical mineral markets

Supply and demand imbalances are well-known dynamics in the lithium and nickel markets (see *Nickel* and *Lithium* chapters). However, these imbalances have also affected other critical mineral markets in recent history (Figure 15.3). For example:

- a change in Chinese steel rebar requirements saw vanadium pentoxide prices rise dramatically through 2018, before correcting sharply over the following year;
- surging energy prices saw mandated industrial production cuts in China affect silicon production, driving up prices in 2021;
- COVID-related supply chain disruptions in 2021 and 2022 saw Myanmar cut off from its rare earth export markets, which-. alongside surging demand for rare earth magnets —led to higher rare earth prices;
- oversupply of natural graphite and intensified competition from synthetic graphite saw flake graphite prices plummet in 2023.

Shallow markets and uncertainty in the pace of the global transition can contribute to these imbalances. Critical mineral markets are much smaller

than established commodities, meaning that a handful of sellers (or buyers) can meaningfully change market pricing. For example, the temporary closure of GEMCO (Groot Eylandt) removed up to 15% of global manganese supply, causing manganese prices to increase sharply.

Uncertainty in the pace of the global transition can also contribute to price volatility for critical minerals used in clean energy technologies. Decisions for investment in mineral supply are typically made many years in advance to provide time for exploration and definition of ore reserves, regulatory approvals, securing funding sources and construction of mines. On the other hand, the pace of battery mineral demand growth could change from year to year, driven by differences in EV uptake, BESS installations and changes in technology. Price volatility can also act as a feedback loop, as higher perceived investment risks may prevent some facilities from obtaining funding.

Export ban in cobalt's largest producing nation has spiked prices, but future prices to be determined by copper and nickel markets

Cobalt prices have seen the largest decline compared to other critical minerals, with prices falling by two-thirds between June quarter 2022 and December quarter 2024 because of additional supply from the DRC and Indonesia. To contain price falls, the DRC imposed a four-month ban of cobalt exports on 22 February 2025, which have lifted prices by over one-third.

However, cobalt's position as a by-product of copper and nickel production means that it is highly dependent on trends in these markets. For example, strong copper prices (see *Copper* chapter) are likely to see cobalt production continue, placing downward pressure on prices. Similarly, Indonesia's rapid growth in nickel supply (see *Nickel* chapter) has seen its cobalt production increase by over 140% in a two-year period.

15.3 Australia's current critical mineral production

Exports of other critical minerals could approach $9 billion in real terms within two years

Australia's exports of other critical minerals[1] (not typically included in the *Resources and Energy Quarterly)* are expected to total $7.6 billion in 2024–25 (Figure 15.4). Exports from operating and committed facilities are expected to peak at $8.9 billion in real terms over the next two financial years before declining to $5.7 billion in 2029–30.

The GEMCO manganese mine reaching end of life in 2029 is a key contributor to the fall in export earnings by the end of the outlook period. However, production from pipeline projects- which are explored in the following section- could support export earnings.

Manganese exports in 2024 severely reduced by storm damage at Groote Eylandt port facilities

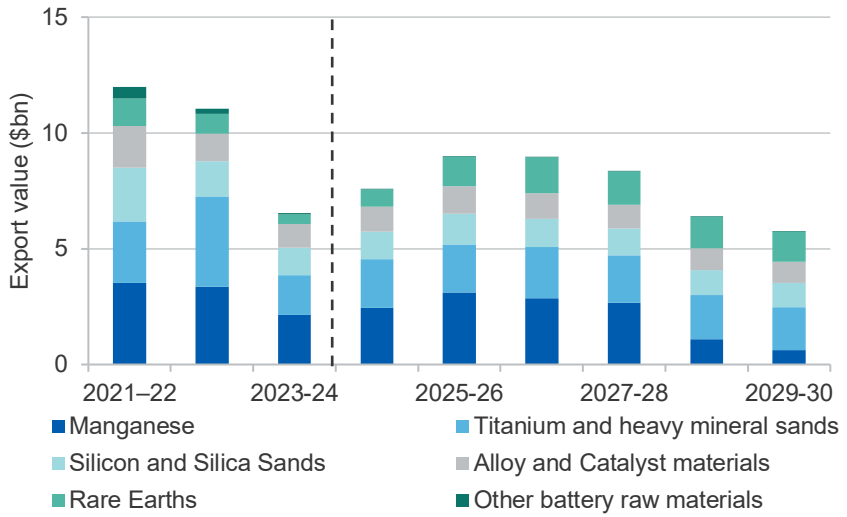
Australia was the world's third largest producer of manganese ore in 2023, accounting for 15% of global production. Most of Australia's manganese production is exported overseas and is produced by GEMCO- a joint venture of South32 (60%) and Anglo American (40%). Manganese currently accounts for around 30% of other critical mineral exports.

Manganese exports were significantly lower in 2024 due to severe damage at Groote Eylandt port facilities after Tropical Cyclone Megan. Prior to this, GEMCO accounted for around 80% of Australian manganese production. The facility entered care and maintenance following the cyclone and is currently undergoing dewatering activities. The facility commenced a phased restart in the December 2024 quarter, with limited production expected for the rest of the financial year.

Following this, the GEMCO Southern Lease Mining Project is expected to extend the life of the mine by around three years, with 15 million tonnes of manganese ore expected to be mined from the expansion area. Manganese exports are expected to decline following GEMCO's closure.

[1] Minerals on Australia's critical mineral list as at March 2025, excluding lithium and nickel.

Figure 15.4: Other critical mineral exports from operating and committed facilities in Australia



Source: Bloomberg (2025); Company reports; Department of Industry, Science and Resources calculations (2025); Resources and energy major projects (2024).
Notes: Committed projects are those which have made a final investment decision. Other battery raw materials include cobalt, and graphite; alloy and catalyst materials includes antimony, magnesium and tungsten. Future value calculated using 2022–2024 average price (see methodology).

Falls in nickel and cobalt prices contributed to falling cobalt production and exports

Australia's cobalt production is primarily a by-product at nickel facilities. Significant market surpluses of nickel and cobalt occurred over 2023, as expanded production in Indonesia (for nickel) and the DRC (for cobalt) combined with slowing demand growth for EVs. This led to significant price declines for these metals, with LME cobalt price falling by about two-thirds between 2022 and 2024.

Australian operations are estimated to have produced 3.4 kt of refined cobalt in 2023, though the exact level of cobalt production is unclear due to a lack of reporting. The closures of BHP's Nickel West and First Quantum's Ravensthorpe facilities in 2024 left Glencore's Murrin Murrin as the sole refinery in Australia not in care and maintenance.

Australia's first rare earth refinery opened in 2024

Lynas Rare Earths' Kalgoorlie Processing Facility opened in November 2024. This facility will refine feedstock from Lynas' Mt Weld mine to produce up to 68 kt a year of mixed rare earth carbonate (MREC). The first shipment of MREC from the Kalgoorlie facility left in the June 2024 quarter, headed for further processing into rare earth oxides (REOs) at Lynas' Malaysia facility. Lynas' Mt Weld mine has been the only REE producer in Australia since 2011.

Iluka Resources' Eneabba refinery revised costings in 2024 and are planning to commence production by 2027. The company estimates the annual production of 23 kt of mixed REOs.

15.4 Australia's emerging critical mineral opportunities

Australia's growing pipeline of projects could double critical mineral exports by the end of the outlook period

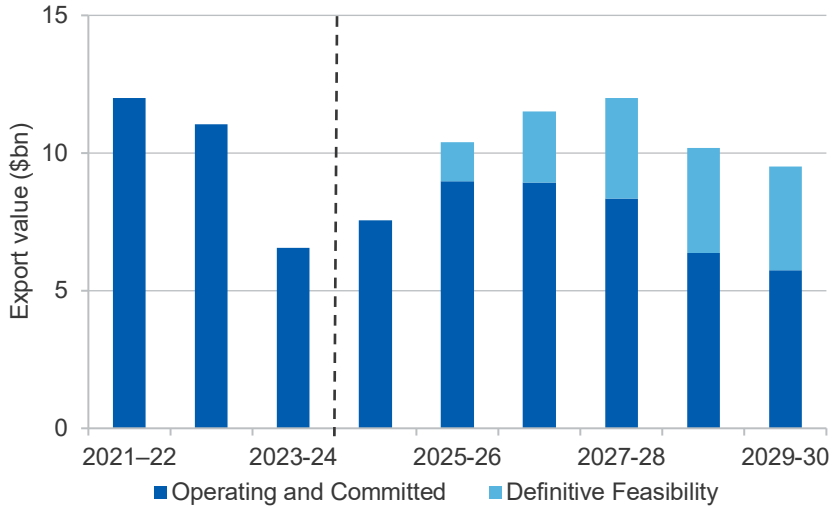
There are 17 other critical mineral projects at the advanced feasibility stage as set out in the 2024 *Resources and Energy Major Projects* report pipeline (the pipeline; see methodology section). Capital investments of $9.6 billion will be required to bring these facilities online.

The value of production from the critical mineral project pipeline is estimated at $3.8 billion by 2029–30 in real terms. In an upper-bound scenario- where all planned production comes online and is exported- Australia's critical mineral exports could rise to $9.5 billion. While pipeline projects could start to come online by 2026–27, potential production is weighted towards the end of the outlook period.

Strong rare earths project pipeline expected to lead growth

The value of production in Australia's rare earths pipeline is estimated at $1.9 billion by 2029–30, in addition to $1.3 billion in exports from operating and committed rare earth facilities. Around 60% of the value of these exports are expected to come from refined rare earth products.

Figure 15.5: Potential additional export value in pipeline projects



Source: Bloomberg (2024); Company reports; Department of Industry, Science and Resources calculations (2024).
Notes: Future value calculated using 2022–2024 average price (see methodology).

Potential production of mined rare earths is led by planned capacity from two facilities. Hastings Technology Metals has recently agreed on a joint venture with Wyloo to progress development on its Yangibana project, which is expected to come online in 2026. The project is expected to produce 37 kt of MREC, equivalent to 3.4 kt of REOs. Astron Corporation's Donald rare earths and mineral sands project expects to produce 7.2 kt of MREC, accounting for 58% of revenue from the project. Production of 229 kt of heavy mineral concentrate (HMC) will account for the project's remaining revenue.

Additionally, pipeline projects will contribute significantly to Australia's production of refined REE products. VHM Limited's Goschen project is targeting a nameplate capacity of 8.5 kt of mixed rare earth carbonate, a partially processed intermediate REE product. Australian Strategic Materials Limited's Dubbo project and Arafura's Nolans project plan to further refine products to produce 1.5 kt and 5 kt of REOs respectively.

Future cobalt projects will require stronger nickel and cobalt prices to come online

Most potential cobalt projects in the 2024 *Resources and Energy Major Projects* report are early-stage projects, with only the Sconi Project (owned by Australian Mines) reaching advanced feasibility.

Potential cobalt projects (including those yet to reach advanced feasibility) are mostly planning to produce either nickel/cobalt sulphate or a mixed hydroxide precipitate (MHP) product. Sulphate products are the preferred chemical feedstock for production of battery cathode materials, while MHP is the preferred feedstock to produce these chemicals.

However, these projects would likely require prices to improve to be commercially viable (Figure 15.6). Further, the projects that report assumed nickel prices in scoping/feasibility studies around current levels also require cobalt prices to be 2-3 times higher than current prices.

Nascent commodities and by-product mineral recovery present emerging opportunities for Australia's critical mineral sector

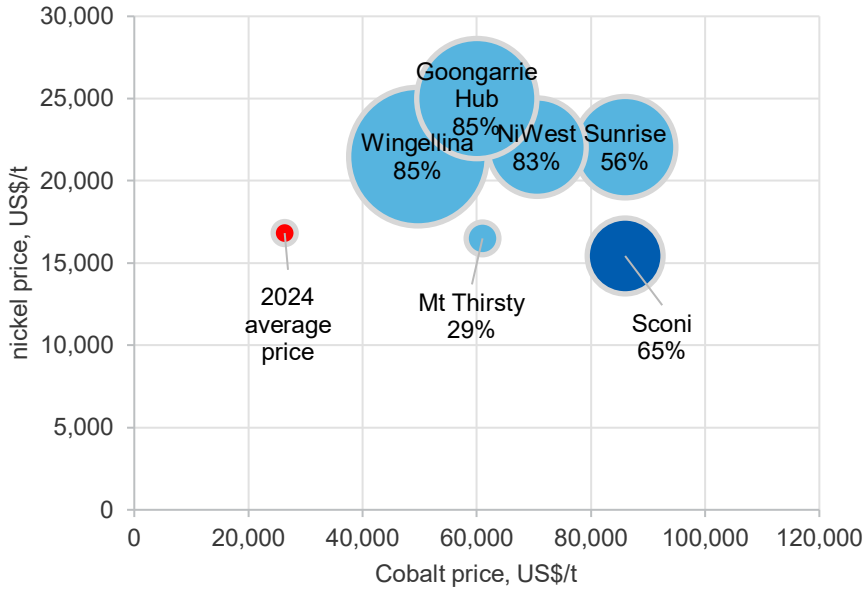
The value of production in Australia's graphite pipeline is estimated at $576 million by 2029–30. This will be led by Renascor Resources Ltd's forthcoming facility, the Siviour Graphite Project in South Australia. Siviour is among the world's largest planned vertically integrated graphite operations, with up to 100 kt of purified spherical graphite across both stages that could supply domestic and international battery supply chains. Additional projects- such as International Graphite's Collie Plant in Western Australia- could also add to Australia's refined graphite exports.

The Australian Vanadium Project — owned by Australian Vanadium Ltd- in Western Australia is one of the largest vanadium deposits globally. The project intends to deliver 11.2 kt of high-purity vanadium pentoxide flake and 900 kt dry tonnes per annum of iron titanium (FeTi) coproduct. This project recently received environmental approval status in January 2025. Despite Australia holding significant untapped vanadium resources, there have been no operating vanadium mines since Atlantic Ltd's Windimurra Vanadium Project entered care and maintenance in 2014.

The Hillgrove Antimony-Gold Project is expected become Australia's second antimony-producing mine in 2026. The 5.4 kt per annum project follows Costerfield in Victoria, which produced 1.6 kt of antimony in concentrates in 2023–24. The combined production capacity of these two facilities is equivalent to about 7.4% of mined antimony supply in 2024.

Australia's existing alumina and zinc production capacity also presents future opportunities for gallium and germanium production. Bauxite contains trace amounts of gallium, while germanium is commonly found in zinc ores. Geoscience Australia, CSIRO and ANSTO are conducting research into Australia's *Critical Mineral By-Product Potential*, to establish the feasibility of a domestic industry for these by-product minerals.

Figure 15.6: Nickel and cobalt price assumptions in feasibility studies of Australia's Pre-FID nickel-cobalt production pipeline



Notes: Size of the bubble represents capacity for nickel production from the facility. The percentage in brackets is the share of revenue derived from nickel for the project, with the remainder of the revenue largely derived from cobalt. Companies reported IRR between 15% to 23% for these projects under these price assumptions. Readiness ratings are calculated based on the type of project and studies published

Table 15.2: Australian Production of other critical minerals

	Unit	2020-21	2021-22	2022-23	2023-24	2024-25[f]
Ore and Concentrate Products						
Antimony	t	3,539	2,896	2,147	1,562	1,532
Cobalt	Kt	2.5	5.8	5.2	3.9	3.5
Heavy Mineral Sands						
Heavy mineral concentrate	kt	-	-	66	116	147
Ilmenite	kt	240	864	1,351	1,007	1,448
Rutile	kt	41	108	216	226	220
Zircon sands	kt	14	211	347	316	403
Magnesium carbonate	kt	15	111	355	355	355
Manganese	kt	2,335	4,838	5,036	3,690	3,675
Nd/Pr oxides	t	1,414	3,266	3,589	3,228	5,750
Silica sands	kt	3,160	3,160	3,160	3,160	3,160
Tungsten	kmtu	0	6	18	109	124
Refined Products						
Cobalt	kt	2.1	3.0	3.5	1.2	0.7
Magnesium	kt	175	175	175	175	175
Silicon metal	kt	44	44	44	44	44

Notes: f forecast. kmtu stands for thousands of metric ton units, where 1 mtu equals 10kg WO_3.
Sources: Company reports.

Table 15.3: Australian exports from operating and committed facilities, plus potential value contributed by pipeline projects

	Unit	2023-24	2024-25[f]	2025-26[f]	2026-27[f]	2027-28[z]	2028-29[z]	2029-30[z]
Other battery raw materials	$m	498	209	54	10	1	1	1
Pipeline Project Value	$m	—	—	—	—	230	300	278
Alloy and Catalyst materials	$m	1,777	1,178	1,035	1,092	1187	1,093	1,020
Pipeline Project Value	$m	—	—	—	—	301	530	650
Titanium and heavy mineral sands	$m	2,660	3,909	1,720	2,095	2,079	2,206	2,056
Pipeline Project Value	$m	—	—	—	—	—	99	696
Silicon and Silica Sands	$m	2,335	1,522	1,178	1,189	1,339	1,233	1,151
Pipeline Project Value	$m	—	—	—	—	261	242	225
Rare Earths		1,207	872	418	735	1,274	1,548	1,444
Pipeline Project Value		—	—	—	—	631	1,396	1,817
Manganese	$m	3,517	3,350	2,141	2,443	3,101	2,855	2,664
Pipeline Project Value	$m	—	—	—	—	—	—	—
Total Export Value from operating and committed facilities		6,545	7,563	8,981	8,936	8,335	6,373	5,741
Potential Pipeline Value		—	—	1,423	2,567	3,666	3,820	3,762
Total Potential Other Critical Minerals Export Value		6,545	7,563	10,403	11,503	12,001	10,193	9,503

Notes: **f** forecast; **z** projection. Pipeline project value refers to the value of production from advanced feasibility projects (see methodology). Other battery minerals includes cobalt and graphite; alloying and other catalyst metals includes antimony, magnesium and tungsten.
Source: Bloomberg (2025); Department of Industry, Science and Resources (2024, 2025).

15.5 Methodology

Export methodology for operating and committed facilities

For most commodities, the Office of the Chief Economist have access to export data from the Australian Bureau of Statistics (ABS). However, the small number of critical mineral producers means that the ABS chooses to confidentialise these exports to protect producers' commercial interests. For this chapter, a different export methodology is used.

Exports are calculated via a bottom-up methodology at the facility level:

Exports = production * export share * price

- Export share of production is estimated through desktop analysis, supply mapping tools and market research.
- Prices are calculated either through i) realised prices reported by companies, or ii) applying the nearest known benchmark price.
- A premium/discount factor was applied where facilities are known to sell at a premium/discount to the benchmark price.

As a result, all figures in this chapter are provided as estimates. Further, this methodology may be subject to change in future publications.

Methodology for valuing pipeline value

The Office of the Chief Economist has included projects at the advanced feasibility stage as published in the 2024 *Resources and Energy Major Projects* report.

- Advanced feasibility is determined by the project having a definitive or bankable feasibility study published on the project.
- Projects were determined to commence as listed in the report, as per feasibility and other studies published by the facility's owners.
- There were a number of facilities in the report where the date was not reported, and these facilities are not included in this chapter.

Price projection methodology

The Office of the Chief Economist currently does not forecast prices for other critical minerals. As such, the average price over the last 3 calendar years (2022–2024) was used to value exports from operating and committed facilities, and production from pipeline projects.

Principal markets for Australia‘s resource and energy exports

Table 16.1: Principal markets for Australia's total resource and energy exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24	*Share (2023-24)*
China	$m	126,595	148,787	149,538	165,042	152,160	37%
Japan	$m	45,539	34,223	75,941	98,881	41,019	10%
Other Asia [a]	$m	29,546	33,491	46,261	51,439	55,792	13%
Korea, Rep. of	$m	21,423	23,042	43,210	45,141	25,997	6%
India	$m	9,449	11,612	26,418	21,265	21,307	5%
EU28	$m	18,633	15,546	13,711	14,086	13,794	3%
Other [b]	$m	38,304	41,793	66,572	70,346	104,922	25%
Total	**$m**	**289,489**	**308,494**	**421,651**	**466,200**	**414,991**	**-**

Notes: **a** Other Asia excludes China, Japan, South Korea and India; **b** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.2: Principal markets for Australia's iron ore exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
China	$m	84,786	124,820	108,307	104,777	116,280
Japan	$m	7,038	9,080	10,257	8,073	8,191
Korea, Rep. of	$m	6,222	9,033	8,293	6,932	7,724
Taiwan	$m	1,876	3,070	2,793	1,974	2,235
India	$m	21	9	34	67	498
Indonesia	$m	27	40	38	38	39
Other [a]	$m	2,891	6,922	2,766	2,270	2,883
Total	**$m**	**102,861**	**152,975**	**132,489**	**124,131**	**137,850**

Notes: **a** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.3: Principal markets for Australia's LNG exports [a]

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24 [c]
Japan	$m	19,928	11,649	24,800	34,508	na
China	$m	16,277	11,377	21,420	19,833	na
Korea, Rep. of	$m	5,161	3,343	11,473	18,310	na
Taiwan	$m	2,593	2,237	7,521	12,070	na
Singapore	$m	1,039	175	2,377	3,165	na
Malaysia	$m	1,456	499	559	2,121	na
Other [b]	$m	1,071	1,198	2,421	2,231	68,588
Total	**$m**	**47,525**	**30,477**	**70,571**	**92,237**	**68,588**

Note: **a** Department of Industry, Science and Resources estimates based on International Trade Centre data; **b** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information; **c** LNG country data confidentialised for 2023-24 FY".
Source: ABS (2025) International Trade in Goods and Services, 5368.0; International Trade Centre (2025); Department of Industry, Science and Resources (2025).

Table 16.4: Principal markets for Australia's thermal coal exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
Japan	$m	8,347	7,009	23,819	37,712	15,972
China	$m	3,930	487	0	3,505	8,814
Taiwan	$m	2,386	2,060	6,636	9,456	4,840
Korea, Rep. of	$m	2,843	2,568	6,819	4,774	2,311
Vietnam	$m	1,041	711	1,688	2,205	1,800
Malaysia	$m	534	560	1,432	2,363	1,096
Other [a]	$m	1,295	2,613	5,863	5,485	2,382
Total	**$m**	**20,376**	**16,009**	**46,258**	**65,500**	**37,214**

Notes: **a** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.5: Principal markets for Australia's metallurgical coal exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
India	$m	7,489	7,580	20,889	17,078	15,376
Japan	$m	6,084	4,744	14,131	15,642	12,897
Korea, Rep. of	$m	3,033	2,732	9,430	8,249	6,829
Netherlands	$m	1,242	885	4,102	3,609	3,456
Taiwan	$m	1,993	1,332	3,967	3,752	3,057
China	$m	9,777	1,668	0	492	1,982
Other [a]	$m	4,626	4,246	15,070	13,101	10,577
Total	**$m**	**34,245**	**23,187**	**67,588**	**61,922**	**54,176**

Notes: **a** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.6: Principal markets for Australia's gold exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
Hong Kong (SAR of China)	$m	3,341	1,410	4,893	3,778	11,223
China	$m	824	2,028	8,179	8,141	5,119
United Kingdom	$m	12,707	8,934	196	1,217	3,497
Singapore	$m	1,423	2,933	1,607	3,480	3,054
India	$m	66	1,474	1,928	1,508	2,812
Korea, Rep. of	$m	192	841	1,446	428	2,022
Other [a]	$m	5,841	8,485	4,951	5,853	5,204
Total	**$m**	**24,394**	**26,105**	**23,200**	**24,406**	**32,931**

Notes: **a** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.7: Principal markets for Australia's lithium exports [a]

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
China	$m	na	na	4,725	19,788	9,473
Korea, Rep. of	$m	na	na	47	90	130
Belgium	$m	na	na	85	169	72
United States	$m	na	na	25	15	19
Other [b]	$m	na	na	90	92	115
Total	**$m**	**na**	**na**	**4,899**	**20,069**	**9,727**

Notes: **a** does not include lithium hydroxide; **b** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.8: Principal markets for Australia's copper exports

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
China	$m	3,787	2,747	1,958	2,351	2,588
Malaysia	$m	824	850	961	1,084	1,078
Korea, Rep. of	$m	651	1,315	1,375	1,410	852
Taiwan	$m	827	358	719	511	835
India	$m	463	626	941	457	709
Other [a]	$m	3,656	5,544	6,173	6,450	5,340
Total	$m	10,208	11,440	12,128	12,262	11,402

Notes: **a** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2025).

Table 16.9: Principal markets for Australia's alumina exports [a]

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
Bahrain	$m	0	0	923	1,559	1,614
UAE	$m	0	0	747	1,075	1,238
South Africa	$m	577	na	433	660	766
Qatar	$m	0	0	424	638	611
China	$m	0	0	323	421	589
Other [b]	$m	6,854	6,948	6,127	3,955	3,668
Total	**$m**	7,431	6,948	8,977	8,308	8,486

Note: **a** Department of Industry, Science and Resources estimates based on International Trade Centre data; **b** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; International Trade Centre (2025); Department of Industry, Science and Resources (2025).

Table 16.10: Principal markets for Australia's aluminium exports [a]

	Unit	2019–20	2020–21	2021–22	2022–23	2023–24
Korea, Rep. of	$m	1,138	905	1,029	1,538	1,429
Japan	$m	1,016	956	1,505	1,319	1,076
Vietnam	$m	273	370	397	318	537
Taiwan	$m	360	417	618	319	433
Thailand	$m	290	349	521	347	404
United States	$m	247	256	596	533	257
Other [b]	$m	368	510	1,044	907	956
Total	**$m**	**3,692**	**3,763**	**5,710**	**5,281**	**5,092**

Note: **a** Department of Industry, Science and Resources estimates based on International Trade Centre data; **b** may include 'No Country Detail' where various confidentiality restrictions may apply, see *International Merchandise Trade, Australia: Concepts, Sources and Methods 2018 Data confidentiality* for more information.
Source: ABS (2025) International Trade in Goods and Services, 5368.0; International Trade Centre (2025); Department of Industry, Science and Resources (2025).

Appendices

Appendix A Definitions and classifications

A.1 Exchange rates

In this report, the AUD/USD exchange rate (Australian dollar relative to the US dollars) is based on the median of economic forecasters at the time that the report is prepared. The source is the Bloomberg survey of economic forecasters.

World commodity prices are typically denominated in US dollars, and exchange rate movements can have a significant effect on the actual outcomes of commodity prices and export earnings. A change in the value of the US dollar against other floating international currencies can influence movements in world resources and energy prices. A change in the Australian dollar against the US dollar will impact on export earnings for domestic commodity exporters and producers. There is substantial uncertainty surrounding any exchange rate forecast, with changes to exchange rates influenced by changes in financial market sentiment, sometimes resulting in strong volatility.

A.2 Conversion to real dollars

Nominal values and prices are converted to real dollars using Australian and US consumer price indexes (CPI). The Australian and US CPI forecasts are based on the median of economic forecasters at the time that the report was prepared. The source is the Bloomberg survey of economic forecasters.

A.3 Time periods

The terms 'estimate', 'forecast' and 'projection' refer to different time periods in this report. Estimate refers to a time period that has passed, but for which full historical data is not yet available, while 'forecast' and 'projection' refer to different periods in the future. It is important to distinguish between different future time horizons, as factors affecting production, consumption and prices in the short-term differ from factors affecting these components in the medium to long-term. Forecasts also become increasingly imprecise over longer time horizons, due to increased risk and uncertainty. For these reasons, the Department of Industry, Science and Resources' Office of the Chief Economist (DISR OCE) uses different terminology to distinguish between short-term forecasts and medium to long-term projections, as outlined in *Table A2*.

Table A1: OCE terminology for different time periods/horizons

Period	Years	Terminology
Historical	Time period has passed but complete data for the period is not yet available	Estimate
Short-term	1 to 2 years	Forecast
Medium-term	3 to 5 years	Projection
Long-term	Beyond 5 years	n/a

Source: Department of Industry, Science and Resources (2022)

A.4 Commodity classifications

The DISR OCE defines exports for each commodity by a selected set of 8-digit Australian Harmonised Export Commodity Classification (AHECC) codes. Where possible, the choice of AHECC codes is based on alignment with international trade data, to ensure that direct comparisons can be made. For example, groupings for various commodities are aligned with classifications used by the International Energy Agency, World Steel Association, International Nickel Study Group, International Lead and Zinc Study Group, International Copper Study Group and World Bureau of Metal Statistics.

In this report, benchmark prices and Australian production and exports are forecast for 21 commodities, as shown in *Table A2*. In estimating a total for Australia's resources and energy exports, the remaining commodities, defined as 'other resources' and 'other energy', are forecast as a group.

Table A2: Resources and energy commodities groupings and definitions

	Resources (non-energy)	Energy
Definition	Resource commodities are non-energy minerals and semi-manufactured products produced from non-energy minerals	Energy commodities are minerals and petroleum products that are typically used for power generation
Australian Harmonised Export Commodity Classification (AHECC) chapters	25 (part); 26 (part); 28 (part); 31 (part); 73 (part); 74; 75; 76; 78; 79; 80; 81	27 (part)
Commodities for which data is published, forecasts are made and analysed in detail in this report	Aluminium; alumina; bauxite; copper; gold; iron ore; crude steel; nickel; zinc, lithium	Crude oil and petroleum products; LNG; metallurgical coal; thermal coal; uranium

Notes: The AHECC chapter is the first 2 digits of the trade code. Groupings are made at the 8-digit level.

Source: Department of Industry, Science and Resources (2022)

Appendix B Glossary

Term	Description
A$	Australian dollar
ABS	Australian Bureau of Statistics
AHECC	Australian Harmonized Export Commodity Classification
AISC	All-In Sustaining Cost – an extension of existing cash cost metrics and incorporates costs related to sustaining production.
Base metals	A common metal that is not considered precious (includes aluminium, copper, lead, nickel, tin, zinc)
Bbl	Barrel
Bcm	Billion cubic metres
Benchmark	A standard specification used to price commodities.
BF and BOF	Blast furnace and basic oxygen furnace – used in an integrated steelmaking process that uses iron ore and coal.
Bulks	Non-liquid and non-gaseous commodities shipped in mass and loose (iron ore, coal, bauxite)
CAGR	Compound annual growth rate
Capex	Capital expenditure
CFR	Cost and freight – Seller clears exports and pays freight.
CIF	Cost, Insurance, and Freight
Coal Seam Gas (CSG)	Natural gas found in coal seams. Also known as Coal Bed Methane (CBM)
Coke	Made by heating coal at high temperatures without oxygen, and used to reduce iron ore to molten iron saturated with carbon, called hot metal

Term	Description
Conventional gas	Natural gas that can be produced from reservoirs using traditional techniques. Contrasts with unconventional gas.
COVID-19	2019 Novel Coronavirus
CPB	CPB Netherlands Bureau for Economic Policy Analysis
CPI	Consumer Price Index – measures quarterly changes in the price of a basket of goods and services which account for a high proportion of expenditure by the CPI population group (i.e. metropolitan households).
Crude steel	Steel in the first solid state after melting, suitable for further processing or for sale.
DES	Delivered Ex Ship – price of LNG including shipping and insurance.
DISR	Department of Industry, Science and Resources
DMO	Domestic Market Obligation – a policy to reserve energy commodities for domestic usage
DRC	Democratic Republic of the Congo
ECB	European Central Bank
Economic growth	An increase in the capacity of an economy to produce goods and services, compared from one period of time to another. It is measured in nominal or real gross domestic product (GDP).
EIA	The United States Energy Information Administration
EAF	Electric arc furnace – a furnace that melts steel scrap using the heat generated by a high power electric arc.
ETF	Exchange Traded Fund – an exchange traded fund that allows investors to invest in gold on the exchange.
EUV	Export unit value – export value/volumes exported
EV	Electric vehicle
f	Forecast – a 2-year outlook
FEED	Front end engineering design

Term	Description
FID	Final investment decision
FOB	Free on board – seller clears export, buyer pays freight.
GAD	Gross air dried basis – for measuring coal quality.
GAR	Gross as received basis – for measuring coal quality.
GBP	Great Britain Pounds
GDP	Gross Domestic Product – measures the value of economic activity within a country/group.
GFC	Global Financial Crisis – the period of extreme stress in global financial markets and banking systems between mid-2007 and early 2009.
GJ	Gigajoule
GST	Goods and Services Tax – a value-added tax levied on most goods and services sold for domestic consumption.
HCC	Hard coking coal – the best grade of metallurgical coal used in the steel production process. Australian hard coking coal is regarded as the industry benchmark.
IEA	International Energy Agency
IMF	International Monetary Fund – an international organisation that promotes international financial stability and monetary cooperation.
IMO	International Maritime Organisation
IP	Industrial Production – measures the output of the industrial sector that comprises mining, manufacturing, utilities and construction.
IPO	Initial public offering – a process of offering shares of a private corporation to the public in a new stock issuance.
ISM	US Institute for Supply Management
ISM	Institute of Supply Management
JCC	Japan Customs-cleared Crude (or Japan Crude Cocktail) – average price of crude oil imported by Japan and a common price index in long-term LNG contracts.

Term	Description
JFY	Japanese fiscal year
kcal/kg	Kilocalories per kilogram
kt	Thousand tonnes
ktpa	Kilotonnes per annum
LBMA	London Bullion Market Association
LCE	Lithium Carbonate Equivalent
Li OH	Lithium Hydroxide
LME	London Metal Exchange
LNG	Liquefied natural gas
LNY	Lunar New Year
LPG	Liquefied petroleum gas
LVPCI	Low volatile pulverised coal injection – a type of low volatile coal used in the PCI process
m	Million
MMbtu	Million British thermal units
Mt	Million tonnes
mtpa	Million tonnes per annum
MW	Megawatts
Nameplate capacity	The theoretical maximum annual production capacity

Term	Description
NAR	Net as received basis – for measuring coal quality
NDRC	China's National Development and Reform Commission
NEV	New energy vehicle – term used for plug-in electric vehicles eligible for public subsidies (battery electric vehicles and plug-in hybrid vehicles)
OCE	Office of the Chief Economist
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of Petroleum Exporting Countries, a formal alliance of 14 countries to collaborate to manage the world oil market
OPEC+	Informal term for agreements between OPEC and ten other oil-producing countries (which are not members of OPEC)
Oz	Ounce
PCE	Personal Consumption Expenditure – a measure of the changes in price of consumer services and goods.
PCI	Pulverised coal injection – PCI coal is used for its heat value and injected directly into blast furnaces as a supplementary fuel, which reduces the amount of coke required.
PCI	Pulverised coal injection – a process used in blast furnace operations
PM	The afternoon price of gold set at 3:00 pm each business day at the London Bullion Market Association
PMI	Purchasing Managers Index – an indicator of economic health for manufacturing and service sectors.
PPP	Purchasing Power Parity – a way of measuring economic variables in different countries that equalise the purchasing power of different currencies
RoW	Rest of world
s	Estimate – Incomplete data or subject to revision
Shale gas	Natural gas found in shales
SDR	Special drawing right

Term	Description
SHFE	Shanghai Futures Exchange
SSCC	Semi-soft coking coal – a type of metallurgical coal used in the steel production process alongside hard coking coal, but results in a lower coke quality and more impurities.
Tariff	A tax on imports or exports that is used by governments to generate revenue or to protect domestic industries from competition.
Tight gas	Natural gas found in low quality reservoirs
TWI	Trade Weighted Index – a measure of the foreign exchange value of the US dollar against a basket of major foreign currencies.
U3O8	Triuranium octoxide – a compound of uranium.
UAE	United Arab Emirates
UK	United Kingdom
Unconventional gas	Natural gas that is more difficult to extract, including coal seam gas, shale gas and tight gas. Contrasts with conventional gas.
US	United States
US$	United States dollar
WEO	The International Energy Agency's World Energy Outlook
WTI	West Texas Intermediate crude oil price
z	Projection – a 5-year outlook

About this edition

The *Resources and Energy Quarterly* (REQ) contains forecasts for the value, volume and price of Australia's major resources and energy commodity exports. The 'medium term' (five year) outlook is published in the March quarter edition of the REQ. Each June, September and December edition of the REQ features a 'short term' (two year) outlook for Australia's major resource and energy commodity exports. A more concise version of the June and December REQ is under consideration for 2025.

Underpinning the forecasts/projections contained in the REQ is the outlook for global resource and energy commodity prices, demand and supply. The forecasts/projections for Australia's resource and energy commodity exporters are reconciled with this global context. The global environment in which Australia's producers compete can change rapidly. Each edition of the REQ factors in these changes and makes alterations to the forecasts and projections by estimating the impact on Australian producers and the value of their exports.

The REQ uses the IMF economic growth forecasts as the basis of its world growth forecasts.

In this report, commodities are grouped into two broad categories, referred to as 'resources' and 'energy'. 'Energy' commodities comprise metallurgical and thermal coal, oil, gas and uranium. 'Resource' commodities in this report are all other mineral commodities.

Unless otherwise stated, all Australian and US dollar figures in this report are in nominal terms. Inflation and exchange rate assumptions are provided in tables 2.1 and 2.2 in the Macroeconomic outlook chapter.

Information in this edition of the REQ is current as of 24 March 2025.