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Executive Summary

Australian resource and energy export earnings are forecast to decline by about 10% to \$372 billion in 2024–25, down from \$415 billion in 2023–24. The earnings falls of the past 2 years will lessen in 2025–26 — with exports forecast at \$351 billion. These forecasts are broadly consistent with the forecasts in the September 2024 Resources and Energy Quarterly (REQ).

World economic growth remains relatively soft. Modest economic growth in 2024 has been driven by the services sector, and more recently by easing monetary conditions in most major countries.

In the United States, growth remains firm (led by the service sector as manufacturing contracts), and inflation is nearly back down to target levels. In China, ongoing weakness in the residential property sector is still heavily weighing on consumer and business confidence and thus spending.

The gold price reached new highs in October, before US dollar strength saw a partial reversal in November. Easier monetary conditions and strong safe-haven demand have driven the net price gains. Gold is expected to overtake thermal coal to become Australia's fourth largest export by value behind iron ore, LNG and metallurgical coal in 2025–26.

Alumina prices have surged in recent months driven by reduced supply of alumina and bauxite from Australia and Guinea.

Other price changes since the September 2024 REQ include:

- declines in most base metals prices due to weaker Chinese economic performance
- oil prices have fallen on the back of rising non-OPEC supply and weakness in Chinese demand.

Resource commodity export volumes rose in the year to the December quarter 2024 but energy export volumes fell. Relatively strong prices, better weather conditions and easing workforce problems drove the gains. Most resource commodity export volumes are likely to pick up modestly as the world economy benefits from easier monetary conditions in 2025 and 2026.

Investment in Australia's resource and energy sectors declined in the September quarter 2024 from the same quarter in the previous year. Total capital spending edged off in quarterly terms, with declines across most categories outside of coal.

The incoming US Administration has flagged policy changes with implications for Australian resource and energy commodity producers. These policies will be factored into our forecasts as they are implemented.

Risks to Australian export earnings forecast in this report include:

- a broadening of conflict in the Middle East could disrupt oil and gas exports and raise prices
- a slower-than-expected global disinflation path
- extended contraction in China's property sector
- an increase in protectionist policies.

Overview



Australia's mining sector



Contributes to 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 Australian resource and energy exports **little changed from September**



World economic **growth remains moderate**, weighed down by still tight financial conditions

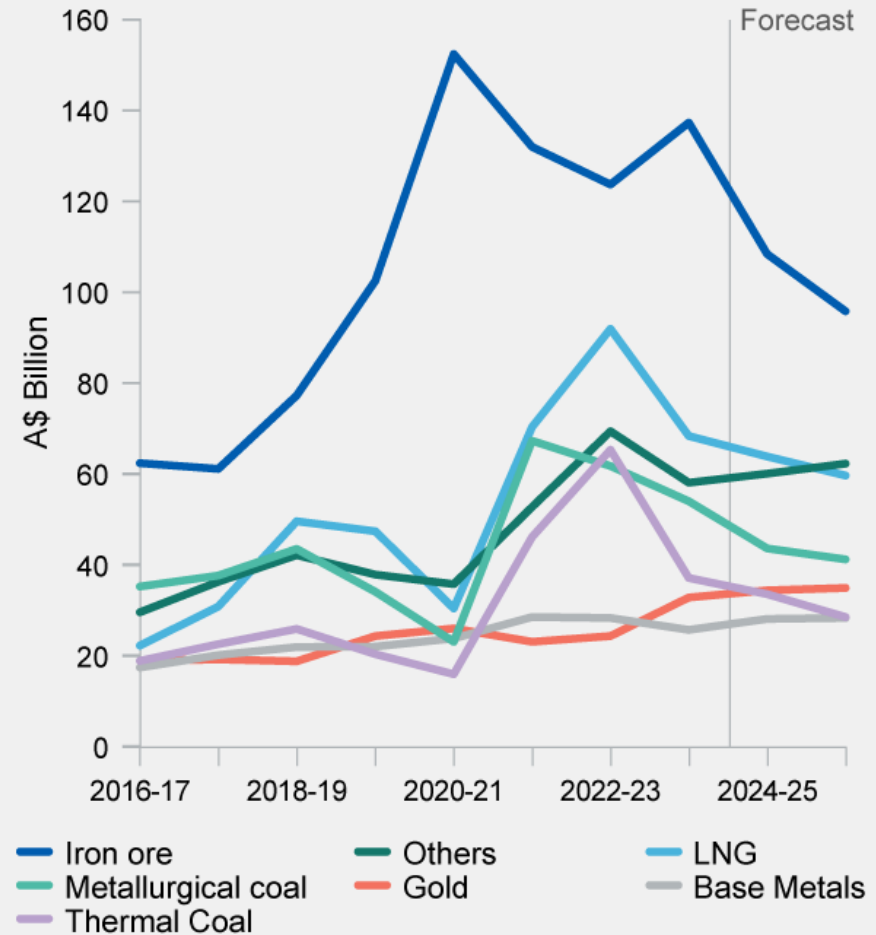


Gold price hitting new highs; weakness in lithium and nickel prices continues



Investment in new deposits and mines has **eased over the last 12 months**

Australia's resource and energy exports



SOURCE: ABS; DISR; OCE

1.1 Summary

- The near-term outlook for Australian resources and energy commodity exports is little changed in net terms since the September 2024 REQ. Steady world economic growth (and hence commodity demand) are forecast in 2025 and 2026.
- Australia's resource and energy exports are forecast to fall to \$372 billion in 2024–25 from \$415 billion in 2023–24 as commodity prices settle at lower levels than in 2022–23. Export earnings are expected to decline to \$351 billion in 2025–26.
- Strong demand has seen the gold price hit a new record high. Alumina prices have surged, primarily on bauxite supply concerns.

1.2 Macroeconomic, geopolitical and policy factors

Global growth steady with China still trying to boost growth

World economic growth remains relatively soft. Despite recent interest rate falls in advanced economies, growth continues to be weighed down by relatively tight financial conditions. Steady world economic growth (and hence commodity demand) is forecast in 2025 and 2026.

In response to relatively lacklustre economic activity, the Chinese Government has taken further measures to boost growth. There are signs China's economy is starting to respond. The IMF expects China's economy to grow by 4.8% in 2024, 4.5% in 2025 and 4.1% by 2026 — in line with a long-term trend towards lower growth.

A number of major central banks have lowered official interest rates further since the last REQ. Moves to a more neutral monetary stance by the world's major central banks should lift global economic growth and thus commodity demand over the outlook period.

Government policy changes impacting resource and energy commodities

In October, the Guinean government halted bauxite exports by Guinea Alumina Corporation. Guinea produces nearly one third of the world's bauxite. The halt has sparked a further surge in alumina prices.

The incoming US Administration has flagged changes in trade, fossil fuel production and climate change policy after it is sworn in on 20 January 2025. The impact of these policies on Australian resources and energy commodity exports is unclear at the time of writing, but could have an impact on the forecasts in this edition of the REQ.

Geopolitical tensions remain elevated, supporting oil and boosting gold

Geopolitical developments continue to pose risks to the outlook for commodity markets, raising prices for some commodities. The gold price continues to rise due to geopolitical tensions as investors seek safe havens. An escalation of conflict in the Middle East could impact the global supply of oil, gas and LNG, raising energy prices.

AUD expected to rise against the USD

The AUD/USD has declined in recent weeks. Worries over Australian exports to China and a surging US dollar have driven the decline. The market average forecast adopted is for the AUD/USD to lift in the outlook period by around 8%, from about 66 US cents in 2024 to 72 cents in 2026.

1.3 Export values

Australia's export values are forecast at \$372 billion in 2024–25

Relatively slow world economic growth generally saw flat or falling commodity prices over the December quarter. The Resources and Energy Export Values Index fell 5% from the September quarter 2024: a fall in volumes added to the impact of a fall in prices (Figure 1.1).

There have been minor revisions to the aggregate forecasts since September. Small upward revisions in some commodities have offset small downward revisions in others. Resource and energy exports are forecast to be \$372 billion in 2024–25 (down \$0.3 billion) and \$351 billion in 2025–26 (down \$3.6 billion) (Figure 1.2). Energy export earnings are set to show double digit falls.

- Lower **LNG** prices will see LNG earnings fall by \$4.6 billion to \$64 billion in 2024–25, and then fall to \$60 billion in 2025–26.

- **Thermal coal** exports are forecast to be \$34 billion in 2024–25, down slightly from \$37 billion in 2023–24.
- **Metallurgical coal** exports are expected to fall to \$43 billion in 2024–25 from \$54 billion in 2023–24.

Among resource commodities:

- **Iron ore** remains the largest earner, though lower prices will see export earnings fall by an estimated \$30 billion to \$108 billion in 2024–25 and \$96 billion in 2025–26.
- Surging **gold** prices are forecast to see gold exports rise to over \$34 billion in 2024–25, up from \$33 billion in 2023–24. Export values should be more than \$35 billion in 2025–26.
- A sharp rise in **alumina** prices is forecast to see alumina exports rise to \$11.5 billion in 2024–25, up from \$8.5 billion in 2023–24.
- Low **lithium** prices are forecast to see lithium exports fall to \$4.9 billion in 2024–25, down from \$9.9 billion in 2023–24 and \$20.1 billion in 2022–23. Export values should then rebound to \$6.5 billion in 2025–26.

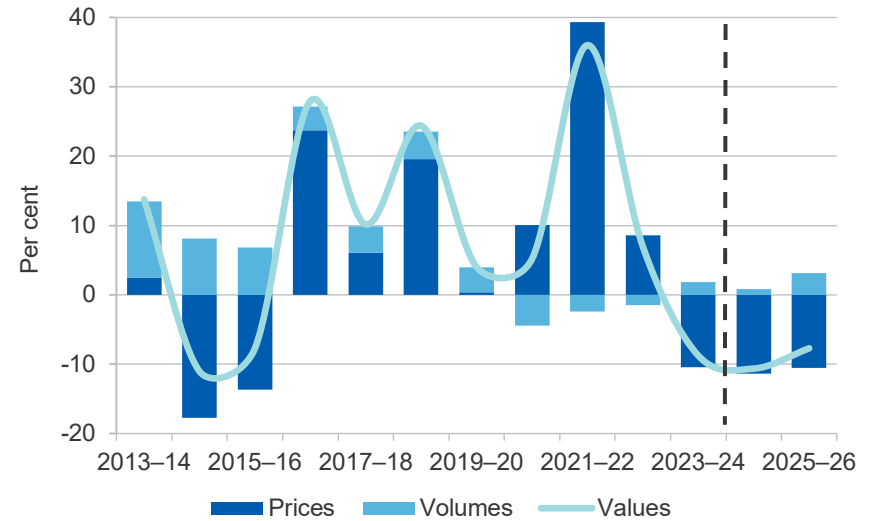
1.4 Prices

Since the September 2024 REQ, total resource and energy commodity prices have fallen in US\$ terms (Figure 1.3). Falls in the prices of oil and lithium have driven this trend.

In Australian dollar terms, the Resources and Energy Commodity Price Index fell by 0.9% in the December quarter 2024 to be down 13% year-on-year. In US dollar terms, the index fell by 2% in the quarter to be down 11% year-on-year. Resource export prices (in A\$ terms) were down 11% year-on-year, while energy prices fell by 14%.

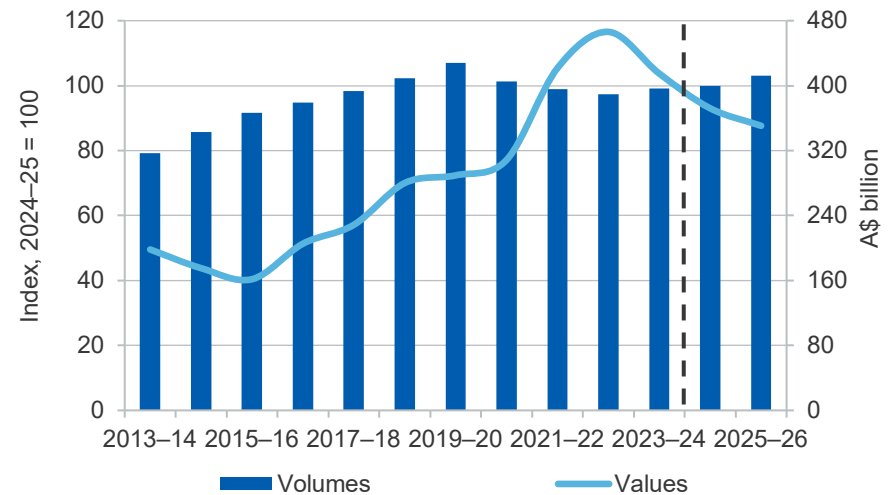
Iron ore prices rebounded in October 2024 but remain down by more than a quarter since the start of 2024. The falls reflect weak global demand driven by China’s ongoing property sector downturn, strong growth in iron ore supply and high stockpiles (Figure 1.4). **Metallurgical coal** prices stabilised at lower levels in October and November, supported by the start

Figure 1.1: Annual growth in Australia’s resources and energy export values, contributions from prices and volumes



Source: ABS (2024); Department of Industry, Science and Resources (2024).

Figure 1.2: Australia’s resource and energy export values/volumes



Source: ABS (2024); Department of Industry, Science and Resources (2024).

of production cuts at high-cost mines in the US. Prices should remain slightly above US\$200 a tonne throughout the outlook period. Supply is expected to rise modestly through to 2026 as new Australian production comes online, matched by a modest lift in global demand.

Energy prices have continued to decline from the highs seen in 2022 and 2023 as supply chains have adjusted to the Russian invasion of Ukraine. Slow world economic growth has constrained energy use.

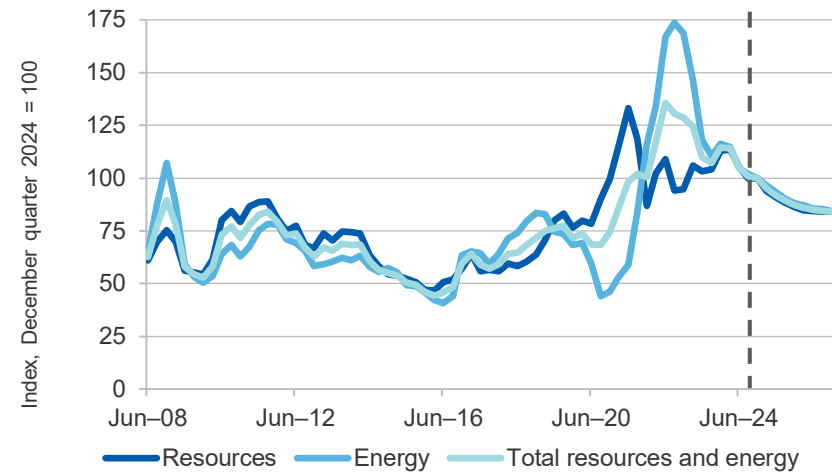
Oil prices have fallen since the last REQ, on the back of rising non-OPEC supply and weakness in Chinese demand. **Thermal coal** prices are still above pre-pandemic levels, with high power demand for cooling due to sustained hot weather in Asia, and some Russian coal remaining isolated from major markets because of trade restrictions. **LNG** prices have remained high, with more than a year of record temperatures pushing up Asian electricity demand. Prices will come under downward pressure from increasing US and Qatari supply in 2025.

The **gold** price set new records in the December quarter, peaking at US\$2,778 an ounce on 30 October 2024. This was due to: easing global monetary conditions, Chinese household concerns over China’s property and equity markets, and geopolitical tensions.

Base metal prices have varied since the last REQ (Figure 1.5). The price of **nickel** fell again as supply growth in Indonesia outweighed production cuts in other nations. **Copper** prices also declined, mainly due to market response to economic policy announcements from China and the impact of the stronger US dollar. However, **aluminium** prices lifted on the back of higher alumina prices, driven by production curtailment at the Kwinana alumina refinery in Western Australia and the halting of bauxite exports in Guinea.

Base metal prices are expected to rise over the outlook period on growing demand for clean-energy technologies and easier global monetary conditions. Nickel prices are expected to respond to ongoing production cuts, while a rebound in building activity and spending on renewable energy infrastructure will increase copper demand. Base metal inventories

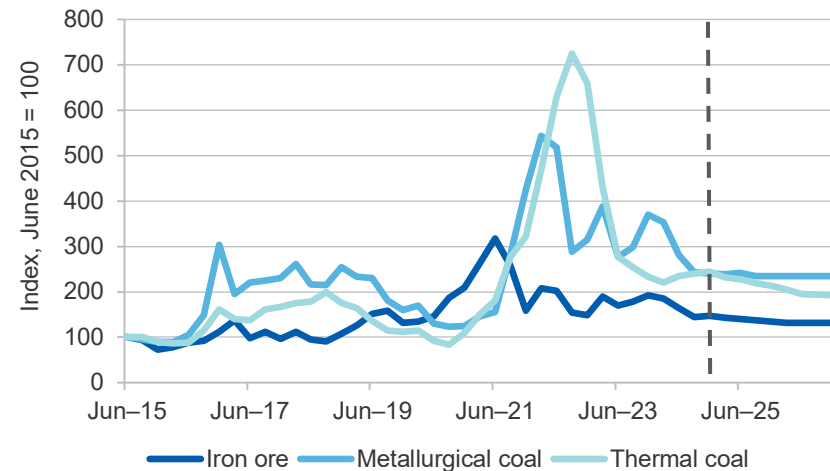
Figure 1.3: Resource and energy export prices, AUD terms



Notes: The export price index is based on Australian dollar export unit values (EUVs, export values divided by volumes); the export price index is a Fisher price Index, which weights each commodity’s EUV by its share of total export values.

Source: ABS (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024)

Figure 1.4: Bulk commodity prices



Notes: Prices are in US dollars, and are the international benchmark prices

Source: Bloomberg (2024); Department of Industry, Science and Resources (2024)

on metal exchanges are relatively low, which skews price risks for most metals to the upside. Since the last REQ, **lithium** prices (spodumene and lithium hydroxide) have declined. Inventories have risen and low prices are driving producers in a number of nations (including Australia) to announce production cuts and closures.

Uranium prices have moderated slightly in recent months, down from the historical highs which resulted from the major supply shock in early 2024. Rising demand and supply issues are expected to push prices up in 2025 and 2026.

1.5 Export volumes

Export volumes strengthened in the December quarter

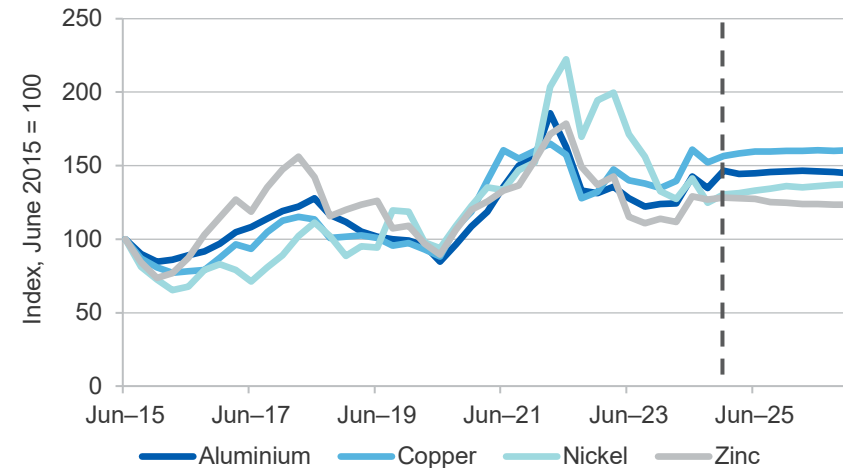
The Resources and Energy Export Volumes Index rose 2.4% in the December quarter 2024 from the September quarter 2024, but was down 0.8% on the December quarter 2023. Resource commodity export volumes rose by 1.6% in the year to the December quarter 2024 but energy export volumes fell by 3.7% (Figure 1.6). Relatively strong prices, better weather conditions and easing workforce problems drove the gains. Most resource commodity exports are expected to pick up modestly over the outlook to 2026.

1.6 Contribution to growth and investment

Mining output weakened in the September quarter

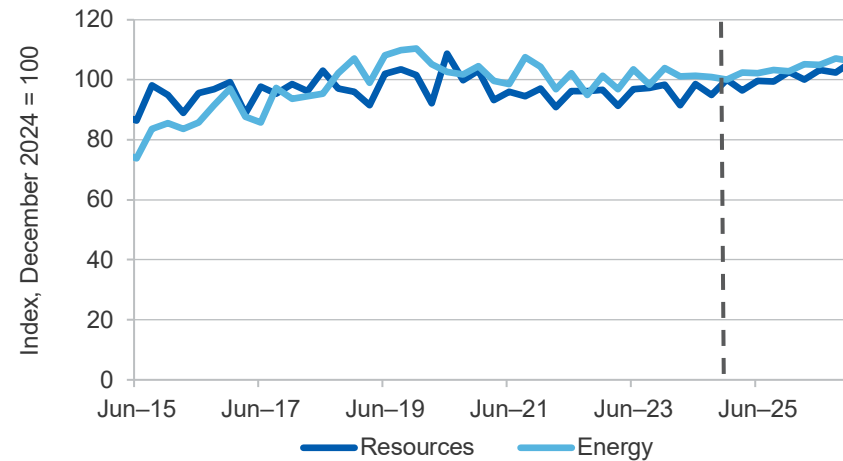
Australia's real GDP rose by 0.3% in the September quarter 2024, to be up 0.8% from a year before. Mining value-added fell by 0.8% in the September quarter and was 0.7% lower than in September 2023 (Figure 1.7). Falls in iron ore mining (down 3.3%), 'other' mining (down 2.9%) and oil and gas output (down 0.7%) were partly offset by a rise in coal mining (up 1.8%).

Figure 1.5: Base metal prices



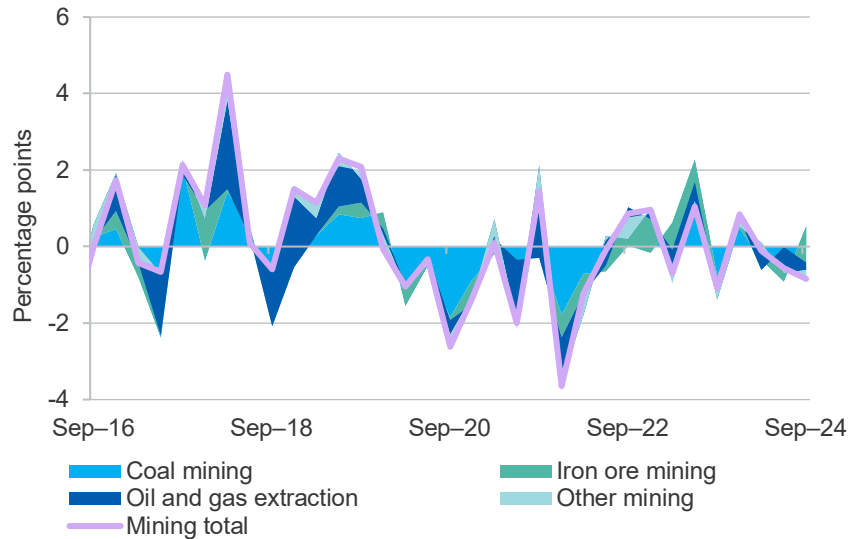
Notes: Prices are in US dollars, and are the international benchmark prices
Source: Bloomberg (2024); Department of Industry, Science and Resources (2024)

Figure 1.6: Resource and energy export volumes



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

Figure 1.7: Contribution to quarterly growth, by sector



Source: ABS (2024).

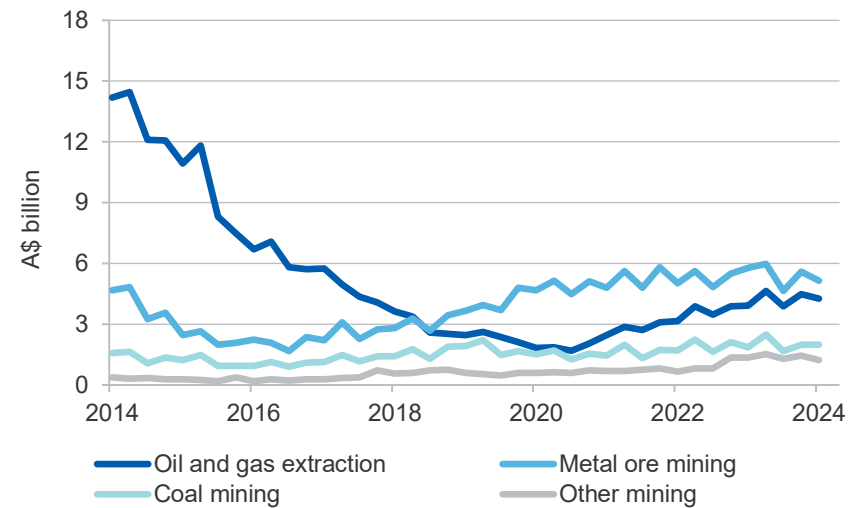
Mining investment has eased off over the last 12 months

The latest ABS Private New Capital Expenditure and Expected Expenditure survey shows that Australia’s resource and energy sectors invested \$12.6 billion in the September quarter 2024, down 2.1% from the September quarter 2023. Total capital spending edged off in quarterly terms, with declines across most categories outside of coal (Figure 1.8).

Expenditure for buildings and structures fell by 1.3% in the September quarter from the previous quarter, while investment in equipment, plant and machinery rose by 0.2% (Figure 1.9). Both categories have recovered from the lows of 2021.

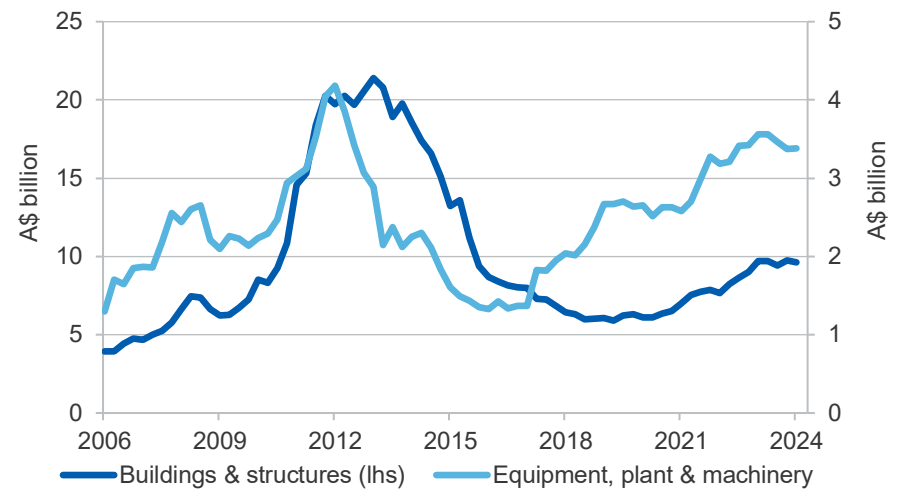
Spending on plant and machinery has accounted for a steadily rising share of total investment spending since 2017. However, in recent years, spending on buildings and structures has started to correlate with spending on plant and equipment. Total mining industry investment rose by 12% in 2023–24. The sixth estimate for 2024–25 (\$54 billion) is more than 15% higher than the first estimate.

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 (2024).

Figure 1.9: Mining industry capital expenditure by type, quarterly



Notes: Chart data is in nominal terms, seasonally adjusted.
Source: ABS (2024).

Exploration declining due to lower critical mineral prices and rising costs

Mineral and petroleum exploration expenditure (in seasonally adjusted terms) declined in the September quarter 2024 to be 10% lower year-on-year. Lower exploration spending was largely driven by declines in mineral exploration, though petroleum exploration spending was also weak.

Mineral exploration expenditure declined to \$1.0 billion in the September quarter 2024, down by 12% year-on-year. This was the largest annual decline since the December quarter 2015. Greenfield exploration accounted for most of the fall, with metres drilled on new deposits down by 15% year-on-year.

Annual increases in exploration expenditure were reported for iron ore (up 10%) and uranium (up 53%), however spending declined across all other commodity categories. Commodities accounting for the largest share of the decline were base metals, including copper and nickel (down by 26%), other minerals, including lithium (down by 22%) and gold (down by 9.7%).

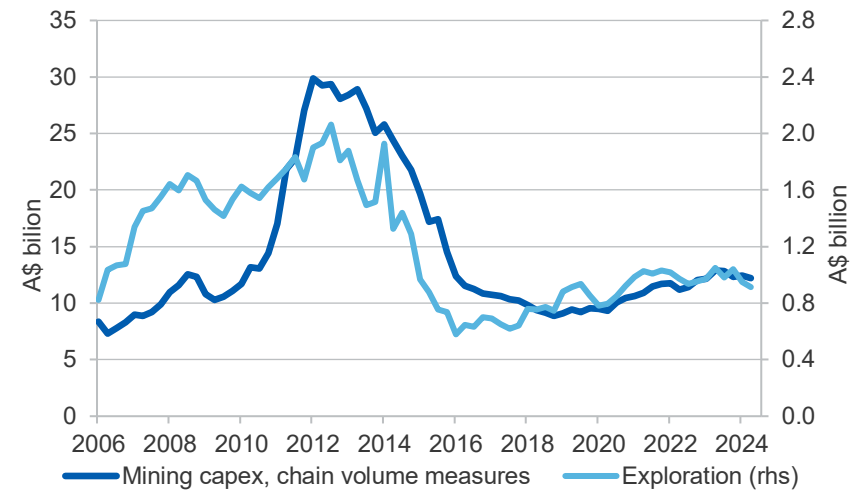
Mineral exploration expenditure over the last 12 months has declined for critical minerals such as lithium and nickel due to lower prices over the period. This follows strong exploration expenditure growth and prices for these minerals through 2022 and 2023. Coal exploration declined, reflecting the long-term decline in the coal demand outlook as efforts to reach net zero expand.

Petroleum exploration spending in the September quarter fell by 4% year-on-year with offshore exploration accounting for most of this decline.

Increasing exploration costs also appear to be contributing to weaker mineral exploration activity. Average mineral exploration costs implied by expenditure per metre drilled indicate costs have risen by 22% in real terms over the past 5 years, although they remain below the levels reached during the peak of the mining boom (Figure 1.11).

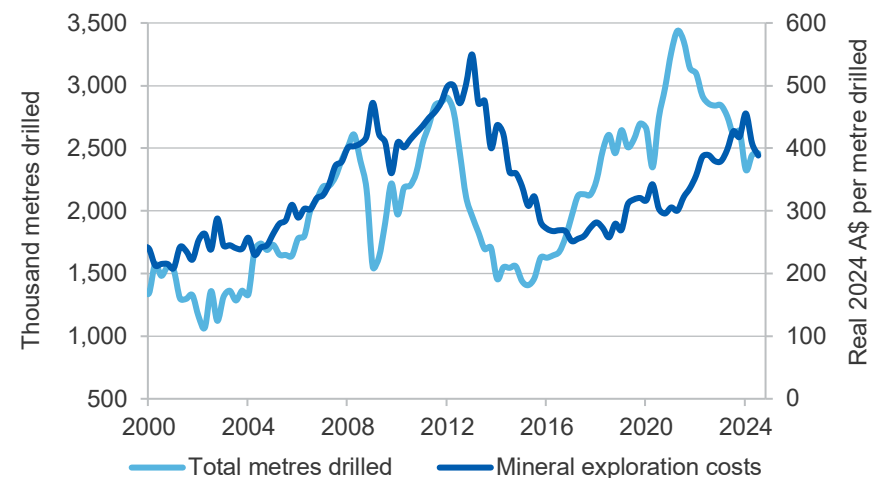
Exploration spending is a leading indicator of broader capital investment in the sector, so significant increases or decreases in exploration activity can be a lead indicator of future investment. Given the typical lags involved,

Figure 1.10: Mining capital expenditure vs exploration (real, quarterly)



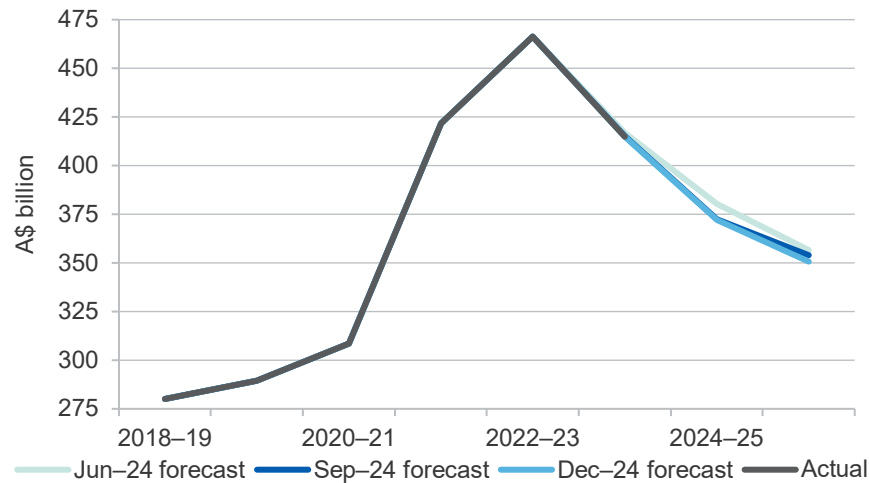
Note: Data are in 2011–12 prices.
Source: ABS (2024); DISR estimates (2024).

Figure 1.11: Metres drilled for mineral exploration and costs (in real terms) implied by expenditure per metre drilled



Note: Total metres drilled are in seasonally adjusted terms.
Source: ABS (2024); DISR estimates (2024).

Figure 1.12: Resource and energy exports, by forecast publication



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

capital spending by resource and energy companies is still expected to rise modestly in 2024–25. Further data releases in H1 2025 are expected to provide further insights on whether the recent declines are part of a broader trend towards lower mineral exploration in Australia and will be examined in more detail in forthcoming editions of the REQ.

1.7 Revisions to the outlook

The forecast for 2024–25 is \$0.3 billion lower and the 2025–26 forecast is \$3.6 billion lower than the forecasts contained in the September 2024 *Resources and Energy Quarterly* (Figure 1.12).

The 2024–25 forecast revisions reflected weaker than expected LNG and lithium exports more than offsetting slightly stronger than expected earnings from bulk commodities, gold and alumina. The 2025–26 forecast revisions have been largely driven by downward revisions to iron ore earnings.

Figure 1.13: Australia's major resources and energy commodity exports, nominal

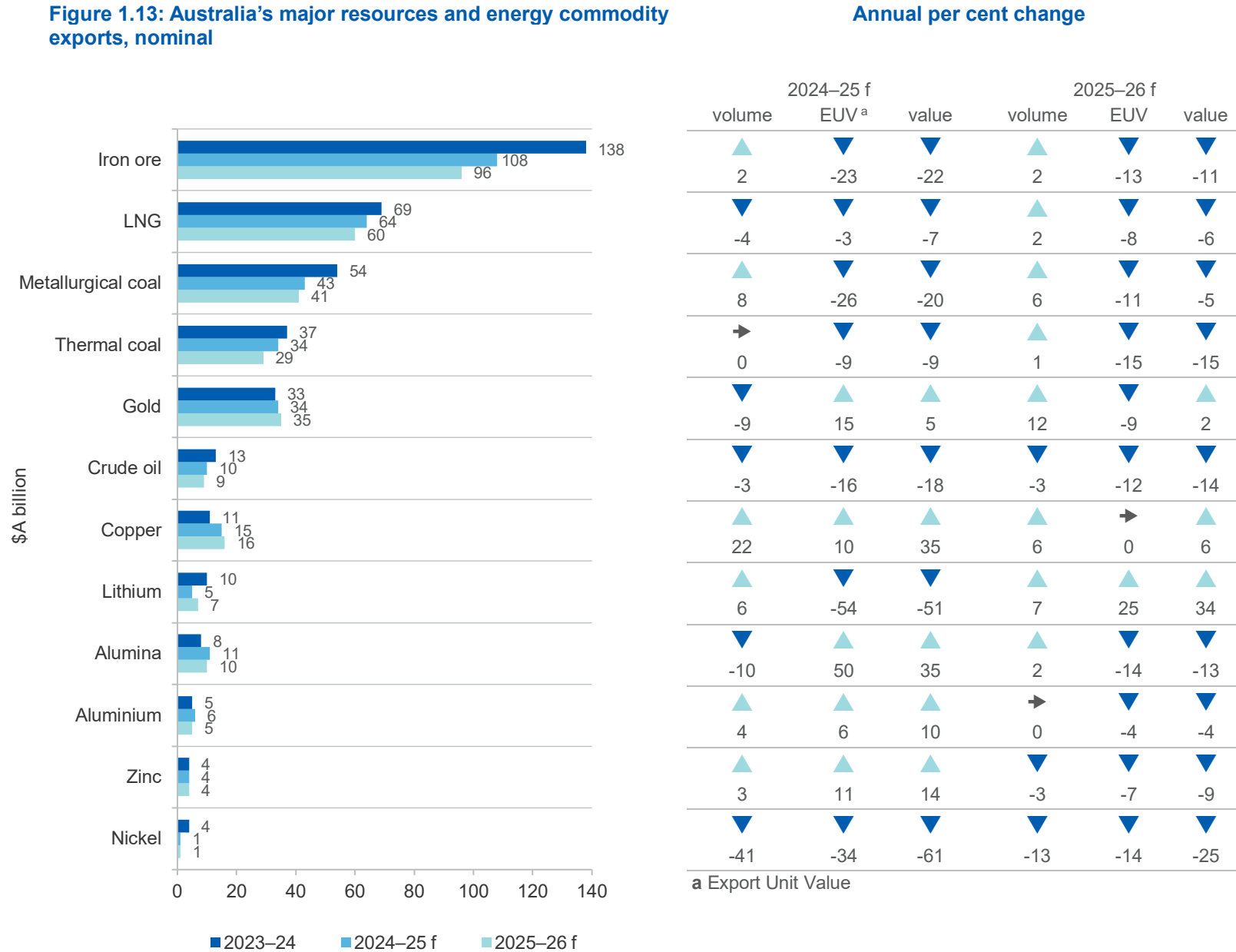


Table 1.1: Outlook for Australia's resources and energy exports in nominal and real terms

Exports (A\$m)	2022–23	2023–24	2024–25 ^f	2025–26 ^f	Percentage change			
					2022–23	2023–24	2024–25 ^f	2025–26 ^f
Resources and energy	466,200	414,848	372,064	350,540	10.6	–11.0	–10.3	–5.8
– real ^b	498,549	425,729	372,064	339,191	3.3	–14.6	–12.6	–8.8
Energy	238,711	180,154	158,108	145,298	17.0	–24.5	–12.2	–8.1
– real ^b	255,274	184,879	158,108	140,593	9.3	–27.6	–14.5	–11.1
Resources	227,489	234,694	213,956	205,243	4.5	3.2	–8.8	–4.1
– real ^b	243,274	240,850	213,956	198,598	–2.3	–1.0	–11.2	–7.2

Notes: **b** In 2024–25 Australian dollars; **f** forecast.

Source: ABS (2024); Department of Industry, Science and Resources (2024).

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

	Unit	Prices			Unit	Export volumes			Export values, A\$b		
		2023–24	2024–25 ^f	2025–26 ^f		2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Iron ore	US\$/t	103	83	77	Mt	898	914	928	138	108	96
LNG	A\$/GJ	16.1	15.6	14.3	Mt	81	78	79	69	64	60
Metallurgical coal	US\$/t	285	211	205	Mt	151	163	174	54	43	41
Thermal Coal	US\$/t	136	136	120	Mt	205	204	205	37	34	29
Gold	US\$/oz	2,079	2,552	2,391	t	258	234	263	33	34	35
Crude oil	US\$/bbl	85	74	69	Kb/d	263	256	250	13	10	9
Copper	US\$/t	8,680	9,477	9,690	Kt	755	924	982	11	15	16
Lithium	US\$/t	1,833	878	1,075	Kt	431	447	493	9.9	4.9	6.5
Alumina	US\$/t	363	545	492	Kt	15,877	14,344	14,652	8.5	11.5	10.0
Aluminium	US\$/t	2,266	2,521	2,580	Kt	1,432	1,489	1,495	5.1	5.6	5.4
Zinc	US\$/t	2,552	2,796	2,726	Kt	1,327	1,361	1,326	3.8	4.3	3.9
Nickel	US\$/t	18,149	16,915	17,625	Kt	133	79	69	3.6	1.4	1.0
Uranium	US\$/lb	82	83	93	t	5,742	6,152	6,933	1.2	1.4	1.7

Notes: **a** Export data covers both crude oil and condensate; **b** 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 (2024); LME (2024); London Bullion Market Association (2024); The Ux Consulting Company (2024); US Department of Energy (2024); Metal Bulletin (2024); Japan Ministry of Economy, Trade and Industry (2024); Department of Industry, Science and Resources (2024).

Macroeconomic Outlook



Global GDP and economic change in 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 change	▲ 5.2%	▲ 2.9%	▲ 0.6%	▲ 8.2%	▲ 4.0%	▲ 1.7%	▲ 1.4%	▲ 1.3%	▲ 2.0%
Share of Australia's two-way trade	30%	6%	9%	4%	10%	12%	7%	4%	–

Global overview

- Outlook for the global economy in 2025 and 2026 is stable. Inflation continues to moderate in most Advanced Economies.
- Global industrial production growth has softened in recent months, and forward indicators of global manufacturing activity point to weakness as 2024 ends and 2025 begins.
- China's economic growth has been subdued with year-on-year growth down to 4.6% in September.



Global risks

- Continuation of China's property sector downturn could further weigh on the Chinese economy
- Increasing risks to global trade and geoeconomic fragmentation
- Tight monetary policy for longer if inflation pressures, including volatility in financial markets.



SOURCE: IMF; ABS; OCE

2.1 Summary

- The outlook for the global economy in 2025 and 2026 is stable, with inflation continuing to moderate in most advanced economies.
- Global industrial production growth has slowed in recent months. Forward indicators of global manufacturing activity point to weakness as 2024 ends and 2025 begins.
- China's economic growth has been subdued in recent quarters, as weakness in the residential property market continues to weigh on Chinese activity and investment.

2.2 World economic outlook

Global growth outlook remains steady, but underwhelming

The International Monetary Fund's (IMF) October 2024 forecast for world economic growth was unchanged from its July outlook at 3.2% in 2024. Growth in 2025 is forecast to be 3.2% — a downgrade of 0.1 percentage points from the prior forecast, rising to 3.3% in 2026 (Figure 2.1). The world trade outlook was unchanged from the July 2024 World Economic Outlook, with trade expected to grow by 3.1% in 2024 and 3.4% in 2025.

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 central banks' expectations. Global shipping costs, while still elevated, have eased from their July 2024 peak. Services inflation continues to decline, although rent inflation remains high in several countries.

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. Overall, the IMF considers risks to the global outlook have shifted slightly to the downside. Key risks include further financial market volatility prompting tighter financial conditions, especially in developing economies; a slower-than-expected global disinflation path; extended contraction in China's property sector; and an increase in

protectionist policies, exacerbating global trade tensions.

Stronger US outlook offsets downgrades to growth outlook for Europe

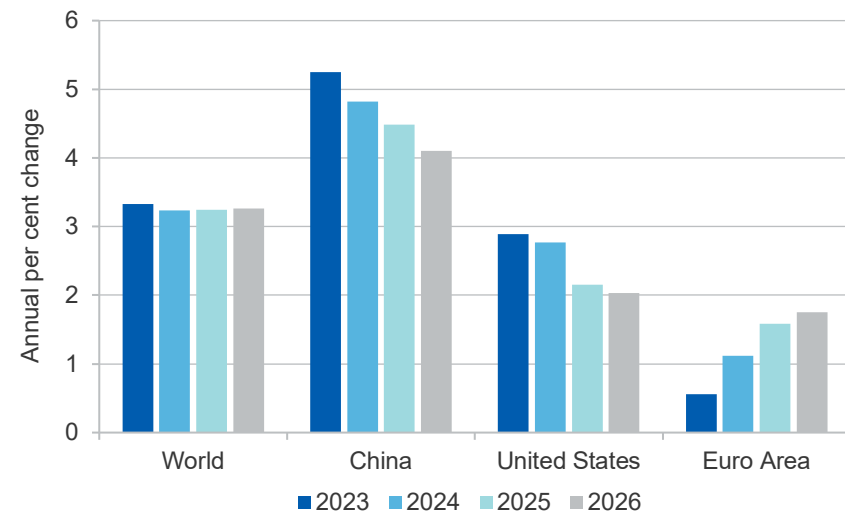
United States' GDP growth was stronger than expected in the September 2024 quarter. Higher household consumption, income and savings for the June quarter point to a stronger US consumption outlook than was reported in the September 2024 *Resources and Energy Quarterly* (REQ).

In the Eurozone, the growth outlook has weakened, with softer growth expected in 2025 in Germany, France and Italy. Germany's economy is experiencing strain from fiscal consolidation and a sharp decline in real estate prices. These conditions are adding to the deep and protracted downturn in Germany's manufacturing sector.

China has announced new policy measures to boost growth

China's growth has been subdued in recent quarters. While net exports made a substantial contribution to September quarter GDP growth, domestic demand growth has weakened along with expenditure growth

Figure 2.1: GDP growth forecasts



Source: IMF (October 2024)

and local government revenues. The weaker-than-expected growth prompted Chinese authorities to announce a comprehensive policy package in the December quarter, including fiscal, monetary and property market measures.

Rising demand for semiconductors driven by investment in AI

Sharply rising demand for semiconductors and electronics, driven by large investments in artificial intelligence, has improved the growth outlook for several Asian economies, including Korea and Taiwan.

In Japan, total growth by the end of 2024 is expected to be weak due to supply disruptions and weak private investment at the start of the year. However, growth is expected to pick up in 2025, due to stronger private consumption as real wage growth strengthens. India's growth is expected to moderate in 2025 as demand built up during the pandemic subsides further. But the outlook remains strong due to healthy domestic demand and a positive outlook for manufacturing.

Global manufacturing has weakened in recent months

Global industrial production growth has softened in recent months, increasing by an estimated 1.8% year-on-year in the September 2024 quarter, down from 1.9% in the June quarter. Growth in China and emerging Asia was offset by weaker growth in advanced economies.

Forward indicators of global manufacturing activity point to weakness as 2024 ends. Although output stabilised, falling new orders saw the JP Morgan Global Manufacturing Purchasing Managers Index (PMI) contract in October 2024 for the fourth month in a row. Although the index stabilised in November due to a slight expansion in manufacturing output, new export orders fell for the sixth month in a row.

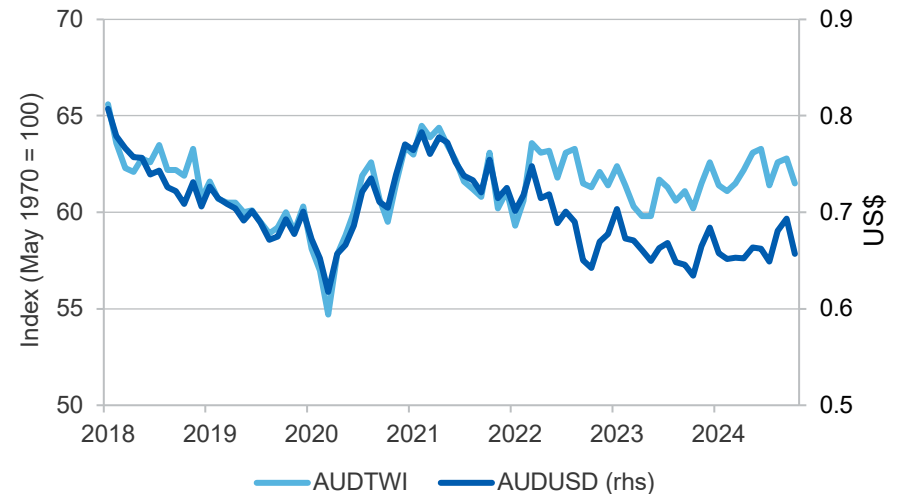
China's industrial production growth picked up in September 2024 to achieve the fastest rate of expansion since May, amid the government's efforts to spur growth. Ongoing weaknesses in Europe's manufacturing sector points to a slower recovery among its major industrial producers,

with the manufacturing downturn continuing into the final quarter of 2024. India's manufacturing PMI rebounded in October 2024 due to expanding new orders and international sales. US industrial production continued to fall in the December quarter. Uncertainty ahead of the Presidential election was cited as a key reason for new orders continuing to fall. However, the pace of new order decline eased, and production falls were the smallest since August 2024.

Exchange rate assumptions have been revised up slightly for 2025

Since the start of 2024, the Australian dollar has largely been steady against the US dollar (Figure 2.2). 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. This leads to an upgrade of about US\$0.01 in 2025 and 2026 compared with the September 2024 REQ.

Figure 2.2: Australian trade-weighted index and AUD/USD



Source: RBA (2024)

Table 2.1: IMF annual GDP growth projections for major trading partners

	2023	2024 ^a	2025 ^a	2026 ^a
World ^b	3.3	3.2	3.2	3.3
China ^c	5.2	4.8	4.5	4.1
Japan	1.7	0.3	1.1	0.8
South Korea	1.4	2.5	2.2	2.2
India ^d	8.2	7.0	6.5	6.5
ASEAN-5 ^e	4.0	4.5	4.5	5.1
Eurozone	0.6	1.1	1.6	1.7
United States	2.9	2.8	2.2	2.0

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 (2024); Bloomberg (2024)

Table 2.2: Exchange rate and inflation assumptions

	2023	2024 ^a	2025 ^a	2026 ^a
AUD/USD exchange rate	0.66	0.66	0.70	0.72
Inflation rate ^b				
United States	4.1	3.0	1.9	2.1
	2022–23	2023–24 ^a	2024–25 ^a	2025–26 ^a
Australia	7.0	4.2	2.6	3.3

Notes: **a** Assumption; **b** Average CPI growth over the specified year (fiscal or calendar).

Sources: ABS (2024) Consumer Price Index, 6401.0; Bloomberg (2024); DISR (2024); RBA (2024); IMF (2024)

Iron Ore



Australia's iron ore sector



World's no.1
for iron ore
resources

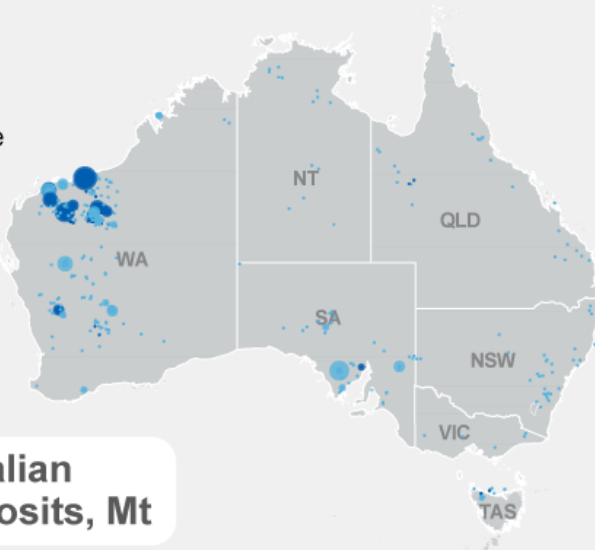


Largest
iron ore producer
in the world



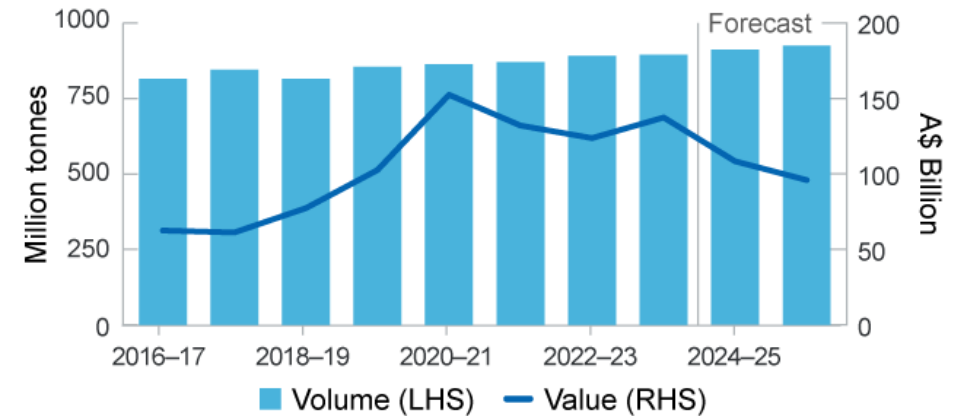
892m tonnes
of iron ore
exported in 2023

- Deposit
- Operating mine
- <229
- 230–813
- 814–1,777
- 1,778–3,042
- 3,043–5,446
- >5,447



**Major Australian
iron ore deposits, Mt**

Australian iron ore exports



Outlook



Ore prices stabilise
due to Chinese
stimulus, but markets
remain cautious



Future export
earnings to **fall** as
prices decline



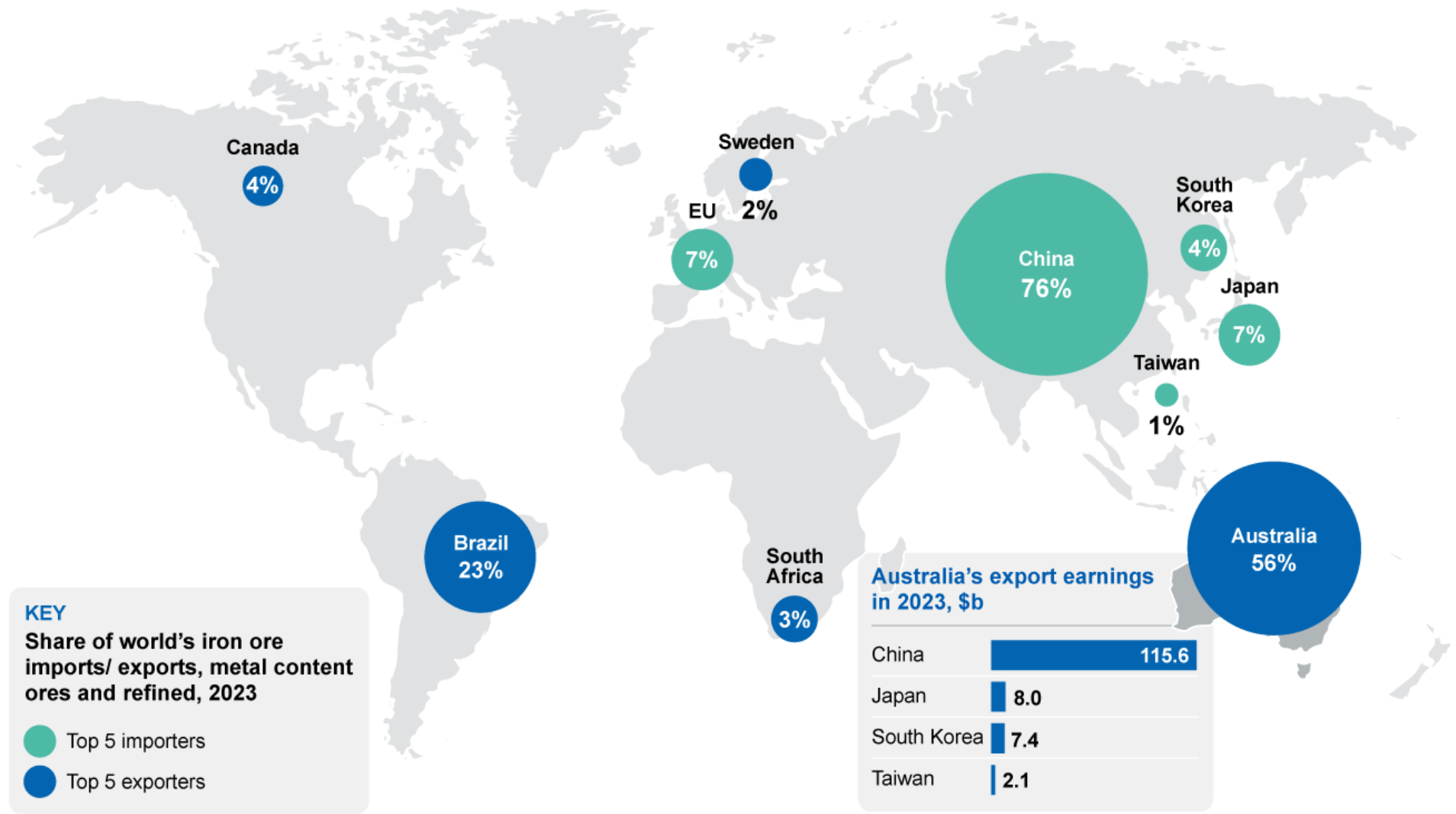
Australian **export**
volumes rising, with
further greenfield
supply expected



Exploration
expenditure **remains**
strong

SOURCE: GA; ABS; DISR; OCE

Iron Ore TRADE MAP



SOURCE: ITC Comtrade; ABS

3.1 Summary

- Spot iron ore prices rebounded in October 2024, driven by positive sentiment associated with China's economic policy announcements, but have since moderated.
- Australian iron ore export volumes over H2 2024 have continued to increase, reflecting improved productivity and ongoing ramp ups in newer mines. Export volumes are expected to rise steadily, increasing by around 1.7% a year over the next two years.
- Lower prices projected over the outlook period will reduce Australia's iron ore export earnings from \$138 billion in 2023–24 to \$108 billion in 2024–25 and \$96 billion in 2025–26.

3.2 World steel production and demand

After three years of weakness, global steel demand to recover in 2025

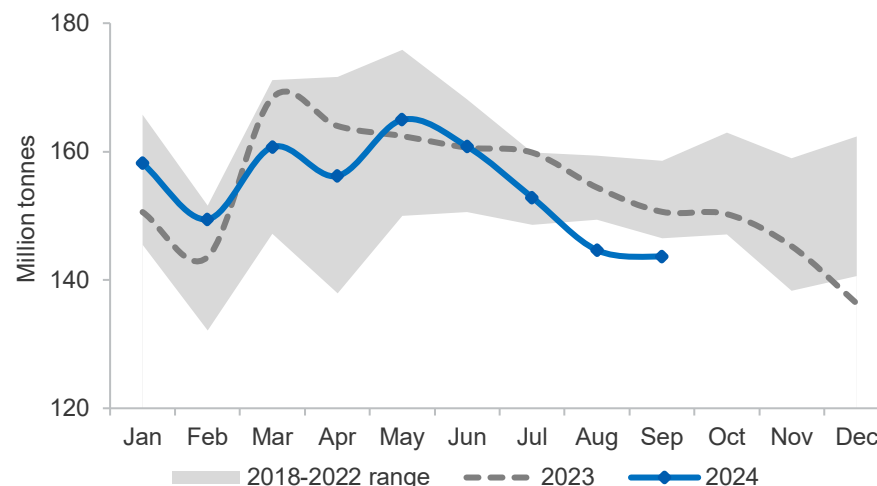
World steel production has been relatively weak in 2024, falling noticeably in H2 2024. In the nine months to September 2024, global production was 1,391 Mt (million tonnes), 1.6% or 23 Mt below the corresponding period in 2023 (Figure 3.1).

The deterioration in the global steel market has resulted in downward revisions to expected world steel production for 2024. In October 2024, the World Steel Association downgraded its short-term steel demand outlook for most major economies, noting the persistent weakness in global manufacturing as well as lingering global economic headwinds.

World steel demand is now expected to fall by 0.8% in 2024, the third consecutive yearly decline. Steel demand continues to be affected by the weakness in industrial output that has persisted since early 2023 (Figure 3.2). Ongoing weakness in housing construction — due to declines in household purchasing power and tight financing conditions — also continues to affect steel demand.

Global steel demand is forecast to grow by 1.3% a year over the outlook period (2024 to 2026). While China's residential property sector has yet to recover, the effects of looser monetary policies in advanced economies should see Western steel demand recover gradually in 2025. Demand

Figure 3.1: Global monthly steel production



Sources: Department of Industry, Science and Resources (2024); World Steel Association (2024)

growth is expected to be highest in South and South-East Asia (particularly India), the Middle East, and North America.

Global steel production is expected to record zero growth in 2024, down from the weak growth in 2024 expected in the September 2024 REQ (Table 3.1). World steel production is projected to gradually recover over the next two years, increasing by 0.9% in 2025 and by 1.3% in 2026. Steel production will be supported by new steelmaking capacity — either under construction or planned — with large-scale projects in Asia, North America, Europe and the Middle East.

However, strong growth in global steel capacity, combined with sluggish steel demand, has meant that excess capacity is rising. Global crude steelmaking capacity exceeded global steel production by over 500 million tonnes in 2023, with the OECD warning that excess steel capacity will become increasingly problematic in coming years.

Chinese steel mills increase production as margins improve

In recent months, the challenging conditions faced by Chinese steel mills

throughout much of 2024 have improved. This improvement followed a series of policy announcements by the Chinese Government through September to November 2024, aimed at lifting consumer and business sentiment and supporting economic growth.

In October 2024, China's monthly steel output rose 3.5% year-on-year to leave production for the first 10 months of 2024 2.6% below the same period in 2023 (Figure 3.3). The measures, which followed mounting steel mill losses, resulted in a pick-up in Chinese steel prices, boosting steel mill profitability (Figure 3.4). Following the policy announcements in September, daily hot metal production rose sharply in October.

In early November, the National People's Congress Standing Committee announced further policy adjustments. The package centrepiece was debt relief for local governments via increased debt ceilings and extended repayment periods. However, markets were underwhelmed by the headline RMB 10 trillion announcement. Only around RMB 6 trillion was new funding and there was no direct support for housing or consumption.

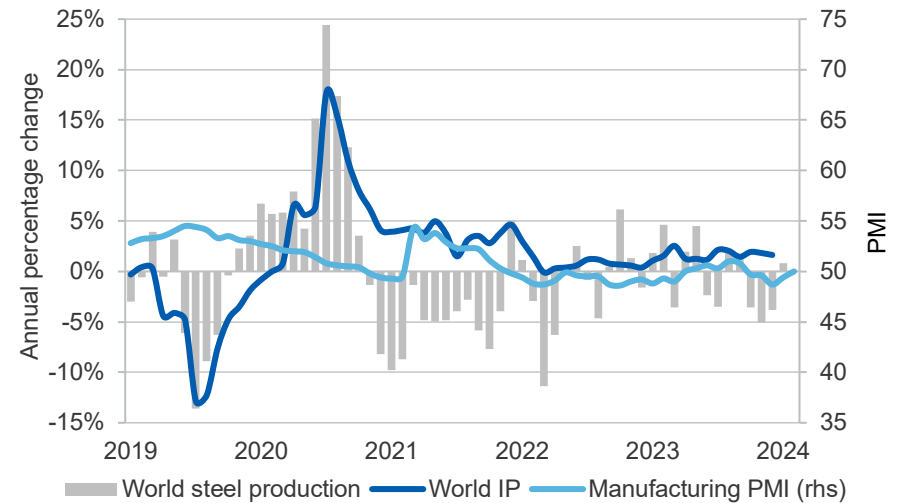
China's property sector — which accounts for around 30% of China's steel demand — remains a key cause of China's weak steel demand. The sector has shown little indication of stabilising in the final months of 2024. New construction starts — the most steel-intensive stage of the construction process — continue to fall, down 22% in the year to September 2024 compared with the same period last year.

The compositional shift in Chinese investment from property to advanced manufacturing — particularly electric vehicles, new energy components and infrastructure including solar, wind and batteries, and shipbuilding — is partly offsetting the property sector weakness.

New infrastructure investment in China, as well as the new measures by the Chinese government to alleviate weakness in the domestic property sector, will also provide support for construction — and hence steel and iron ore prices — over the next few years. However, addressing the deep structural issues and rebuilding buyer confidence is likely to take years.

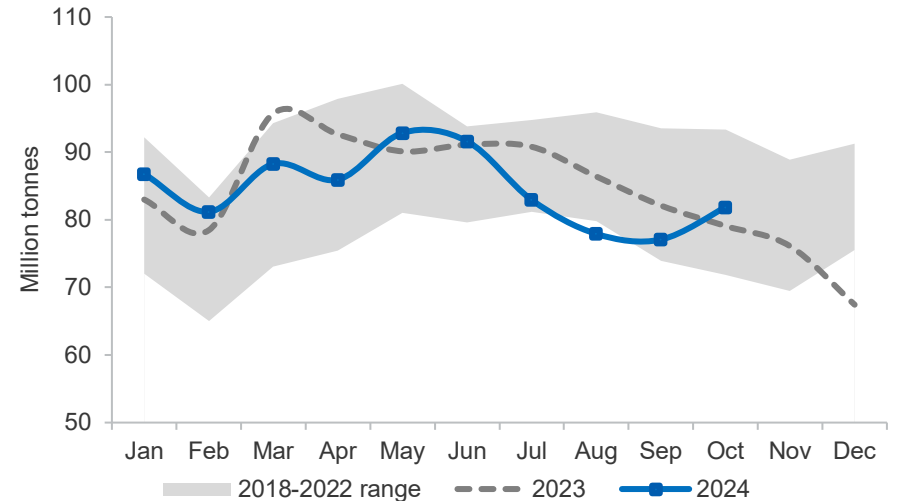
China's steel exports are currently at near-decade highs — exports in

Figure 3.2: World manufacturing PMI and industrial output



Notes: JPMorgan Global Manufacturing Index; a reading above 50 indicating an overall increase compared to the previous month, and below 50 an overall decrease
Sources: Bloomberg (2024); S&P Global (2024); World Steel Association (2024)

Figure 3.3: China's monthly steel production



Sources: Department of Industry, Science and Resources (2024); World Steel Association (2024)

October 2024 were the highest since September 2015. Exports have been increasingly important in supporting China's steel sector through the protracted domestic property downturn. However, increasing trade sanctions resulting from the large volumes of cheap Chinese steel entering world markets could disrupt global steel markets. Some market commentators have highlighted the potential for Chinese exporters to bring forward exports over the next few months ahead of a possible escalation of trade tensions in 2025.

Overall, China's steel production is expected to fall by 1.8% in 2024, a downgrade from the September 2024 REQ. The downward revision reflects further falls in Chinese steel output in H2 2024. This downward trend is expected to continue over the rest of the outlook period, albeit at a more moderate pace (Table 3.1). China's steel demand, which peaked in 2020, is forecast to continue to fall by 0.5% a year to 2026.

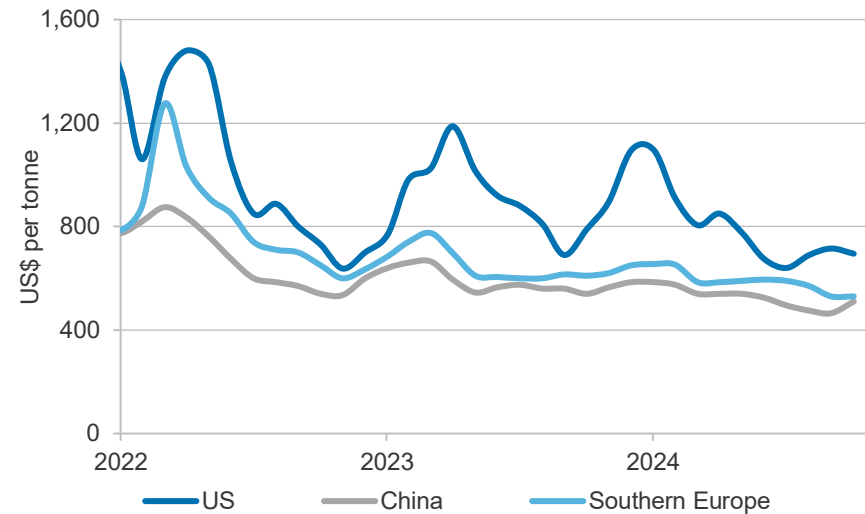
India's steel production continues to grow to meet domestic demand

Global steel production outside China has been flat over 2024, increasing by a modest 0.4% in the year to September 2024. India continues to lead steel production growth, increasing by 5.9% in the year to September 2024 (Figure 3.5). Substantial production capacity is expected to be added through to the end of the decade, with the Government aiming to increase steel capacity from around 150 Mt in 2024 to 300 Mt by 2030.

The European steel outlook continues to be weighed down by weakness in construction and manufacturing. Nevertheless, European steel production is expected to rise by 1.6% in 2024, regaining a little of the ground it lost over the past two years.

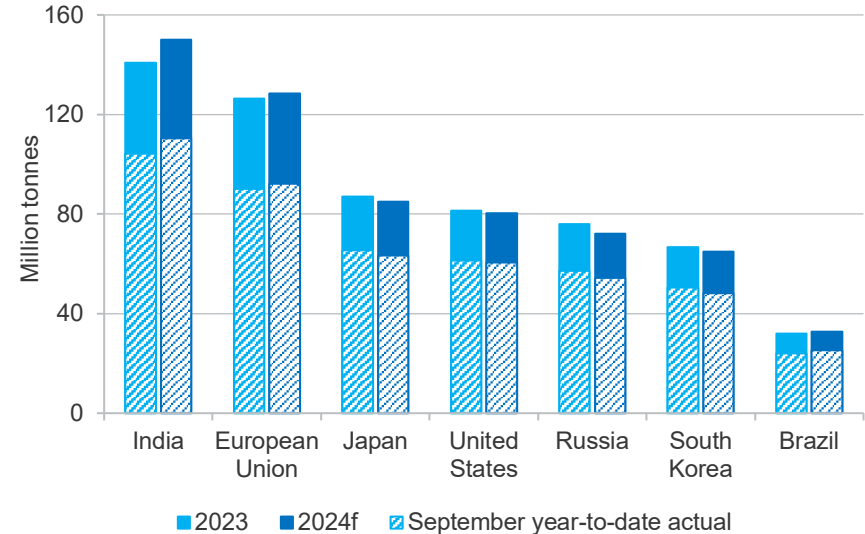
Japanese steel production fell by 5.8% year-on-year in September 2024. While auto production was down, building construction orders picked up slightly, signalling potential growth in steel demand in 2025. South Korean crude steel production was down 4.6% in the year to September, with declines in shipbuilding orders and weak construction outlook weighing on growth. Both Japanese and South Korean steel production is expected to remain relatively flat over the outlook period to end 2026 (Table 3.1).

Figure 3.4: Hot rolled coil steel prices



Source: Bloomberg (2024)

Figure 3.5: Steel production — other major producers



Sources: Department of Industry, Science and Resources (2024); World Steel Association (2024)

US steel production is expected to fall by 1.2% in 2024, with growth expected to recover to 2.0% a year over the outlook to 2026 (Table 3.1).

3.3 World iron ore trade

China's iron ore imports have remained strong despite weak steel demand

China's imports of iron ore have remained strong despite falling steel demand, rising 6.8% in the year to September 2024. China's iron ore imports from Australia increased by 3.0% year-on-year in the September quarter 2024, down from a 6.6% year-on-year rise in the June quarter. Combined shipments to China from Australia, Brazil and South Africa — representing around 80% of global seaborne supply — were estimated at around 777 Mt for the 9 months to September 2024, a rise of 2.3% from the same period in 2023.

The steady growth in China's iron ore imports, combined with falling steel production, has seen China's portside stocks remain near 5-year highs for most of 2024, at over 150 Mt in late November 2024 (Figure 3.6).

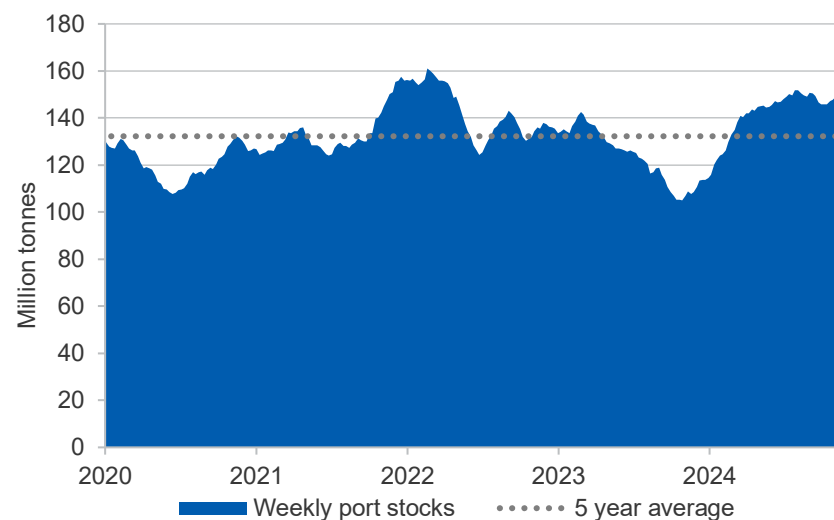
Over the outlook period to end 2026, global supply is expected to grow by 1.6% per annum, with new supply coming online in Australia, Brazil and Africa. Total iron ore shipments from Brazil increased by 5.5% year-on-year in the September quarter 2024. Vale, which accounts for over 80% of Brazil's iron ore output, recorded an increase of 5.5% in output to produce 91 Mt of ore in the September quarter 2024. Outside of Australia and Brazil, iron ore exports are projected to be bolstered by additional supply from Canada and India and new projects coming out of Africa, including the Simandou mine in Guinea which is targeting first production next year.

Brazil is expected to grow iron ore exports by around 6% annually over the outlook period. This will include Vale's S11D expansion, as well as new and expanded output by a number of other producers, such as CSN (Casa de Pedra mine) and IndoSino (high grade concentrate from Amapa).

Guinea's Simandou mine is on track for first production in 2025

Progress on Guinea's Simandou 120–160 Mt mine project continued in the December quarter 2024. Rio Tinto plans to invest US\$6.2 billion in the

Figure 3.6: China's weekly iron ore port stocks



Source: Bloomberg (2024)

mine and associated rail and port projects, in collaboration with a number of other companies. Rio Tinto's Simfer mine has a targeted capacity of 60 Mt per year. First production is expected in late 2025, ramping up over 30 months.

India's iron ore exports are declining due to strong domestic steel demand

India's iron ore exports fell sharply in the September quarter, down 32% year-on-year. This reflected local mines prioritising the domestic market over exports as local iron ore prices climbed due to strong demand from DRI, billet and integrated steel producers.

India has historically been a price-sensitive iron ore exporter, with domestic 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 grow relatively slowly over the outlook to 2026.

As India's steelmaking capacity grows — in order to meet the rising demand from manufacturing, infrastructure and residential and commercial construction — the quantity of iron ore available for export will decline.

3.4 Prices

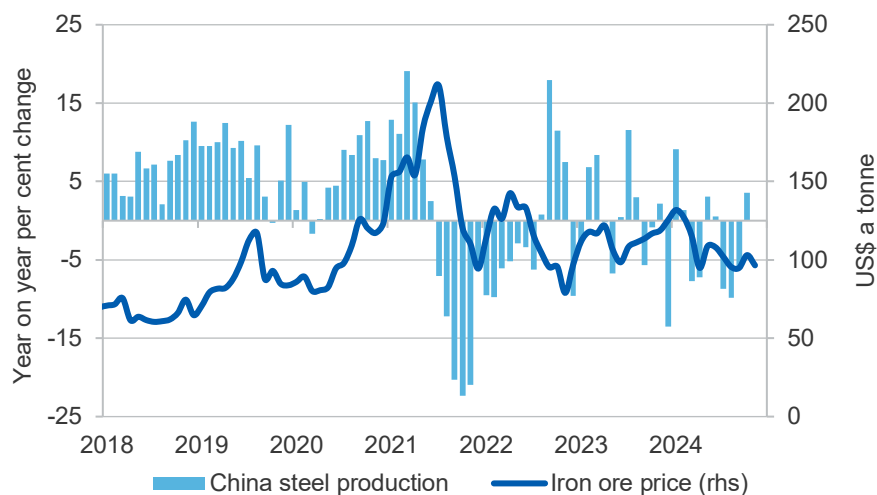
Iron ore prices stabilise due to Chinese policy announcements, but markets remain cautious

Iron ore price volatility continued in the December quarter 2024. Daily benchmark iron ore spot prices (basis 62% Fe fines CFR Qingdao) surged by around 20% to about US\$105 a tonne in October following the policy measures announced by the Chinese government (Figure 3.7). Prices subsequently moderated as markets remained cautious about the impact of the measures. Prices changed little following the additional measures announced in November. Over the past year, iron ore prices have risen and fallen in line with market speculation of further policy announcements in China, a pattern that is likely to continue at least until early 2025.

Prices to ease over the outlook due to softening demand and new supply

The outlook for iron ore prices remains soft due to the strong supply outlook and weaker steel demand. Australia and Brazil, the world's two largest producers, are expected to collectively grow export volumes by 1.9% annually over the outlook period to 2026. This follows a

Figure 3.7: Iron ore price and China steel production, monthly



Notes: China import Iron ore fines 62% Fe spot (CFR Tianjin port)
Sources: Bloomberg (2024) China import prices; World Steel Association (2024)

ramp up of greenfield projects by major Australian miners, and major expansions planned by Brazilian producers Vale and CSN. New supply from emerging producers in Africa will also contribute to global supply.

Rising steel demand and production capacity in emerging Asia and the Middle East will lift iron ore demand over the outlook period. The increase in demand includes over 100 Mt of integrated (Blast Furnace-Basic Oxygen Furnace) steelmaking capacity expected to come online in the next few years in Asia. Over the next two years, iron ore demand is expected to receive support from a modest rise in demand in Europe and North America as interest rates continue to fall.

The expected declines in iron ore prices forecast in the September 2024 REQ have been retained despite the pickup in iron ore prices in October. From an estimated average price of around US\$92 a tonne (FOB) in 2024, the benchmark iron ore price is now projected to fall to an average of US\$80 a tonne in 2025, then decline further to around US\$76 a tonne in 2026 (Figure 3.8). These price declines are not expected to result in significant changes in Australian export volumes nor exits from the market.

3.5 Australia

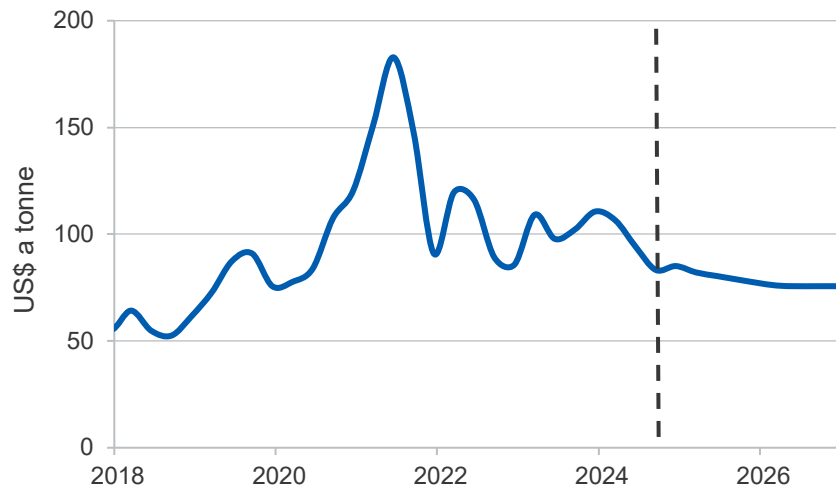
Weak prices saw iron ore export revenue fall in the September quarter

Australia's iron ore export earnings were \$28.1 billion in the September quarter 2024, a 14.5% (or \$4.8 billion) decrease year-on-year. The fall reflected a 16% decline in the average export price in the September quarter 2024 compared with the previous year. In volume terms, iron ore exports fell by 8 million tonnes in the September quarter 2024 following a strong June quarter (Figure 3.9).

As the world's largest exporter of key commodities required for steel production, Australia is well placed to benefit from the demand growth projected in global markets in 2025 and 2026. Australia's production volumes are forecast to increase by 2.6% a year over the next two years, to an estimated 1,009 Mt by 2025-26 (Table 3.1).

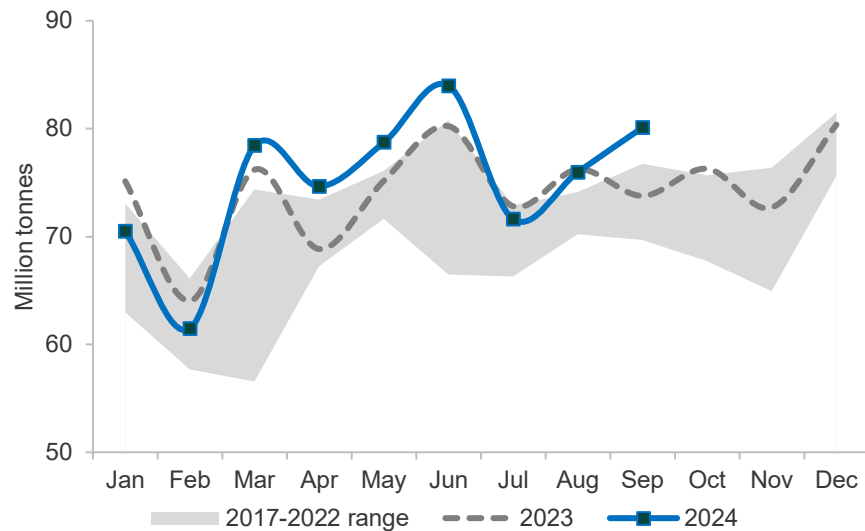
Rio Tinto produced 84 Mt of iron ore in the September quarter 2024, up 1% year-on-year. As in the June quarter 2024, productivity gains offset

Figure 3.8: Iron ore price outlook, quarterly



Notes: Iron ore fines 62% Fe spot (FOB)
Sources: Bloomberg (2024); Department of Industry, Science and Resources (2024)

Figure 3.9: Australian monthly iron ore export volumes



Source: ABS (2024); Department of Industry, Science and Resources (2024)

lower ore yields. The company announced that construction of its \$3 billion Western Range joint venture with Baowu Steel Group is now 80% complete. During the quarter, commissioning of the autonomous haul trucks was finalised, and the Paraburdoo upgrade works were completed.

BHP's Western Australian iron ore production was 63 Mt in the September quarter 2024 (72 Mt on a 100% basis), up 2.2% on the September quarter 2023. Production rose due to strong supply chain performance as result of increased capacity unlocked by the Port Debottlenecking Project. Production guidance for 2024–25 is unchanged at 282–294 Mt.

Fortescue's total iron ore shipments were 47.7 Mt in the September quarter 2024, 4% higher year-on-year. The Iron Bridge magnetite mine continued to ramp up production, with 1.6 Mt of concentrate produced in the September quarter 2024. Fortescue's production guidance for both hematite and magnetite for the 2024–25 financial year is 190–200 Mt, including 5–9 Mt of magnetite from Iron Bridge.

Mineral Resources' Onslow Iron project continues to ramp up, producing 1.9 Mt of iron ore in the September quarter 2024. The project is expected to achieve production of around 35 Mt per year when fully operational.

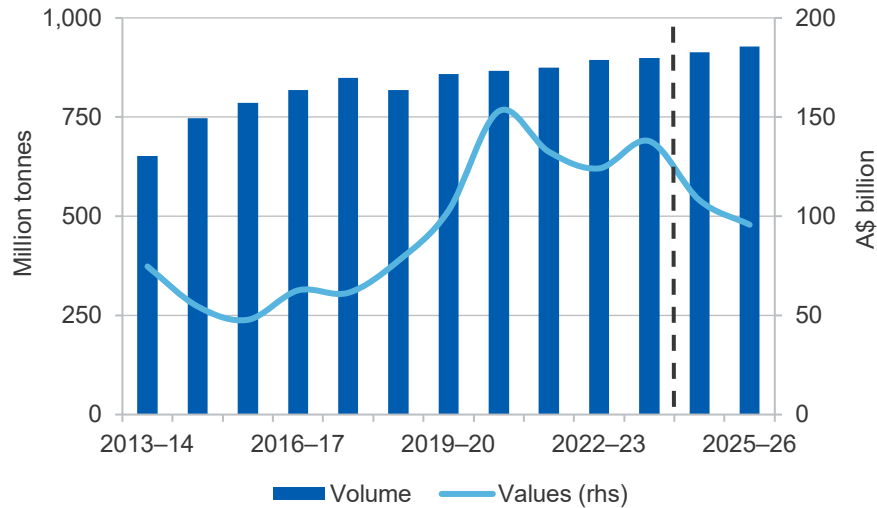
Australia's iron ore exports are projected to reach 934 Mt by 2026. The additional tonnes reflect the ramp-up of Mineral Resources' Onslow Iron and FMG's Iron Bridge project plus incremental tonnes from the replacement projects of major producers.

Weaker prices and a slightly higher AUD/USD exchange rate are forecast to lower iron ore earnings over the outlook period. Total export earnings are forecast to reach \$108 billion in 2024–25, down from \$138 billion in 2023–24 before falling to around \$96 billion in 2025–26 (Figure 3.10).

Iron ore exploration reaches decade-high in September quarter

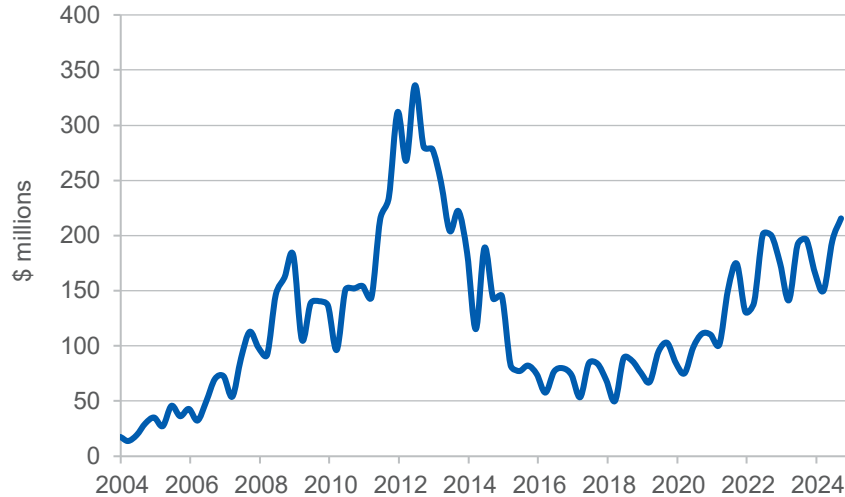
A total of \$216 million was spent on iron ore exploration in the September quarter 2024 (Figure 3.10). This was 10% higher than the September quarter 2023 and the highest level since the September quarter 2013. The latest results continue the robust levels of iron ore exploration triggered by the historical high iron ore prices (of above US\$200 a tonne) in early 2021.

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



Source: ABS (2024); Department of Industry, Science and Resources (2024)

Figure 3.11: Australian iron ore exploration expenditure



Source: ABS (2024)

Revisions to the outlook

Export earnings in 2024–25 have been revised up from the September 2024 REQ reflecting a lower forecast rise in the exchange rate and slightly higher prices in the December quarter 2024. Earnings of \$108 billion rather than \$107 billion are now forecast for 2024–25. Export earnings for 2025–26 have been revised down by \$3 billion due to a higher exchange rate and a slight reduction in forecast prices.

Table 3.1: World steel demand and production

Crude steel demand	Million tonnes				Annual percentage change		
	2023	2024 ^s	2025 ^f	2026 ^f	2024 ^s	2025 ^f	2026 ^f
China	932	903	898	893	-3.1	-0.5	-0.5
European Union	140	142	145	148	1.4	2.4	2.0
India	142	152	161	168	7.0	5.9	4.9
United States	101	100	102	105	-0.4	1.8	2.6
Other Asia ^a	110	114	118	124	3.2	3.9	4.6
Japan	59	58	59	59	-1.3	1.1	-0.1
Middle East	58	61	63	65	4.4	3.7	3.2
South Korea	57	55	56	57	-3.9	2.9	2.0
Russia	47	47	47	46	-0.8	-0.2	-0.7
World steel demand	1,880	1,866	1,890	1,914	-0.8	1.3	1.3
Crude steel production	2023	2024 ^s	2025 ^f	2026 ^f	2024 ^s	2025 ^f	2026 ^f
China	1,019	1,000	986	983	-1.8	-1.4	-0.4
European Union	126	128	130	134	1.6	1.5	2.8
India	141	150	159	168	6.6	6.2	5.7
Japan	87	85	86	86	-2.3	0.9	-0.1
United States	81	80	82	84	-1.2	1.8	2.1
Russia	76	72	71	70	-5.2	-1.9	-1.6
South Korea	67	65	66	67	-2.7	1.6	1.7
Other Asia ^a	63	73	82	86	15.9	11.8	4.9
World steel production	1,892	1,892	1,909	1,933	0.0	0.9	1.3

Notes: ^a Asia ex. China, India, Japan, South Korea and Taiwan; ^f Forecast; ^s Estimate
Sources: Department of Industry, Science and Resources (2024); World Steel Association (2024)

Table 3.2: World trade in iron ore

	Million tonnes				Annual percentage change		
	2023	2024 ^s	2025 ^f	2026 ^f	2024 ^s	2025 ^f	2026 ^f
World trade	1,621	1,647	1,674	1,701	1.6	1.7	1.6
Iron ore imports							
China	1,180	1,168	1,154	1,136	-1.0	-1.2	-1.6
Japan	102	101	102	102	-1.1	0.9	-0.1
European Union	108	109	112	114	1.2	2.1	2.2
South Korea	68	70	71	72	2.6	1.6	1.6
India	5	35	50	66	607.2	41.8	31.1
Iron ore exports							
Australia	892	908	921	934	1.8	1.4	1.5
Brazil	382	389	399	413	1.8	2.6	3.5
South Africa	59	60	61	62	1.7	1.7	1.6
Canada	56	58	60	62	3.6	3.5	3.3
India	44	45	46	47	2.3	2.2	2.2

Notes: **f** Forecast; **s** Estimate

Sources: Department of Industry, Science and Resources (2024); International Trade Centre (2024); World Steel Association (2024)

Table 3.3: Iron ore outlook

World	Unit	Million tonnes				Annual percentage change		
		2023	2024 ^s	2025 ^f	2026 ^f	2024 ^s	2025 ^f	2026 ^f
Prices ^a								
– nominal	US\$/t	105	92	80	76	-12.1	-13.6	-4.9
– real ^b	US\$/t	108	92	78	73	-14.6	-15.3	-6.8
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production								
– Steel ^c	Mt	5.6	5.0	5.3	5.5	-10.3	5.5	2.5
– Iron ore ^g	Mt	957	958	982	1,009	0.2	2.5	2.8
Exports								
Steel ^c	Mt	1.21	1.08	1.02	1.11	-10.9	-5.7	8.4
– nominal value	A\$m	1,356	1,373	1,210	1,262	1.2	-11.9	4.3
– real value ⁱ	A\$m	1,450	1,409	1,210	1,221	-2.8	-14.2	1.0
Iron ore ^h	Mt	895	898	914	928	0.4	1.7	1.6
– nominal value	A\$m	124,131	137,854	108,064	95,724	11.1	-21.6	-11.4
– real value ⁱ	A\$m	132,744	141,470	108,064	92,625	6.6	-23.6	-14.3

Notes: **a** Spot price, 62% iron content, fob Australia basis; **b** In 2024 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; **s** Estimate; **g** In wet metric tonnes; **h** In dry metric tonnes; **i** In 2024–25 Australian dollars

Sources: ABS (2024); Bloomberg (2024); Company reports; Department of Industry, Science and Resources (2024); World Steel Association (2024)

Metallurgical Coal



Australia's metallurgical coal sector



160Mt

exported annually, making Australia the world's largest exporter



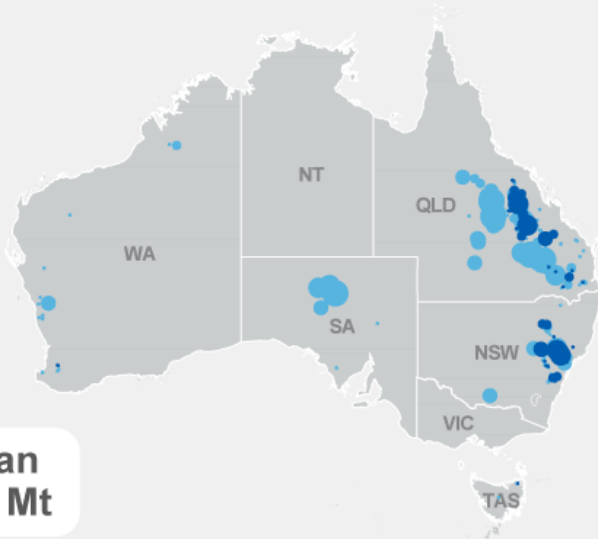
Growth

over time in exports to India



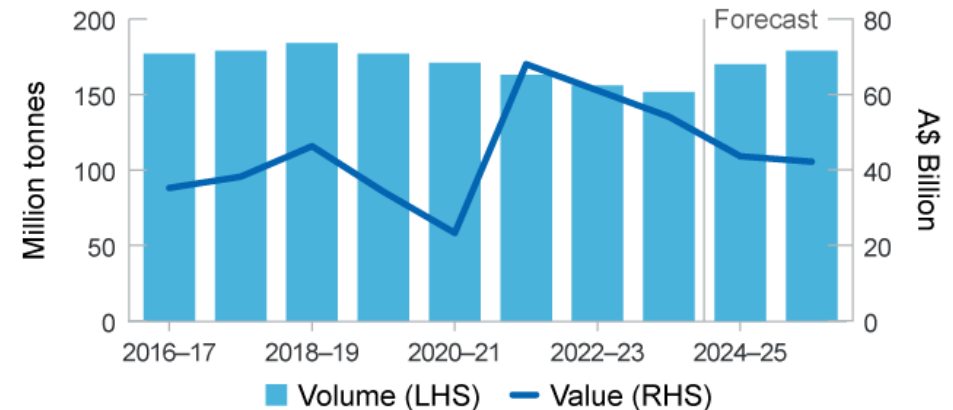
Almost all of Australia's production is exported

- Deposit
- Operating mine
 - <500
 - 500–1,000
 - 1,001–2,000
 - 2,001–4,000
 - >4,000



Major Australian coal deposits, Mt

Australian metallurgical coal exports



Outlook



Metallurgical coal prices stabilise after falling for most of 2024



Earnings are **expected to decline** over time as prices ease



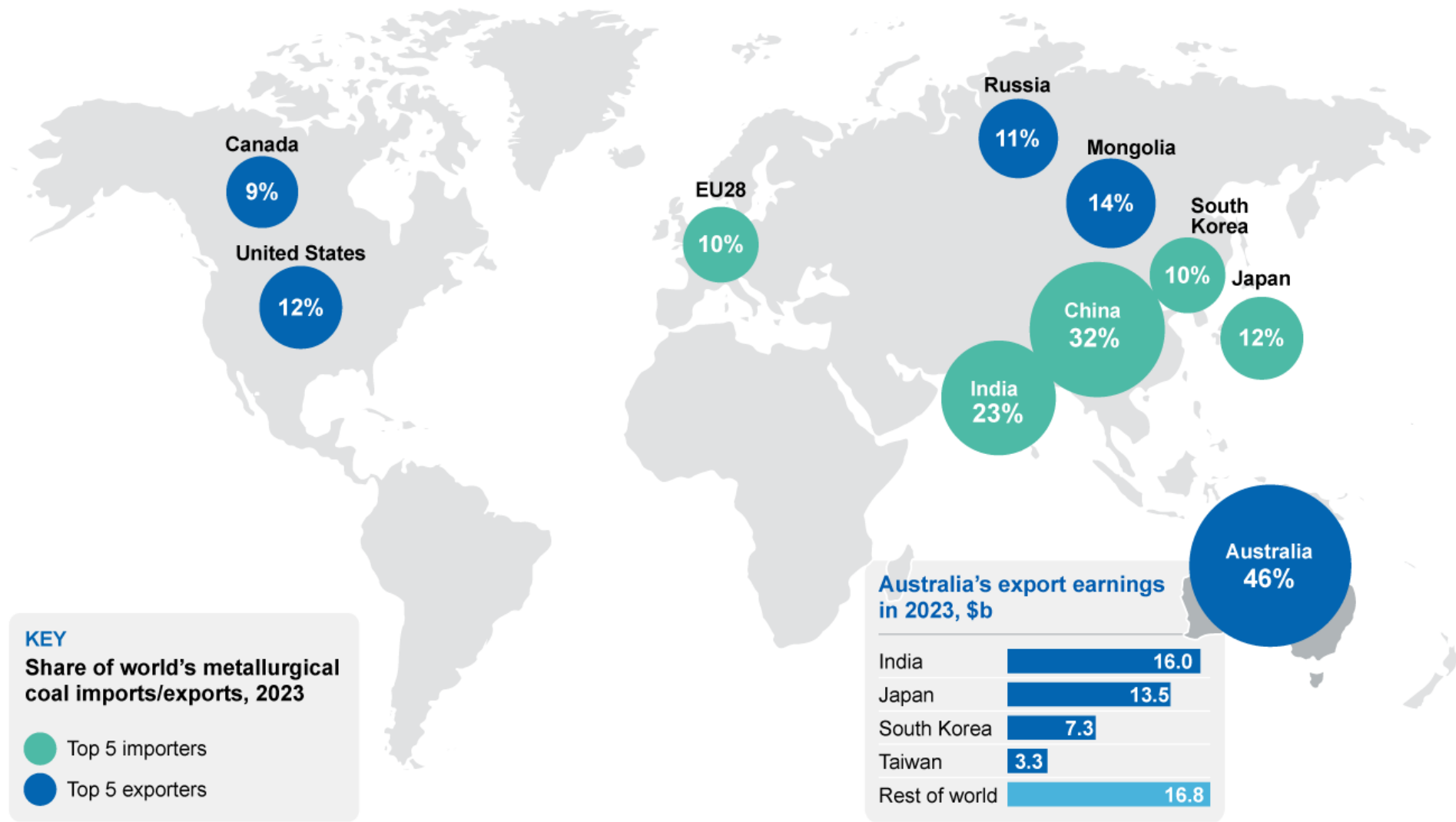
Volumes are expected to grow over the next five years as **new mines** ramp up



Exploration spending declined but remains high compared to historical averages

SOURCE: IEA; ABS; McCloskey

Metallurgical Coal TRADE MAP



SOURCE: WSA; ABS

4.1 Summary

- Metallurgical coal prices recovered from September lows to average just above US\$200 a tonne over October and November. Prices are expected to remain at a similar level throughout the forecast period.
- Relatively low prices compared with 2023–24 are forecast to reduce export earnings from \$54 billion in 2023–24 to \$41 billion in 2025–26.
- Export volumes are expected to rise from 151 Mt in 2023–24 to 174 Mt by 2025–26.

4.2 World trade

Global metallurgical coal trade volumes were steady through July and August, with growth of 9% in the first 8 months of 2024 over the corresponding 2023 period. In July and August, China maintained its status as the largest importer of metallurgical coal throughout despite falling profit margins in its steel manufacturing sector. Imports from the US and Australia had the largest month-on-month growth, taking market share from Mongolia in the Chinese market. Indian import growth tapered off in recent months, but long-term demand growth is expected to outweigh domestic supply growth, underpinned by planned blast furnace capacity expansion.

Prices recovered from September lows to remain at just above US\$200, as Chinese government policy announcements stabilised market sentiment. Prices are expected to remain at similar levels throughout the forecast period, although some key risks remain which may induce volatility.

Weather-related supply side risks have moderated since the September *Resources and Energy Quarterly*. Meteorological agencies are reporting that the La Niña weather pattern is likely to be relatively weak and short-lived, reducing the risk of supply disruptions on Australia's east coast. Ongoing supply from Russia (11% of global supply) remains a key uncertainty.

The demand outlook remains uncertain, as global import volumes have remained robust despite deteriorating steel market conditions. Increasingly

protectionist global trade policy presents a risk to Chinese steel exports. China consumes approximately half the world's metallurgical coal so this presents as a key risk to demand. The potential for negative profits at high-cost mines are expected to limit the risk of muted demand flowing through to prices below US\$200 a tonne. High-cost US producers are most at-risk due to higher freight costs to Asia.

World steel production growth has been revised down to 0.9% for 2025 and 1.3% for 2026, see *Iron ore* chapter. Despite a contraction in Chinese steel production in 2024 and expected declines in 2025 and 2026, the addition of new steelmaking capacity in India and other major regions outside of China results in net growth in global steel production.

4.3 World imports

China is still the largest global importer despite falling steel profitability

China maintained its status as the world's largest importer of coal in the January to August 2024 period, with import volumes increasing 28%. Import volumes were maintained in the September quarter, with lower Russian and Mongolian volumes offset by a more than doubling of imports from Australia and the US compared to the June quarter. Mongolia and Russia were still the dominant import partners for China, with 50% and 26% market shares respectively over the January to August 2024 period.

Chinese buyers are price sensitive and will purchase coal on international spot markets to stockpile when conditions are favourable. Metallurgical coal prices fell rapidly through the September quarter, and it is likely traders and Chinese end users took the opportunity to buy US and Australian cargoes when a discount to local prices emerged on a cost-and-freight (CFR) basis.

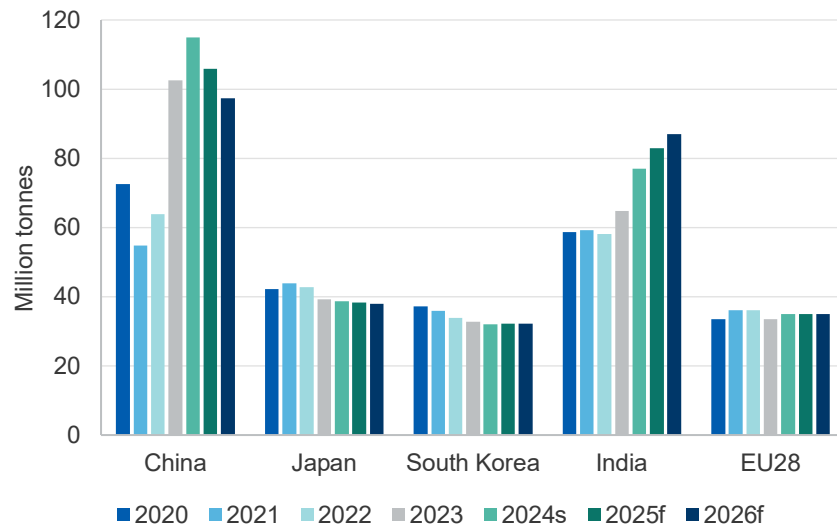
Recent Chinese government policy announcements (See *Iron ore* Chapter) has helped stabilise Chinese steel prices and assuage concerns around negative profit margins at steel mills, as capacity utilisation rates increased in October. However, the outlook for China's metallurgical coal demand is uncertain given the decline in domestic steel consumption and recent anti-dumping investigations against Chinese steel exports.

Indian imports slowed but will underpin long term demand growth

Indian import volumes eased in July and August, but a strong H1 2024 elicited growth of 6% in the first 8 months of 2024 compared to the same period in 2023. The recent slowing in import growth is attributed to the monsoon season, global oversupply in steel markets and delays to expected Indian government infrastructure spending. These factors led to a 1% quarter-on-quarter contraction in Indian steel production during the September quarter, although year to September 2024 growth was still positive. This slowdown in growth is expected to be transient and does not change the long-term demand outlook for India, underpinned by significant blast furnace expansion.

As a growing steel producer, India continues to diversify its metallurgical coal supply base. Australia's market share fell from 49% in 2023 to 44% of imports in the first 8 months of 2024, while Russia (20% market share), the US (12%) and Mozambique (4%) gained market share by 1-2% over the

Figure 4.1: Metallurgical coal imports



Notes: s Estimated f Forecast

Sources: McCloskey (2024); Department of Industry, Science and Resources (2024)

same period. Russian Pulverised Coal Injection (PCI) coal volumes increased 22% during the same period and represented 51% of Indian PCI imports. Australian PCI exports to India fell 2% over the same period, with Indian importers preferring cheaper Russian PCI at a CFR basis.

4.4 World exports

Australian volumes are likely to continue to lift global supply in 2025 and 2026. Additional Australian supply is not expected to replace exports from other regions as growing Indian and southeast Asian demand is expected to absorb additional supply volumes.

Mongolian exports moderate but are still at high levels historically

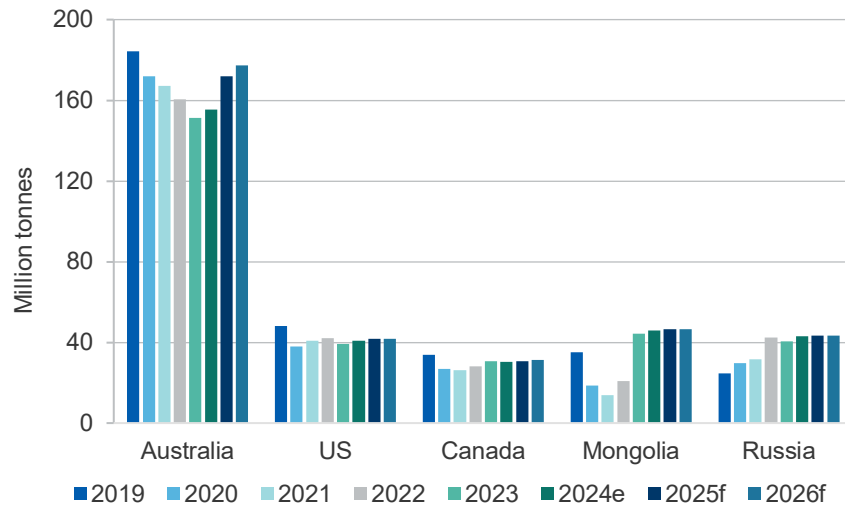
Mongolian exports fell 13% in the September quarter from the June quarter, as its sole export destination (China) increased import volumes from the US and Australia. Compared to historical levels however, the first 8 months of 2024 were 15% higher than the corresponding period in 2023 and three times higher than in 2022, highlighting the scale of recent capacity expansion in Mongolia. While Mongolia has lower freight costs than other countries, the shift in recent months of Chinese imports to Australia and the US (during a period of price turbulence) displays the cost competitiveness of other regions despite geographic distance. Mongolia does not have the infrastructure to divert production volumes from China.

Russia maintains export volumes as trade measures have limited effect

Russia maintained export volumes in July and August, with China and India continuing to absorb the vast majority. Russian coal continues to trade at a discount due to trade partner limitations. Russian export volumes in the first 8 months of 2024 were 15% higher than in 2023.

Russia has been facing logistical constraints exporting via rail. An additional Pacific railway is nearing completion (slated for 2025) to connect the Elga Port coal terminal. This should relieve pressure on existing freight infrastructure. The potential for rising rail container tariffs may further affect Russian margins and, in turn, export viability. Offsetting increasing freight

Figure 4.2: Metallurgical coal exports



Notes: e Expected; f Forecast

Sources: McCloskey (2024); Department of Industry, Science and Resources (2024)

Figure 4.3: Metallurgical coal price fluctuations, 2023 to 2024



Source: McCloskey (2024)

tariffs is the Russian Government’s recent decision to cancel export duties on coking coal from 1 December 2024, aimed at supporting coal enterprises. Russian exports will continue to be subject to the effects of the Russia-Ukraine conflict and resulting sanctions.

4.5 Prices

Metallurgical coal prices have stabilised after weakness in September

After falling 44% from 2022 highs at the start of the September quarter, the price of Australian prime hard coking coal stabilised at around US\$200 a tonne in October and November. The announcement of Chinese policy measures led to a short-term rally from US\$180 to US\$205 a tonne in late September. This coincided with some high-cost US mines lowering output. As can be seen in Figure 4.3, US Low Volatile Coking coal generally trades at a discount to Australian prime hard, and as such high-cost US mines have been the first to implement production cuts as prices fall.

The supply of benchmark prime hard coking coal remains constrained. Production disruptions at Anglo American’s Grosvenor mine in Queensland and Allegheny Metallurgical’s Longview mine in West Virginia reduced global volumes in July, but sluggish demand has meant these supply shocks have not influenced prices over a sustained period. The receding likelihood of a La Niña weather episode is reducing the risks to Australian metallurgical coal supply. As a consequence, price forecasts for 2025 have been revised down since the September 2024 REQ.

Metallurgical coal trade is mostly conducted through term contracts with fixed volumes, with spot transactions occurring infrequently. Spot trading is often undertaken by intermediaries looking to arbitrage for physical delivery on the Dalian Commodity Exchange. End users, such as steel mills, generally purchase spot cargoes when they require additional uncontracted coal to meet steel production demand. As such, recent price action has likely been driven by sentiment as opposed to demand from end consumers as Chinese steel production has slowed. Increased Indian activity on the spot market presents an upside risk for prices.

Prices are expected to average around US\$205 a tonne during the outlook period, but will be subject to high volatility given market illiquidity and the potential for steel trade flows to vary with geopolitical and trade policy changes.

4.6 Australia

Australian supply set to increase as production at new mines ramps up

Australian exports were steady in the September quarter and were 6% higher year-on-year than in the same period in 2023. Export volumes for the first 8 months of 2024 were broadly flat when compared to the same period in 2023, growing 0.5%.

Australian exports to India contracted 19% year-on-year in the September quarter as economic activity slowed. This was offset by higher export volumes to China and Europe, growing 76% and 19% year-on-year in the September quarter respectively.

Quarterly exports to Japan and Korea were flat year-on-year, with Japan having the largest share of Australian exports (24%) given India's quarterly contraction. The shift in export partners by region whilst maintaining total export volumes highlights the global demand for high quality Australian metallurgical coal.

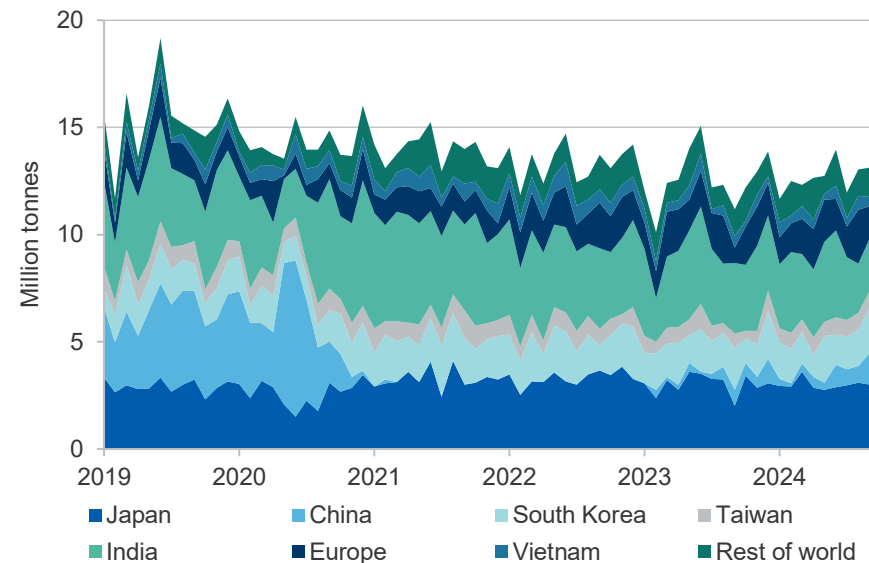
Australian aggregate production is forecast to increase over the outlook period, with a few minor additions to forecast production volumes. Australian Pacific Coal commenced production at Dartbrook Underground in September, targeting 2 Mtpa production in 2026. Futura Resources expects first coal at its Fairhill site in the December 2024 quarter after the Wilton pit commenced full operation earlier this year. Production guidance for FY25 for major producers BHP, Whitehaven Coal and Anglo American was unchanged this quarter, after an 11% increase in quarter-on-quarter raw material production at Whitehaven's recently acquired Daunia and Blackwater mines. On 25 November 2024, US miner Peabody Energy announced it will be acquiring, subject to approvals and pre-emption rights, the five Queensland coal mines of Anglo American: Grosvenor,

Moranbah North, Aquila and Capcoal, with Indonesia's BUMA acquiring the Dawson mine in a back-to-back transaction.

With the likelihood of weather-related disruptions receding and new supply coming online, exports are expected to rise from 153 Mt in 2024 to 177 Mt in 2026 (Figure 4.4).

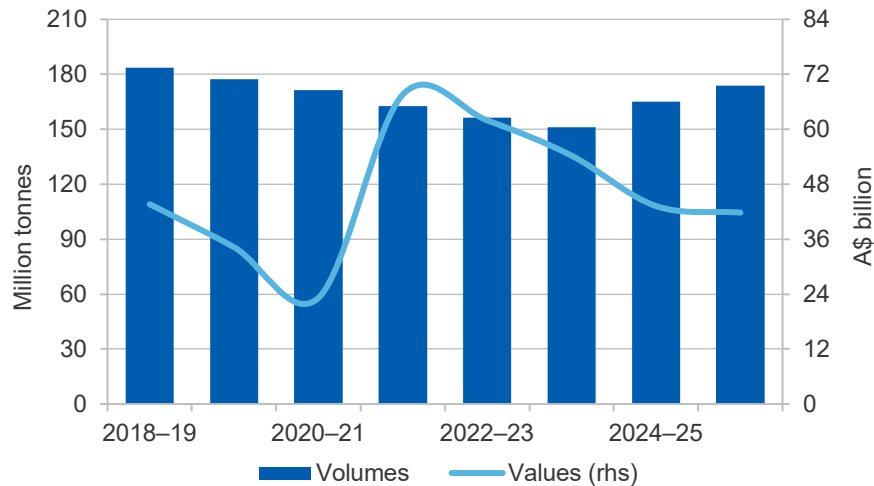
Australia's metallurgical coal export earnings are expected to fall from \$54 billion in 2023–24 to \$41 billion by 2025–26, as lower prices offset higher export volumes. As the supplier of approximately half of world trade in metallurgical coal exports, supply from Australia is expected to continue to influence global metallurgical coal prices. Australian exporters are expected to maintain market share as they are highly competitive and have a favourable proximity to key markets.

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



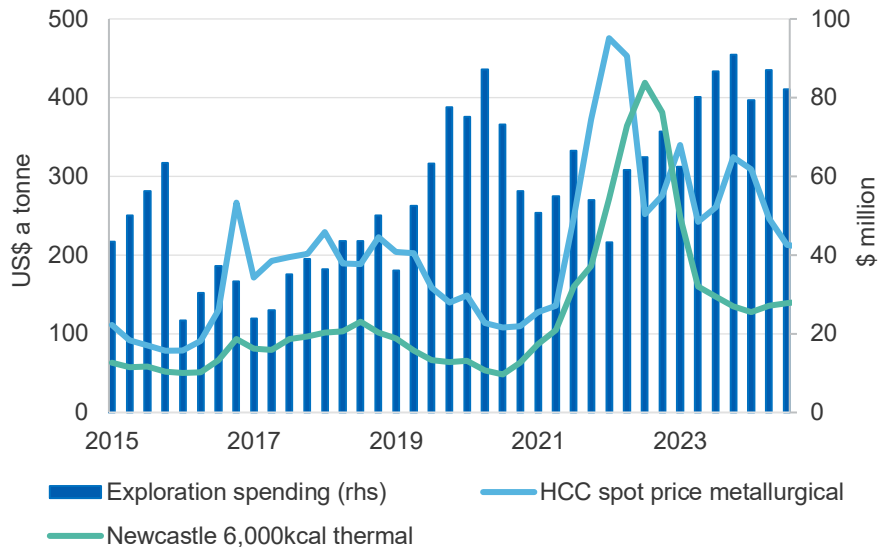
Source: ABS (2024)

Figure 4.5: Australia's metallurgical coal exports



Sources: ABS (2024); Department of Industry, Science and Resources (2024)

Figure 4.6: Australian coal exploration expenditure and prices



Notes: Exploration for all coal types
Sources: ABS (2024); McCloskey (2024)

Coal exploration expenditure increased in the September quarter

Australian exploration expenditure for thermal and metallurgical coal (Figure 4.6) decreased 6% in the September 2024 quarter. Declines in dollar value were similar in NSW and Queensland, with the latter still accounting for the bulk of expenditure. While exploration expenditure has fallen compared to the September 2023 quarter, it remains much higher than the historical average. Metallurgical coal likely accounts for the majority of this spend.

Revisions to the outlook for Australian metallurgical coal exports

Forecast export earnings are broadly the same as in the September 2024 Resources and Energy Quarterly. A reduced likelihood of La Niña weather disruptions results in an upward revision to export volumes, offset by a downward revision in export prices in 2024-25. The 2025-26 forecast is little changed.

Table 4.1: World trade in metallurgical coal

	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
World trade	Mt	326	334	354	361	2.3	6.2	1.9
Metallurgical coal imports								
China	Mt	103	115	106	97	12.2	-8.0	-8.0
India	Mt	65	77	83	87	18.7	7.8	4.8
Japan	Mt	39	39	38	38	-1.1	-1.2	-1.1
European Union 28	Mt	33	35	35	35	4.6	0.0	0.0
South Korea	Mt	33	32	32	32	-2.3	0.9	-0.4
Metallurgical coal exports								
Australia	Mt	151	153	171	177	1.5	11.7	3.5
United States	Mt	39	41	42	42	4.0	2.1	0.4
Canada	Mt	31	30	31	31	-1.0	1.6	1.7
Russia	Mt	40	43	43	43	6.2	0.5	0.0
Mongolia	Mt	44	46	46	46	4.2	1.0	0.0
Mozambique	Mt	5	4	4	4	-16.7	0.0	0.0

Notes: **f** Forecast; **s** Estimate.

Sources: IEA (2024) Coal Information; IHS (2024); Department of Industry, Science and Resources (2024)

Table 4.2: Metallurgical coal outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Contract prices ^e								
– nominal	US\$/t	289	254	208	205	-12.1	-18.0	-1.6
– real ^d	US\$/t	295	254	204	197	-13.7	-19.7	-3.5
Spot prices ^g								
– nominal	US\$/t	292	244	208	205	-16.3	-15.0	-1.4
– real ^d	US\$/t	298	245	204	197	-17.8	-16.7	-3.4
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production	Mt	162	160	169	178	-1.1	5.5	5.3
Export volume	Mt	156	151	163	174	-3.6	8.3	6.3
– nominal value	A\$m	61,922	54,181	43,443	41,147	-12.5	-19.8	-5.3
– real value ⁱ	A\$m	66,430	55,779	43,443	39,815	-16.0	-22.1	-8.4

Notes: **d** In 2024 US dollars; **e** Contract price assessment for high-quality hard coking coal; **i** In 2024–25 Australian dollars; **f** Forecast; **g** Hard coking coal fob Australia East Coast ports; **s** Estimate. Sources: ABS (2024); Department of Industry, Science and Resources (2024).

Thermal Coal



Australia's thermal coal sector



World's 2nd largest thermal coal exporter & 3rd largest black coal resource

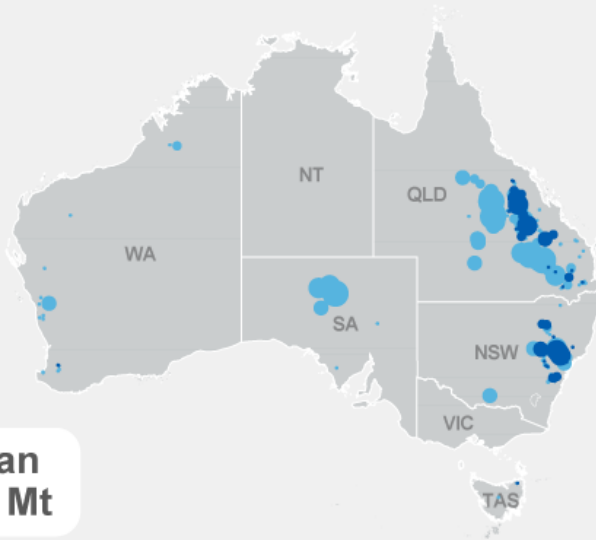


Strong growth in exports to **Vietnam** in recent years



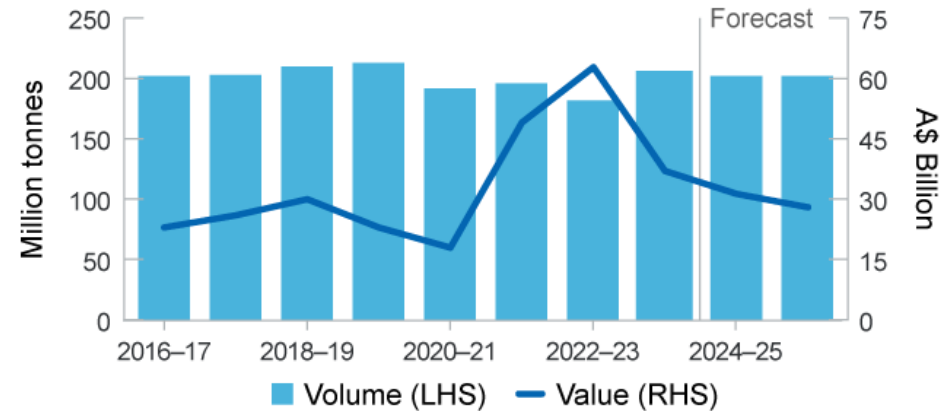
75-85% of Australia's thermal coal is exported

- Deposit
- Operating mine
 - <500
 - 500–1,000
 - 1,001–2,000
 - 2,001–4,000
 - >4,000



Major Australian coal deposits, Mt

Australian thermal coal exports



Outlook



Prices well below 2022 peaks as supply conditions improve



Earnings remain on a downward trajectory, as prices continue to ease



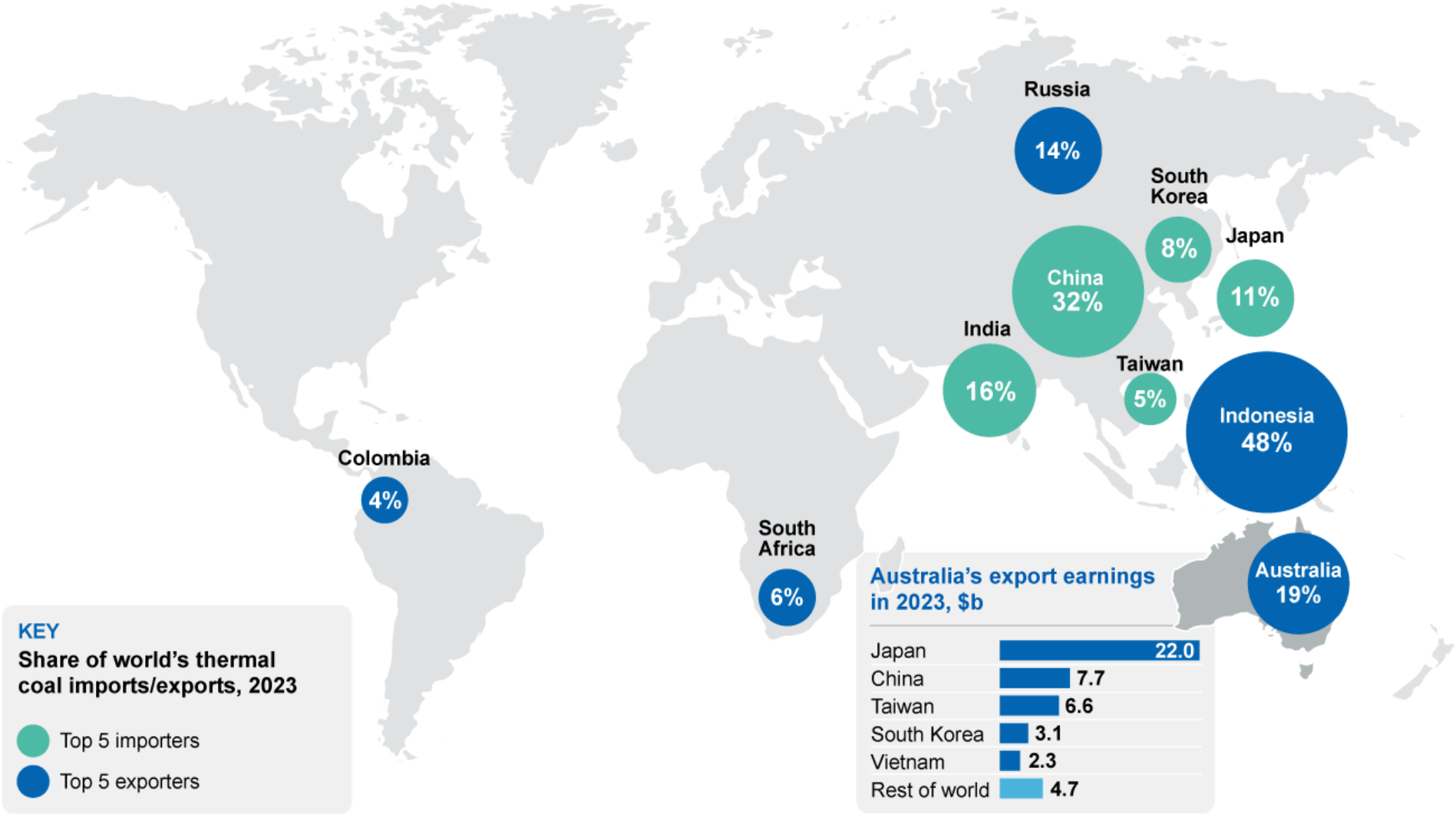
Volumes remain vulnerable to wet weather and disruptions



The global energy transition is expected to reduce demand

SOURCE: IEA; ABS; McCloskey

Thermal Coal TRADE MAP



SOURCE: IEA; ABS

5.1 Summary

- As global import demand falls and supply remains stable, thermal coal prices are forecast to decline from around US\$136 a tonne to about US\$114 a tonne by 2026.
- Australia's thermal coal export earnings are expected to ease from \$37 billion in 2023–24 to \$29 billion by 2025–26, as prices decline.
- Australian export volumes are expected to be stable at around 205 Mt per year over the outlook period.

5.2 World outlook

Sustained hot weather has placed pressure on thermal coal markets

Seaborne thermal coal markets have remained relatively tight in 2024, with supply affected by weather disruptions. Asian economies experienced sustained record-breaking hot weather, in the lead up, during, and following summer. Varying amounts of rainfall also contributed to market volatility, with sporadic performance of hydroelectric output through the year.

Market pressures are expected to ease over the outlook based on economic fundamentals. Governments globally continue to progress towards decarbonisation goals and set new targets. China achieved its 2030 clean energy target 6 years early, consistently breaking records in the roll out of wind and solar capacity. The continued pace and scale of the rollout of renewables and resulting reduction in thermal coal demand is expected to place downward pressure on prices over the coming years.

However, the outlook carries many uncertainties. Despite record breaking renewables rollouts and increased use of nuclear and gas, unexpected spikes in demand and weather-related shocks to supply have become an ongoing feature of thermal coal markets. These shocks have sustained demand in 2024, and this pattern could continue. New demand from data centres and the accelerating use of artificial intelligence could double global demand for electricity towards 2026 (compared to 2022) according to the IEA. These uncertainties present upside risks to the forecasts.

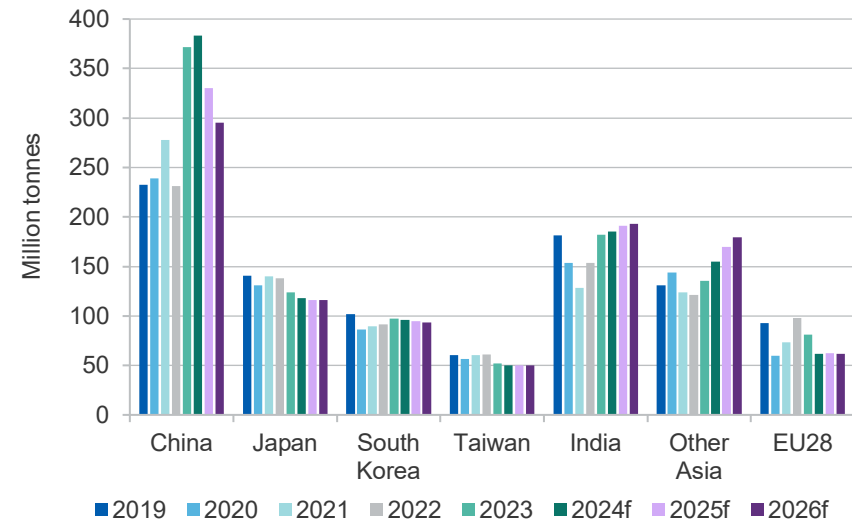
5.3 World imports

Lagging hydroelectric output in China supports coal imports

China's seaborne imports of thermal coal defied expectations in the first 8 months of the year, rising by 8% year-on-year. Previous RECs predicted that China's imports had peaked in 2023 at the very high level of 372 Mt – a 61% gain on 2022 (Figure 5.1). China had low hydroelectric output in 2023, and forecasts were for a rebound in hydroelectric output and a record-breaking lift in renewable capacity to cut 2024 thermal coal usage.

But a few factors have boosted China's imports this year, and seaborne imports in 2024 are expected to exceed 2023. While hydroelectric output improved in April and May (as heavy rains filled dams), it dropped sharply in September. Prolonged heatwaves also caused power demand to surge, rising by 7.9% year-on-year in the January to September 2024 period. China's domestic coal production fell during the first 5 months of the year as tighter safety protocols were implemented. China's imports are

Figure 5.1: Thermal coal imports



Note: f Forecast.

Sources: Department of Industry, Science and Resources (2024); McCloskey (2024).

expected to moderate as 2024 ends, with higher winter demand partially met from high stock levels and improved mining output (Figure 5.2).

Cooler weather and increased hydroelectric output lower India's imports

Indian thermal coal demand remained strong over the first 8 months of the year, increasing by 11% year-on-year, however, imports have trended down in recent months (Figure 5.3). The extreme heat wave experienced in the lead up and through summer was broken when monsoon rains cooled temperatures and increased hydroelectric output. Imports are expected to pick up at the end of the year as restocking for winter demand begins.

India's imports are expected to increase over the outlook period. Like China, India produces most of its coal demand domestically (87% in 2024). However, with rapid urbanisation and the shift to electrification, demand on the power grid is expected to outpace growth in domestic production. India remains one of the few large markets expected to see growth in coal consumption and imports over the next decade.

Sustained hot weather and issues with social licence drive demand in South Korea, Japan, and Taiwan

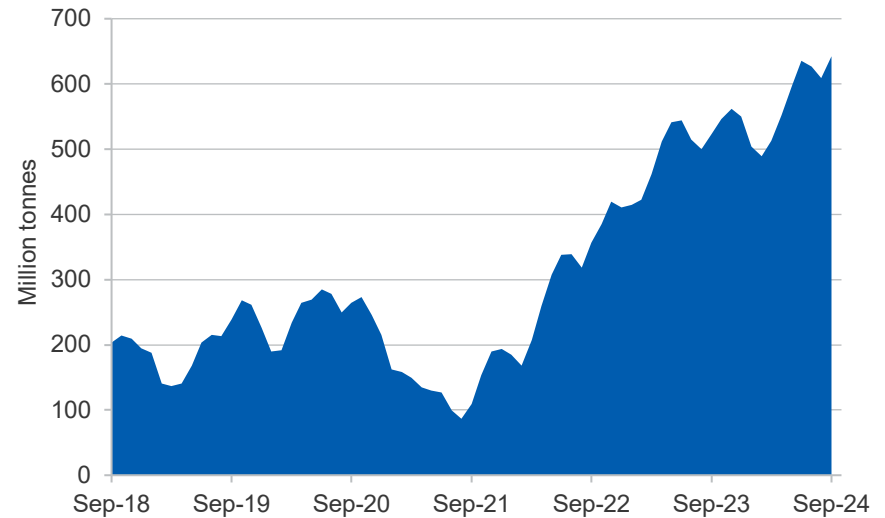
Imports to Japan, South Korea, and Taiwan fell in the first half of the year, but experienced a recovery in the September quarter due to sustained hot weather following the end of summer. Over the outlook period, these three economies are expected to experience a minor decline in imports. Japan and South Korea are both expanding nuclear capacity, although there are lingering community concerns around increased use of nuclear power in Japan following the 2011 Fukushima nuclear accident. These economies also continue to increase the share of power generated from renewables in line with decarbonisation commitments.

5.4 World exports

Russian exports to China down as US expands trade measures

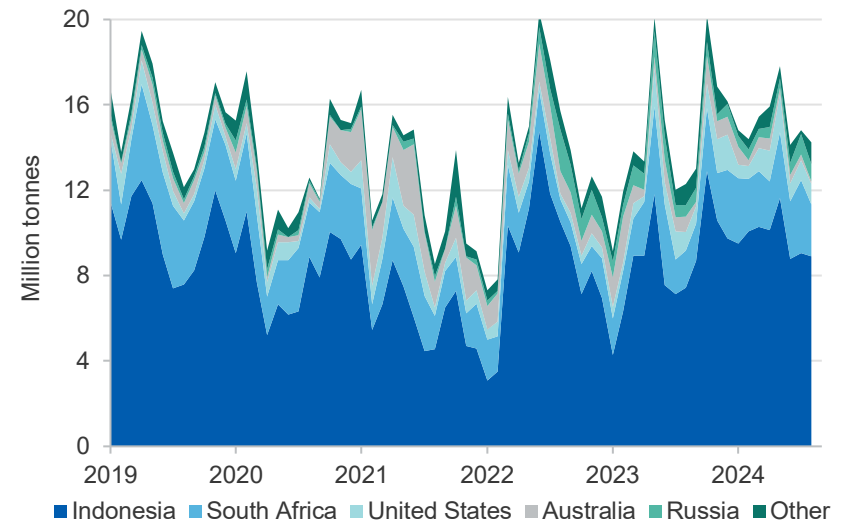
Russian exports have experienced a 20% decline in the first 8 months of 2024 year-on-year. Russian exports have faced several challenges,

Figure 5.2: China Coal Inventory (thermal and metallurgical)



Source: Bloomberg (2024)

Figure 5.3: India's thermal coal imports, monthly



Source: McCloskey (2024)

including expanding sanctions and reduced access to rail capacity. This same decline has not translated in the metallurgical coal market as the higher value metallurgical coal is prioritised during rail shortages. China's thermal coal imports rose by 8% in the first 8 months of 2024, but imports from Russia fell 20% as expanded sanctions took effect.

Russian production also declined, with the largest coal producing region, Kuzbass reducing output by 11% as a result of sanctions, limited rail availability, and increasing costs. Costs are expected to increase further in 2025, as Russian Railways announced plans to increase rail tariffs by 13% in 2025.

Indonesian exports steady despite lower prices and logistical issues

Indonesian exports recorded 5% growth over the first 8 months of 2024, with most of the increase being exported to India. Indonesian mines have benefited from dryer conditions, with production in the September quarter reaching 220 million tonnes – the highest September quarter on record.

Despite growth in production, Indonesian exports are expected to trend downwards over the outlook period as domestic consumption increases. Indonesia's plans to reach energy self-sufficiency, in conjunction with plans to expand its energy intensive metals processing industries, will likely divert more thermal coal production to the domestic market.

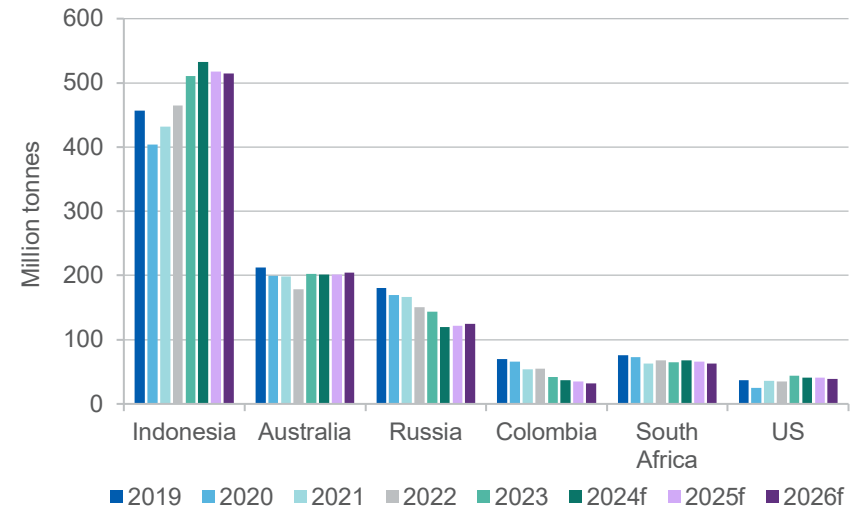
5.5 Prices

Chinese demand and high gas prices support Newcastle 6,000 kcal

Prices remained relatively stable over 2024 as markets continued to normalise. Russia's invasion of Ukraine in 2022 saw the Newcastle 6,000 kcal price reach US\$441 a tonne before markets readjusted. In the September quarter 2024, the Newcastle 6,000 kcal price averaged US\$140 a tonne and then traded in the US\$140-150 a tonne range in October and November. Increased power demand (due to hot weather), restocking in anticipation of a cold winter, reduced supply from Russia, and higher gas prices, have all contributed to higher prices.

Prices are expected to remain elevated and volatile as 2024 turns, with

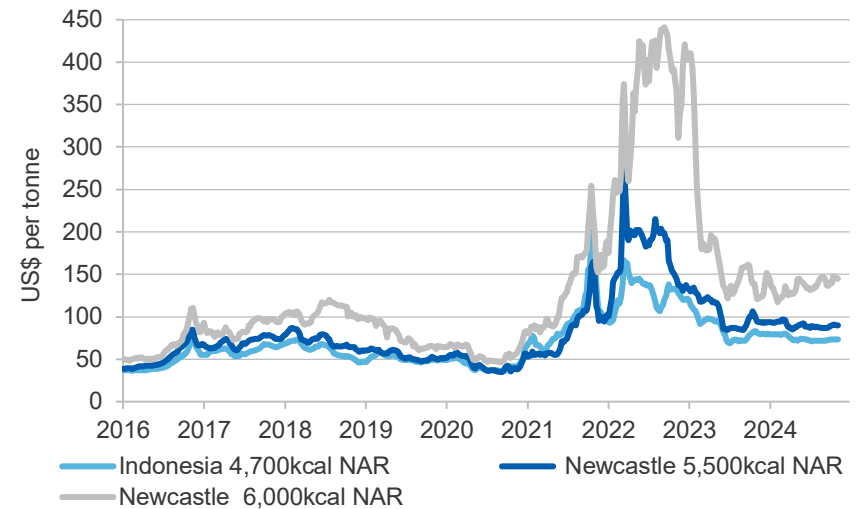
Figure 5.4: Thermal coal exports



Notes: f Forecast.

Sources: Department of Industry, Science and Resources (2024); McCloskey (2024).

Figure 5.5: Thermal coal prices — Australian vs Indonesian



Notes: NAR = Net as received. Kcal = Kilocalories per kilogram

Source: McCloskey (2024).

receding chances of a La Niña weather episode occurring. The Australian Bureau of Meteorology has indicated that any La Niña is likely to be relatively weak and short-lived. However, even with a short recurrence, La Niña tends to bring colder weather to the Northern Hemisphere during winter, and increased rainfall to the Southern Hemisphere over summer – thereby potentially increasing demand from large import markets such as China and India and reducing supply from Australia and Indonesia.

Over the outlook period, prices are expected to trend down as the market steadily becomes less tight. A large scale rollout of renewables in China and the increased deployment of nuclear power in Japan and South Korea are expected to reduce demand. From around \$136 a tonne at the end of 2024, the price is forecast to ease to around US\$114 a tonne by 2026.

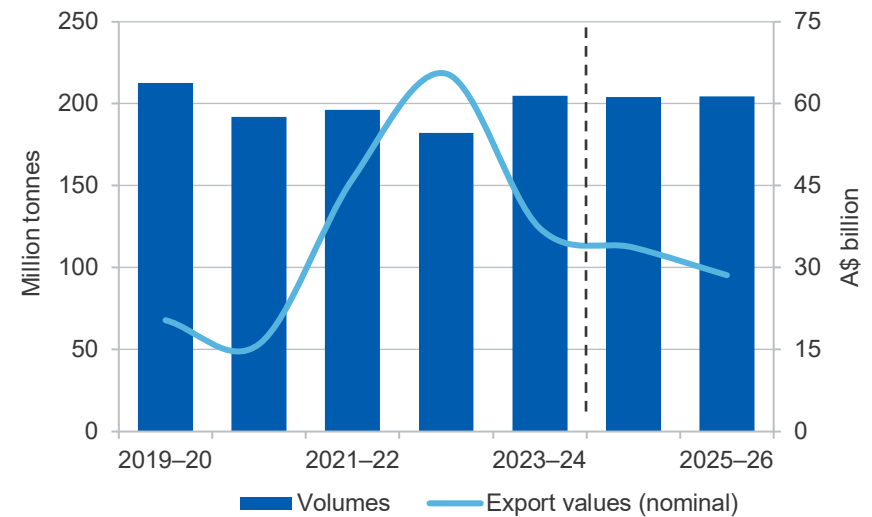
5.6 Australia

Australian exports remain vulnerable to weather disruptions

Australian exports rose by 4% year-on-year in the first 9 months of 2024. Exports to almost all major trading partners fell, but exports to China rose by 52% year-on-year following the end of China’s informal import restrictions in early 2023. Protest activity at the Newcastle coal port in late June/early July 2024 caused extended vessel queues, with delays lingering in August. Another protest occurred at the Newcastle coal port the end of November 2024 with port authorities temporarily pausing shipping movements for several hours.

Most producers who publicly report quarterly performance experienced an increase in production in the September quarter compared with June quarter, with instances of reduced production being in line with plans. New Wilkie Energy went into administration in December 2023. A deed of company arrangement (DOCA) was accepted by the creditors on 13 September 2024. Following the completion of the DOCA, the proponents intend to restart operations. Repair to the wash plant is the initial priority before commencing mining operations.

Figure 5.6: Australia’s thermal coal exports



Sources: ABS (2024); Department of Industry, Science and Resources (2024).

Looking forward, demand from Asian export markets is expected to remain strong as 2024 ends, with an expected cold winter supporting demand. Export volumes from Australia have been slightly upgraded since the last REQ due to revised expectations of a short lived La Niña weather episode.

Revisions to the outlook

The forecast for thermal coal export earnings are similar to the September 2024 REQ. Upward revisions to volumes and prices has seen 2024–25 exports lifted by \$1.5 billion while the forecast for 2025–26 is virtually unchanged.

Table 5.1: World trade in thermal coal

	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage		
						2024 ^s	2025 ^f	2026 ^f
World trade	Mt	1,068	1,082	1,060	1,065	1.3	-2.0	0.5
Imports								
Asia	Mt	1,017	1,015	959	934	-0.1	-5.5	-2.6
China	Mt	372	383	330	295	3.1	-13.8	-10.6
India	Mt	182	185	191	193	1.7	3.2	1.0
Japan	Mt	124	118	116	116	-4.8	-1.5	-0.3
South Korea	Mt	97	96	95	94	-1.0	-1.4	-1.1
Taiwan	Mt	52	50	50	50	-3.4	0.1	-1.0
Exports								
Indonesia	Mt	511	533	518	515	4.3	-2.9	-0.6
Australia	Mt	202	201	202	205	-0.5	0.4	1.4
Russia	Mt	144	120	120	124	-16.8	1.5	2.3
Colombia	Mt	42	45	43	42	7.1	-4.4	-3.2
South Africa	Mt	65	57	62	65	-11.6	7.8	5.1
United States	Mt	44	45	43	43	2.3	-3.8	-1.1

Notes: **f** Forecast; **s** Estimate

Source: Department of Industry, Science and Resources (2024); McCloskey Markit (2024).

Table 5.2: Thermal coal outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Contract prices ^b								
– nominal	US\$/t	200	139	132	126	-30.5	-5.3	-3.9
– real ^c	US\$/t	206	139	129	122	-32.5	-7.0	-5.9
Spot prices ^d								
– nominal	US\$/t	173	136	129	114	-21.4	-5.1	-11.8
– real ^e	US\$/t	178	136	126	109	-23.6	-6.8	-13.6
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production	Mt	210	243	241	245	15.4	-0.9	1.8
Export volume	Mt	182	205	204	204	12.6	-0.5	0.1
– nominal value	A\$m	65,500	37,214	33,688	28,620	-43.2	-9.5	-15.0
– real value ^h	A\$m	70,045	38,190	33,688	27,693	-45.5	-11.8	-17.8

Notes: **b** refers to benchmark Japanese Fiscal Year 6322kcal GAR thermal coal contract reference price; **c** In current JFY US dollars; **d** fob Newcastle 6000 kcal net as received; **e** In 2024 US dollars; **f** Forecast; **h** In 2024–25 Australian dollars; **s** Estimate

Source: ABS (2024); Company Reports; Department of Industry, Science and Resources (2024); IHS (2024); NSW Coal Services (2024); Queensland Department of Natural Resources and Mines (2024).

Gas



Australia's LNG sector



81m tonnes
exported in 2023–24

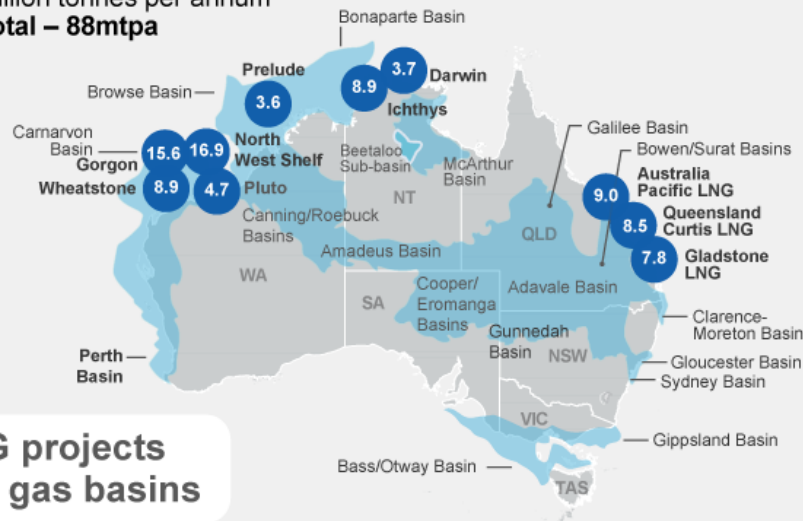


80%
of Australian LNG
exports sold to **Japan,
China and Korea**



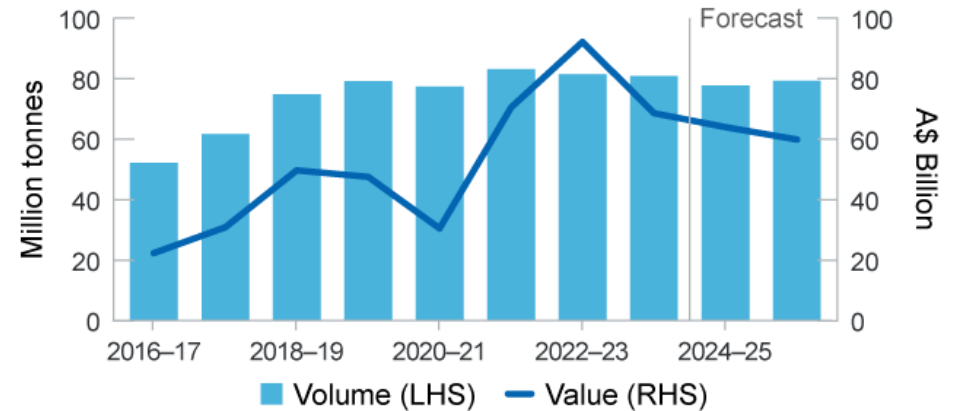
Around 3/4
sold on
**long-term
contracts**

- Gas basin
- Nameplate capacity, million tonnes per annum
Total – 88mtpa



LNG projects and gas basins

Australian LNG exports



Outlook



Earnings set to ease over the outlook period as prices drop



Steady Australian output expected, with **small declines** as projects deplete



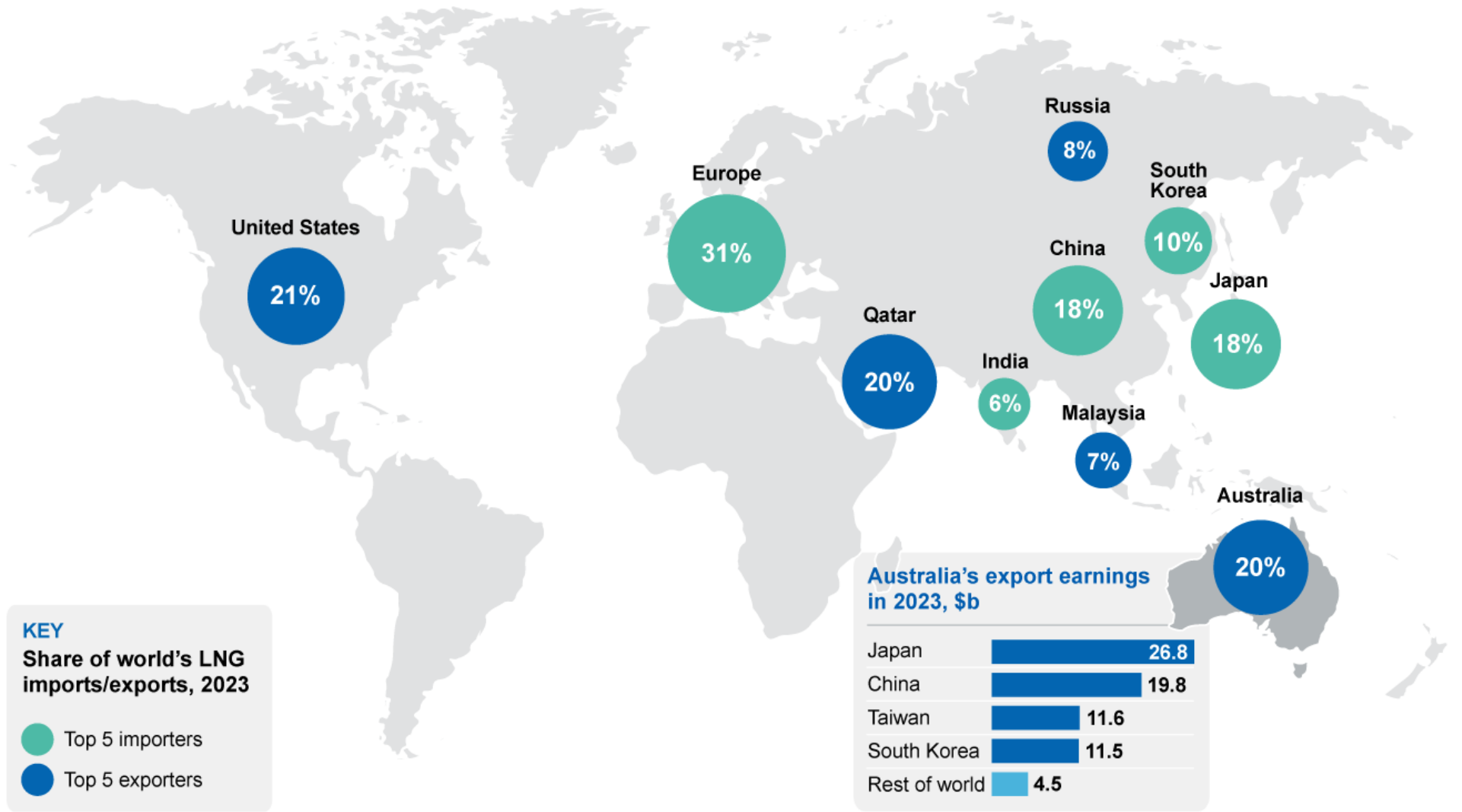
Global conflicts **present risks** to LNG production in Russia and the Middle East



Expenditure on exploration remains **relatively modest**

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 \$69 billion in 2023–24 to \$60 billion by 2025–26. This outlook is largely unchanged from the September 2024 *Resources and Energy Quarterly*.
- The fall in export earnings largely reflects a forecast drop in prices, though depletion of some reserves is expected to cut volumes slightly.
- LNG prices remain relatively high, but new supply from the US and Qatar is forecast to bring prices down to around US\$10/MMbtu by 2026.

6.2 World trade

Gas markets remain tight as Asian demand offsets weakness in Europe

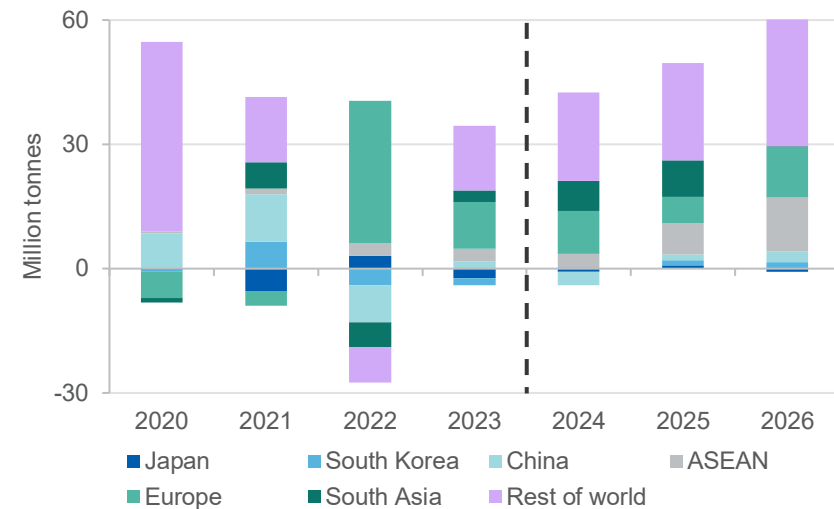
Gas markets have steadied somewhat in 2024 following the supply shocks of 2022 and readjustments of 2023. Uncertainties on the supply and demand side have kept prices somewhat elevated and volatile, with some minor price gains evident over recent months.

Global gas demand increased by around 3% in the first half of 2024 compared with the first half of 2023. Demand has been elevated, in part, by 14 consecutive months of record global temperatures, which concluded in July 2024. Global temperatures have subsequently edged back, but remain high in some places.

Conflicts in Europe and the Middle East have added to supply risks, while minor maintenance issues and outages temporarily affected US output.

As weather patterns and geopolitics stabilise, LNG markets are expected to align more closely with broader economic and industrial growth. Demand growth will likely edge back in Asia, particularly in China. In Europe, prices should stabilise as large maintenance cycles in Norway conclude and markets adapt to the final cessation of gas flows through Ukraine. New supply from the US and Qatar is also due to enter LNG markets from 2025. This new supply should keep pace with Asian demand growth and provide increased flexibility to European buyers, who have been operating with narrower supply options since the commencement of sanctions against Russia.

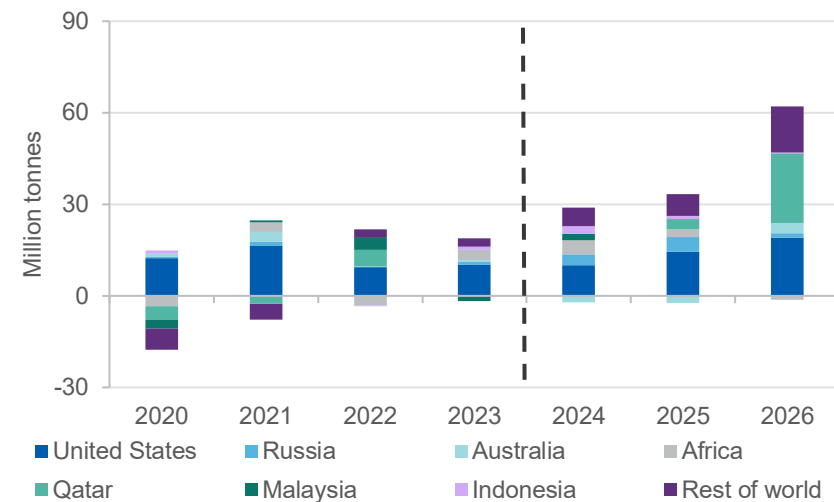
Figure 6.1: Global LNG demand growth forecasts to 2026



Notes: 2020, 2021, 2022 and 2023 figures based on historical data.

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

Figure 6.2: Global LNG supply growth forecasts to 2026



Notes: 2020, 2021, 2022 and 2023 figures based on historical data.

Source: Department of Industry, Science and Resources (2024); NexantECA (2024)

As supply grows and economic fundamentals reassert, gas markets are expected to become less constricted from 2025, with greater stability and lower costs from 2026. Global LNG demand is expected to increase by around 2.3% in 2024 (from 2023), largely driven by Asian demand. Supply and demand are generally expected to remain in balance in 2024 and 2025, with a small surplus emerging from 2026 (Figures 6.1 and 6.2).

6.3 World imports

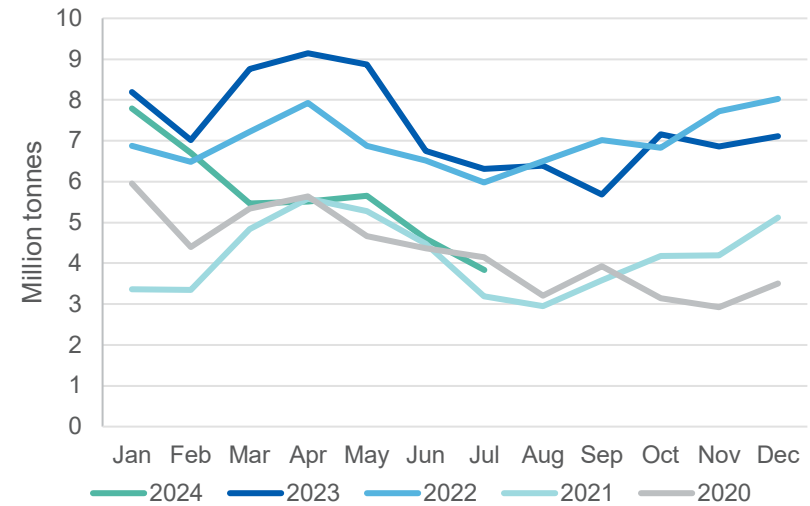
Low power demand has constrained European LNG imports

European demand weakened in early 2024 (Figure 6.3), but now appears to be largely following seasonal patterns, with industrial use beginning to recover. Early in the year, LNG use in electricity grids was substituted by higher use of nuclear power and renewables, potentially in anticipation of the final shutdown Ukrainian gas pipelines — which currently account for most of the remaining gas shipments between Russia and Europe. While Ukraine has allowed these flows to persist since Russia’s invasion, the contracts which govern them expire in December 2024 and are not expected to be renewed. This will leave Russian gas exports to Europe at a small fraction of their pre-invasion level.

The loss of Russian flows will have the greatest impacts in Eastern and Southern Europe, but some mitigation is likely to come from a ramp up at Greece’s Alexandroupolis LNG terminal. Commercial cargoes commenced at the terminal on 3rd October and the facility has capacity for up to 5.5 bcm (4 Mtpa) of natural gas annually.

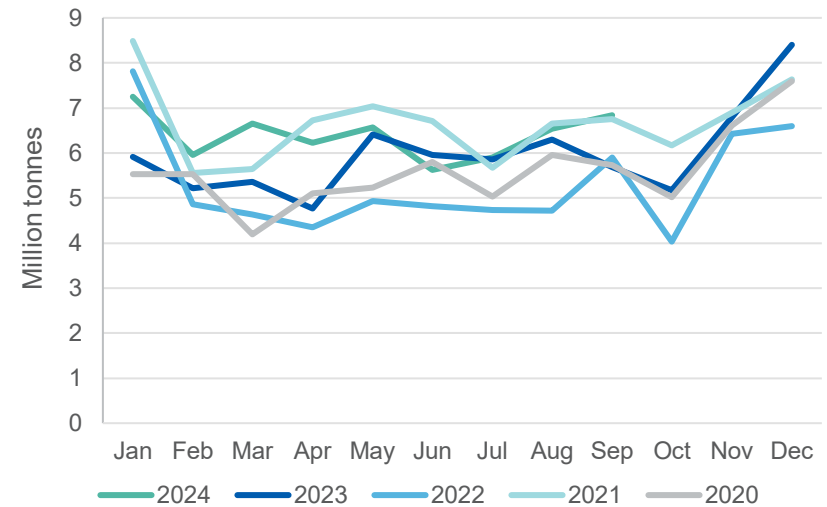
European LNG imports continue to decline, with inventory levels high, competition from nuclear and renewables strong, and the surge which followed Russia’s invasion of Ukraine now largely corrected. The upcoming winter season will likely see gas demand grow in Europe, but the impact on imports will be more muted given the scale of European inventories and the conclusion of maintenance at some Norwegian gas facilities. Most of the decline in remnant Russian gas supply should be mitigated in 2025 by new US supply, though competition from Asia for this supply could hold prices up in the short term.

Figure 6.3: Europe’s monthly LNG imports, 2020–2024



Source: McCloskey (2024)

Figure 6.4: China’s monthly LNG imports, 2020–2024



Source: McCloskey (2024)

China's LNG imports have grown steadily for almost two years

Chinese LNG imports have picked up steadily following price and lockdown-induced falls in 2022 (Figure 6.4). Imports were 12% higher in September 2024 compared to September 2023, and China was consistently the top LNG importer (ahead of Japan) throughout 2023. 2024 imports are expected to have exceeded the 2021 peak, which occurred before the Russian invasion of Ukraine pushed up LNG prices.

Import growth has occurred despite uncertainty over China's economic position, and reflects factors including a policy-induced substitution from coal, expansion in LNG use among heavy vehicles in China, and a long cycle of high cooling demand fuelled by record global temperatures.

Trade tensions between the US and China constitute a growing risk to Chinese imports of US LNG. New tariffs on Chinese imports of US LNG may undermine potential growth of LNG contracts between the countries and potentially deter China from LNG take-up in some instances.

Japan's LNG imports held in late 2024, but falls are expected in 2025

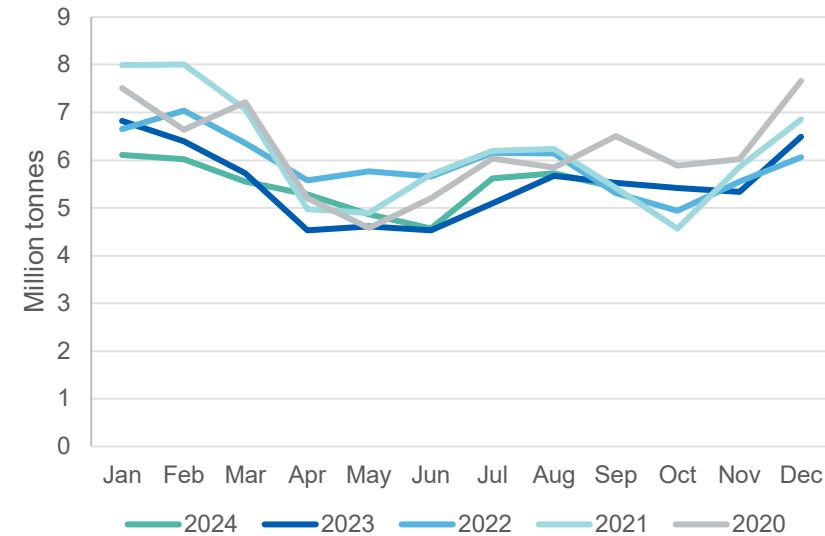
Japanese imports have tracked at fairly typical levels through most of 2024 (Figure 6.5), but slight declines in the second half of the year are expected to result in a small fall (around 1%) in LNG demand over 2024 as a whole. This largely reflects the ongoing restart of nuclear plants in Japan, with Onawaga 2 being the latest to commence.

Industrial demand remains relatively flat in Japan, but a potential uplift in 2025 provides a possible upside to the LNG import forecast over the outlook period.

South Korean imports remain solid, and relatively insensitive to prices

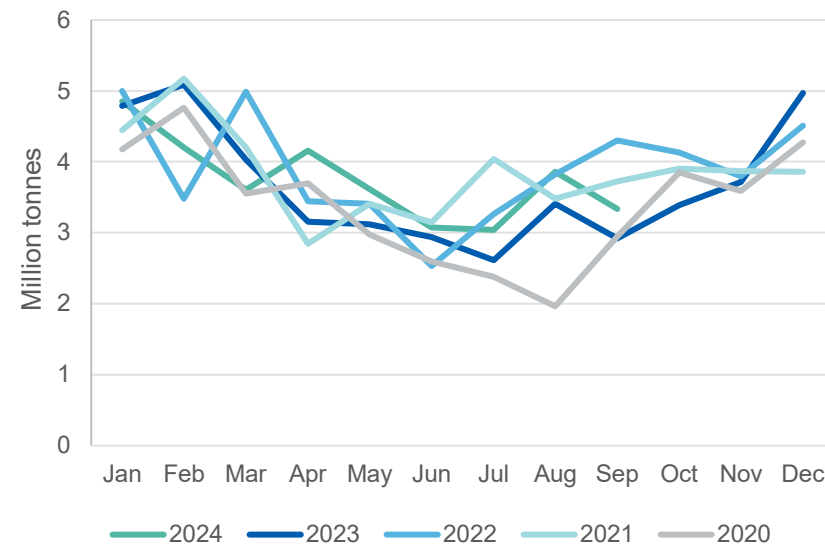
A brief cold stretch boosted South Korea's LNG imports during parts of the March quarter, but 2024 demand has generally remained around the average level of recent years (Figure 6.6). South Korea's power demand continues to grow modestly as industrial demand edges up, but it appears nuclear power is taking up most of the slack. A pick up in industrial demand adds a potential upside to LNG use over the next two years.

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



Source: McCloskey (2024)

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



Source: McCloskey (2024)

India's LNG imports edged up through the year, but prices remain an issue

Indian LNG demand was strong during the March quarter (Figure 6.7) and continued to rise through to mid-2024 as record temperatures drove up electricity consumption. 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. Natural gas use in India is likely to have risen by around 9% in 2024, adding pressure to LNG imports.

Growth is expected to persist in subsequent years as lower prices enable India's price-sensitive industries to expand their LNG use.

LNG imports are rising elsewhere, though at widely different rates

Elsewhere in Asia, growth has continued (Figure 6.8) but in a volatile way, due to the price sensitivity of many South-East Asian buyers. Growth in South-East Asian imports is expected to be led by Malaysia, Bangladesh, Singapore and Thailand. New Zealand is also likely to import LNG from 2025, with the Government announcing that import processes will be simplified in response to recent energy shortages.

6.4 World exports

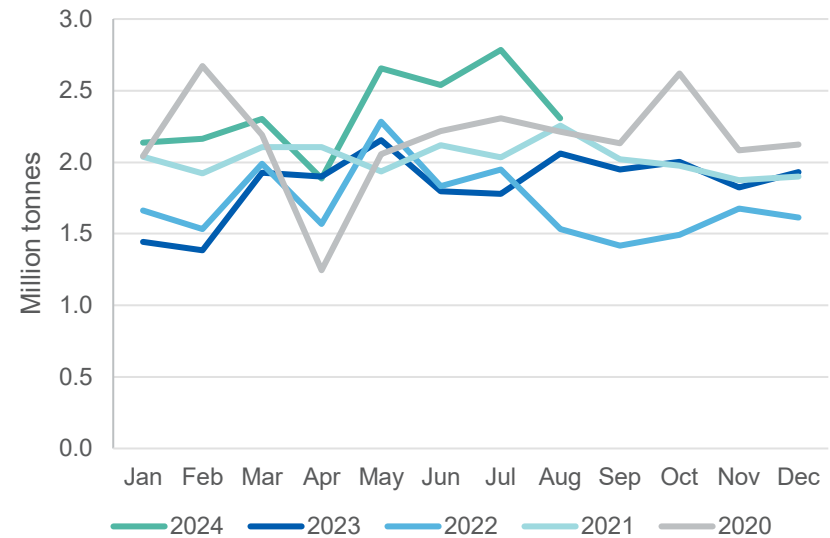
Global production growth has slowed following a strong 2023

Global supply growth has slowed in 2024 after a strong (US-led) pickup in 2023. Supply is expected to grow by around 2% over 2024 as a whole, with most growth expected in the first and last quarters of the year. Exports from the three largest suppliers (the US, Qatar and Australia) are expected to be flat, though some liquefaction capacity may come online in the US in late 2024 or early 2025.

Growth in US production has paused, but is expected to pick up in 2025

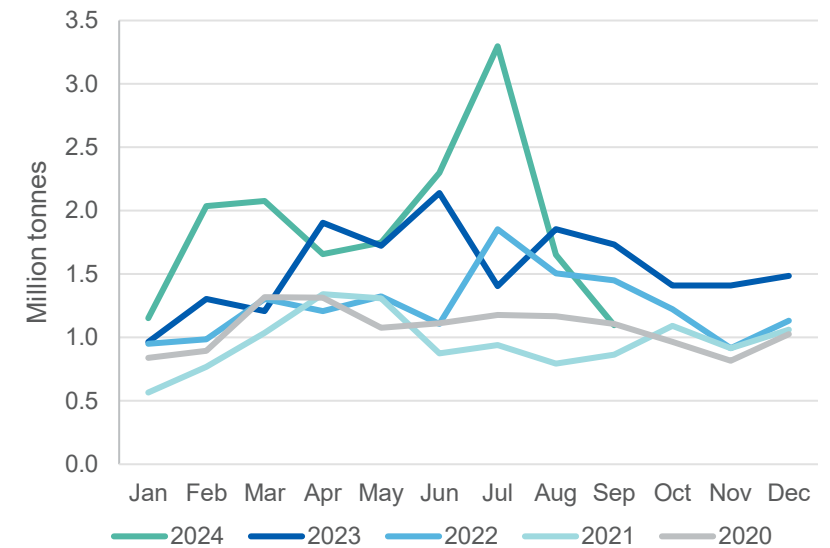
US production has been ramping up for several years, with the country overtaking Australia to become the top global exporter in 2023. Output growth paused briefly in 2024 due to the timing of project completions, but should resume from 2025 as more projects finalise.

Figure 6.7: India's monthly LNG imports, 2020–24



Source: McCloskey (2024)

Figure 6.8: Total monthly ASEAN LNG imports, 2020–24



Source: McCloskey (2024)

These include the expansion of Freeport LNG, and the Corpus Christi Stage 3 expansion, which should add 10 Mtpa of capacity by early 2025. Further out, Plaquemines LNG Phase 1 (with capacity of 10 Mtpa) is expected to begin supplying long-term contracts by 2026. The Golden Pass liquefaction project (with a substantial 18 Mtpa capacity) has faced delays but is now expected to commence in early 2026.

The US is expected to account for almost half of global growth in LNG export capacity out to 2030, with its exports expected to reach around 150 Mtpa by that year.

[Exports from Qatar were flat in 2024, but growth prospects remain strong](#)

Qatar has a range of projects under development, and its output is expected to almost double — from around 77 Mtpa in 2023 to 142 Mtpa by 2030. Geopolitical conflict has escalated in the Middle East over recent quarters, with potential disruptions in the Persian Gulf posing the largest risk to Qatar's short-term output. However, projects underway continue to progress, suggesting investors do not currently perceive a serious long-term threat from the region's complex geopolitics.

[Russian gas exports have fallen, with producers facing huge losses](#)

Russia's gas sector has faced growing difficulties since Russia's invasion of Ukraine. Gas exports fell sharply following the start of sanctions, with Russia able to substitute only partially for the loss of European export markets by diverting to Asia. The loss of access to European markets will worsen from December on the expiration of contracts covering the remaining flows transiting Ukrainian pipelines.

Other projects also continue to face problems. New LNG output from Russia's Arctic-2 project has been loaded but is now stranded. Icebreaking vessels are required to ship from the site, and the owners currently have only five partly built vessels of 21 initially planned. Trade restrictions are blocking further acquisitions, and liquefaction at the site has now halted.

Gazprom — Russia's state-owned gas company and the largest company in Russia — announced a loss of 309 billion roubles (or US\$3.2 billion) for

the first nine months of 2024. This compares to a 446 billion rouble profit over the first nine months of 2023 — which ultimately became a loss of about US\$7 billion for the full year. Gazprom's loss for 2024 is likely to be larger, with its production down by a third from pre-war levels and at its lowest level since 1989. Typically, Gazprom profits provide a funding base for future investment in Russia's gas sector, and growing losses may have significant implications for future Russian gas production.

Gas production will be further hampered by the breakdown in negotiations between Russian and Chinese stakeholders over two substantial proposed pipelines intended to direct gas to China. No other LNG-related constructions are expected to commence in Russia in the foreseeable future, and with profits and capital inflows falling away, there is little prospect that Russian LNG exports can recover any time soon.

[Marginal growth is expected from other LNG exporters](#)

Exports among smaller producers remain relatively flat, with small through-the-year growth in Nigeria, Angola, Brunei, Indonesia, Mozambique, Congo, and United Arab Emirates offset in part by slight falls from Algeria, Malaysia, Oman, and Papua New Guinea. Some ramp up in production is expected from late 2024. Floating liquefied natural gas (FLNG) projects have started shipping in Mexico and Congo, though their scale is relatively modest. Senegal-Mauritania's 2.4 Mtpa Greater Tortue Ahmeyim FLNG project is expected to be completed in the December quarter.

6.5 Prices

[Prices have edged up since September, but declines remain in prospect](#)

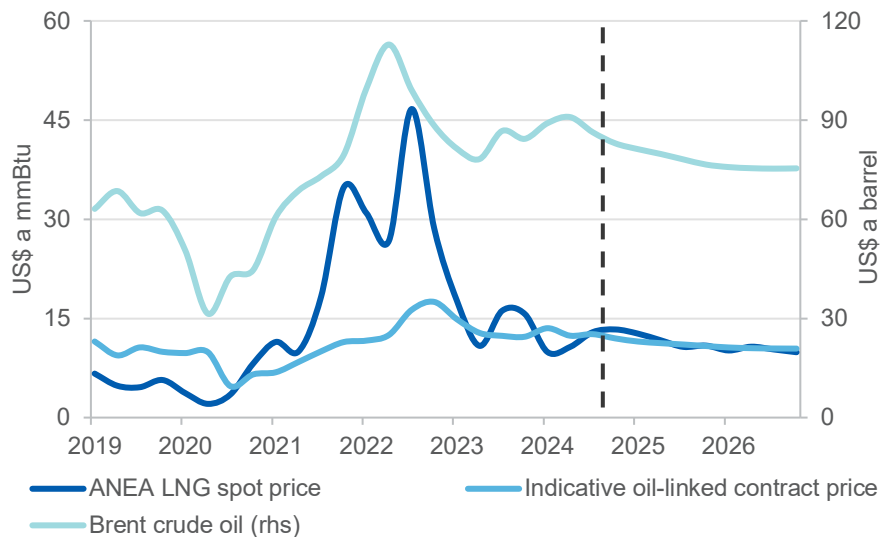
LNG markets rebalanced and stabilised in 2023 following the huge price surges of 2022. However, markets remain somewhat fragile due to the narrowing of supply options to Europe and consequent competition for cargoes between Europe and Asia. A series of minor disruptions to LNG production in the June and September quarters also kept prices somewhat elevated and volatile, with price pressures building up further in November.

Softer European demand has seen LNG cargoes move to Asia, where demand has held up more strongly. The resulting Asian price premium has drawn greater shipments from Qatar and the UAE, with Asia now absorbing 91% of exports from those countries. The share of US exports reaching Asia also rose (from 37% in April to 49% in July) and will likely rise further as Asian demand and US output grow in tandem.

US output — which is typically highly flexible — should help to reduce price premiums between different LNG markets. It should also result in lower and less volatile prices in general, through this effect may not become apparent until 2026 (when prices are expected to ease to around US\$10/MMBtu).

Price risks are starting to shift from geopolitics towards potential project delays and issues in the project pipeline. The fall in LNG prices anticipated over the outlook period will depend to some degree on projects currently under construction finishing on time and without significant disruptions or cost blowouts.

Figure 6.9: LNG spot and contract prices, 2019–26



Source: Bloomberg (2024); Department of Industry, Science and Resources (2024)

6.6 Australia

LNG exports are edging down, but recent announcements are positive

Australian gas exports are expected to hold largely steady over the next two years, with new supply from Woodside’s Pluto expansion and Santos’ Barossa Gas Project offsetting gradual declines from Woodside’s North West Shelf Project. Slow declines in output and exports are expected after 2026 if new supply fails to emerge.

Some Australian gas projects attained key milestones over 2024. These include Tamboran Resources Shenandoah South Pilot Project, where drilling has now commenced. Two wells are to be drilled in the Beetaloo Sub-basin, with flow tests to follow and production targeted for early 2026. Shenandoah South will feed the Northern Territory market, allowing other facilities currently shipping to the region to pivot towards export markets.

Woodside has announced a train closure at its North West Shelf facility. The company noted in its Half-Year Report (period ended 30 June 2024) that ‘... to manage both operating costs and emissions, North West Shelf is preparing to take one LNG train offline between late 2024 and mid-2025’.

Shell and PetroChina — who jointly own the Surat Gas project — have announced plans to develop Phase 2 of the project. The second phase is expected to contribute around 130 million cubic feet of gas per day, divided between domestic use and exports, the latter of which will ship from Curtis Island.

Santos has announced that its large Barossa Gas Project is past 82% completion. The gas export pipeline is now in place, and two wells are now complete, with the third and fourth wells under development.

In September, the Western Australian Government announced that gas producers will be able to export up to 20% of gas from onshore fields previously barred from exporting. This export allowance sunsets in 2030 and the remaining 80% of gas will be reserved for Western Australian domestic use. The export allowance provides additional clarity to potential investors and could improve potential profitability for gas projects currently

under consideration. The Western Australian Government has also announced that it will adopt a stronger ‘use it or lose it’ trigger for gas reserves, though details on this had not been released at the time of writing.

The Australian Energy Market Operator’s Gas Statement of Opportunities for March 2024 suggests that there could be ‘small seasonal supply gaps’ in east coast gas markets in the winters of 2026 and 2027. This presents a possibility that LNG intended for export markets may be redirected, resulting in a minor downside risk for exports in those years.

On balance, Australian LNG export volumes are expected to decline slightly over the outlook period, edging back to just under 80 Mt annually after 2023–24 (Figure 6.10). Beyond the outlook period, output levels could tighten further due to the gradual depletion of the North-West Shelf and slow progress in bringing new gas reserves online.

Onshore exploration remains modest overall (Figure 6.11), declining slightly from A\$214 million in the June quarter 2024 to A\$190 million in the September quarter. Offshore exploration rebounded in the September quarter (from A\$92 million to A\$125 million) after a sharp drop in the June quarter.

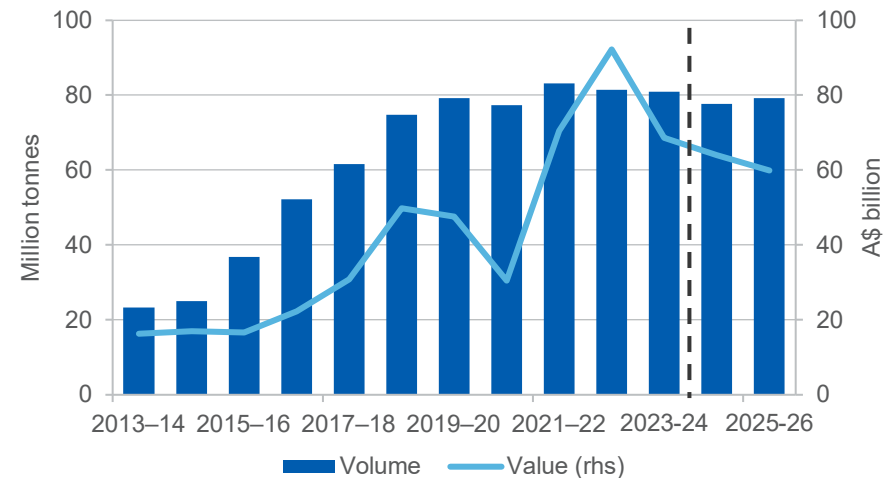
Australia’s LNG earnings are expected to ease further as prices drop

Australian LNG export earnings are expected to fall to A\$64 billion in 2024–25, with a further easing to A\$60 billion by 2025–26. This decline is largely a result of falling prices, with export volumes easing marginally.

Revisions to the outlook

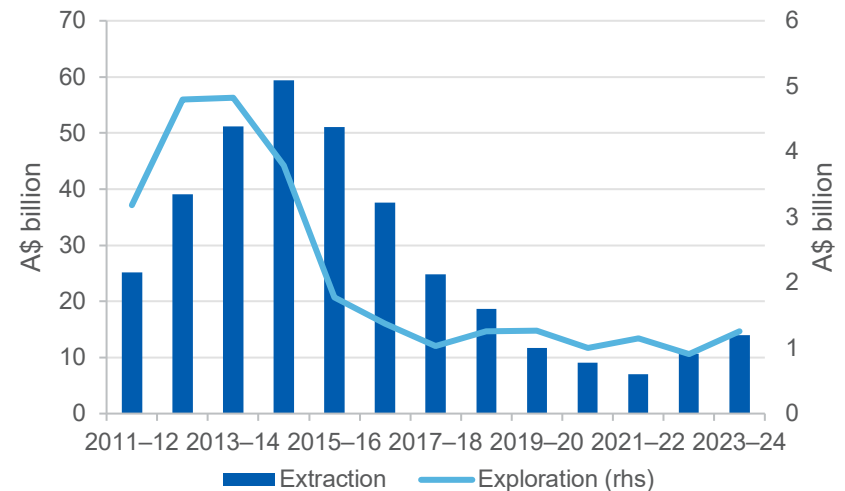
Australian LNG export earnings forecasts for 2024–25 have been revised down by A\$1.7 billion as volumes have come up slightly short at some facilities. Export earnings for 2025–26 are largely unchanged from those published in the September 2024 *Resources and Energy Quarterly*.

Figure 6.10: Australia’s LNG exports by value and volume



Source: ABS (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024)

Figure 6.11: Petroleum expenditure, extraction and exploration



Notes: Extraction expenditure consists of all expenditure on buildings and structures, plant and machinery equipment associated with Oil and Gas extraction.
Source: Australian Bureau of Statistics (2024) Private New Capital Expenditure and Expected Expenditure, 5625.0; and Mineral and Petroleum Exploration, 8412.0

Table 6.1: Gas outlook

World	Unit	2023	2024 ^g	2025 ^g	2026 ^g	Annual Percentage Change		
						2024 ^g	2025 ^g	2026 ^g
JCCC oil price ^a								
– nominal	US\$/bbl	86.7	83.1	72.9	70.8	-4.1	-12.3	-2.8
– real ⁱ	US\$/bbl	89.2	83.1	71.5	68.1	-6.9	-13.9	-4.7
Asian LNG spot price								
– nominal	US\$/MMBtu	14.8	11.9	11.6	10.3	-19.5	-2.8	-11.6
– real ^{h,i}	US\$/MMBtu	15.3	11.9	11.4	9.9	-21.8	-4.6	-13.4
LNG trade	Mt ^e	403.2	425.5	455.6	498.0	5.5	7.1	9.3
Gas production	bcm	4,038	4,132	4,214	4,327	2.3	2.0	2.7
Gas consumption	bcm	4,036	4,132	4,223	4,301	2.4	2.2	1.9
Australia	Unit	2022–23	2023–24	2024–25 ^g	2025–26 ^g	2023–24 ^g	2024–25 ^g	2025–26 ^g
Production ^b	bcm	164.0	163.8	157.3	156.8	– 0.1	– 4.0	– 0.3
– Eastern market	bcm	57.8	57.7	53.3	51.7	– 0.1	– 7.7	– 3.0
– Western market	bcm	91.0	85.3	84.4	83.9	– 6.3	– 1.0	– 0.6
– Northern market ^d	bcm	15.1	17.2	17.1	19.5	14.1	– 0.9	14.3
LNG export volume	Mt ^e	81.5	80.9	77.8	79.3	– 0.8	– 3.9	1.9
– nominal value	A\$m	92,237	68,588	64,036	59,907	-25.6	-6.6	-6.4
– real value ^f	A\$m	98,637	70,387	64,036	57,968	-28.6	-9.0	-9.5
LNG export unit value ^h								
– nominal value	A\$/GJ	21.4	16.1	15.6	14.3	– 25.1	– 2.9	– 8.2
– real value ^f	A\$/GJ	22.9	16.5	15.6	13.9	– 28.1	– 5.3	– 11.2
– nominal value	US\$/MMBtu	15.2	11.1	11.3	10.8	– 27.0	1.5	– 3.8
– real value ⁱ	US\$/MMBtu	16.3	11.4	11.3	10.5	– 30.0	– 1.1	– 7.0

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 Joint Production Development Area 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 2023–24 Australian dollars; **g** Forecast; **h** 1 MMBtu is equivalent to 1.055 GJ; **i** In 2023 US dollars.

Source: ABS (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024); Company reports; Nexant (2024) World Gas Model.

Oil



Australia's oil sector



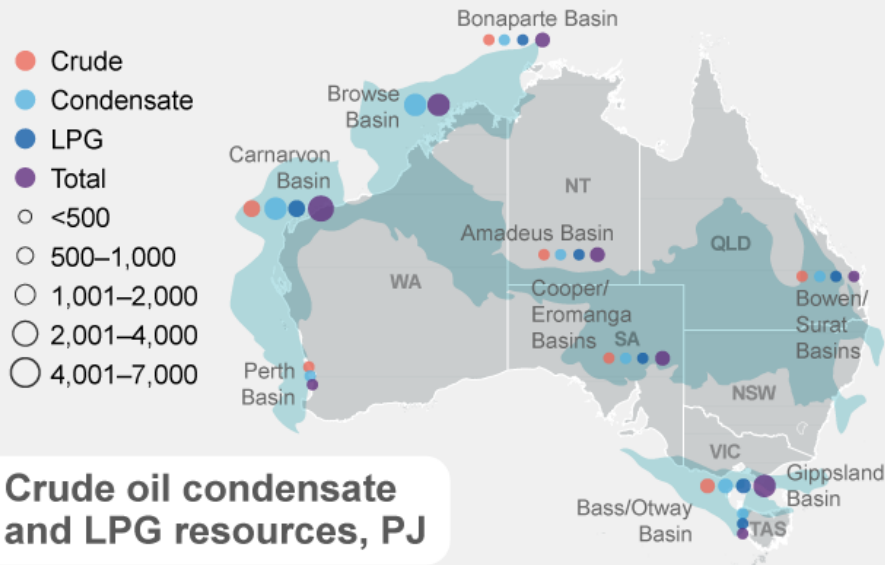
0.3%
of the world's
oil **reserves** and
0.5% of production



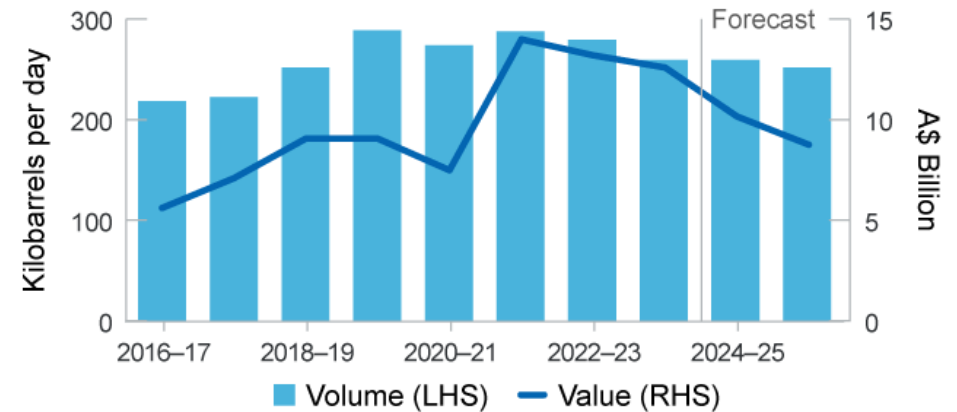
41% by value
of crude & condensate
exported to Singapore
and South Korea



Around 2/3
crude & condensate
produced at
Carnarvon basin,
offshore WA



Australian oil exports



Outlook



Oil prices will weaken from high North and Latin American supply



Earnings to **fall from 2024-25** as prices fall and basins deplete



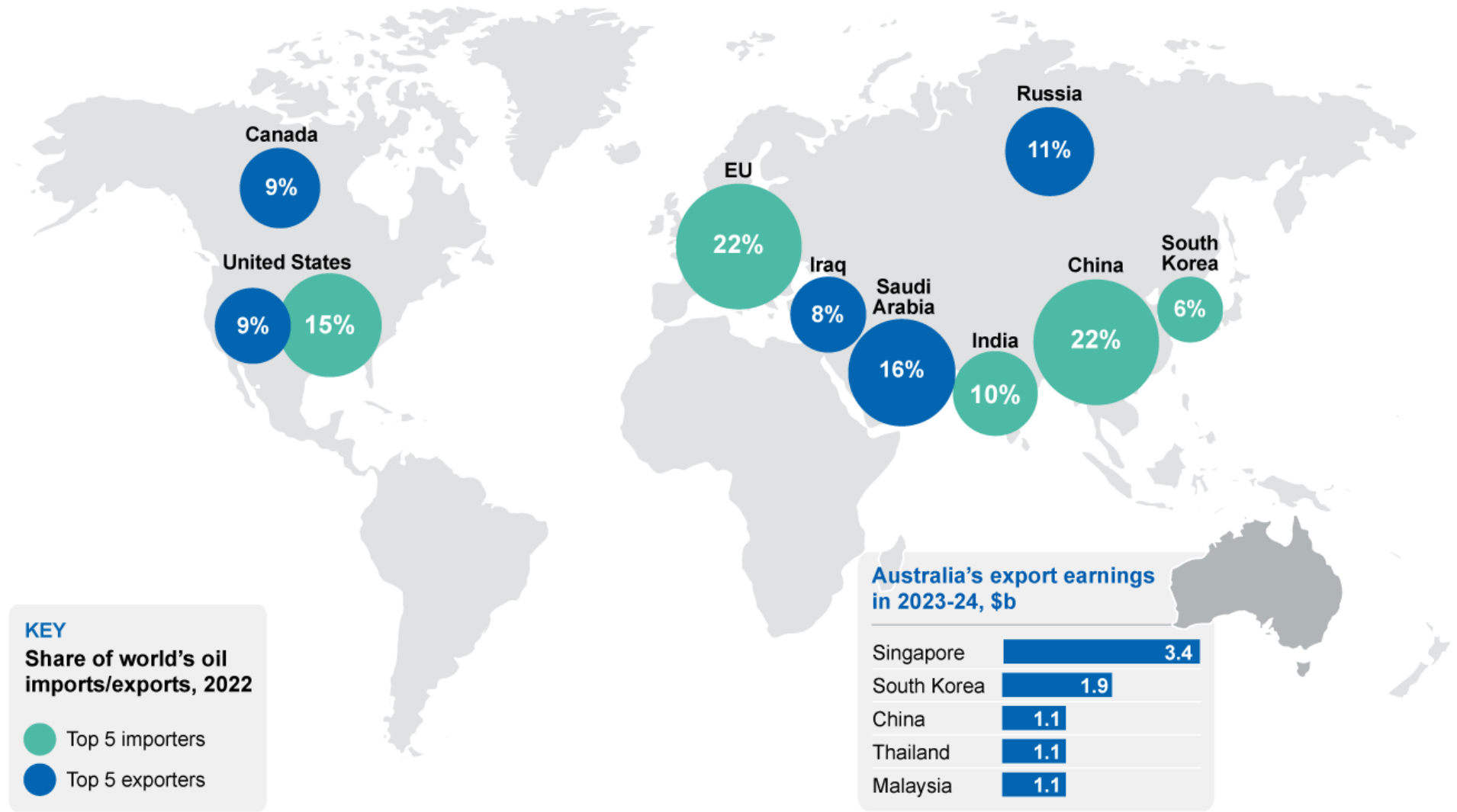
Australian production **volumes ease** as offshore fields depletes



Petroleum exploration expenditure in the June quarter was **above the 2023 average**

SOURCE: GA; DISR; OCE

Oil TRADE MAP



SOURCE: International Energy Agency, World Oil Statistics
 Note: Trade data includes crude oil, natural gas liquids, refinery feedstocks, additives and other hydrocarbons for 2021

7.1 Summary

- The Brent crude oil price is forecast to fall from an average US\$81 a barrel in 2024 to US\$69 a barrel in 2026. The fall is expected to be driven by weak world oil demand and gains in ex-OPEC production.
- Australia's crude and condensate output is forecast to fall steadily over the outlook period, from 262,000 barrels a day in 2024–25 to about 253,000 barrels per day by 2025–26 as mature fields see diminishing output.
- Australia's crude and condensate export earnings are forecast to fall from A\$13 billion in 2023–24 to A\$8.8 billion by 2025–26, as prices and output fall.

7.2 World consumption

Global oil demand is being driven by petrochemical and aviation demand

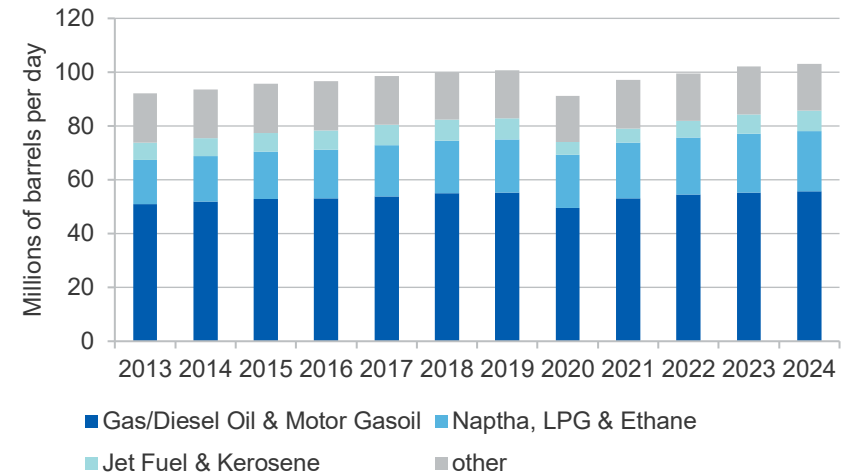
Global oil consumption is forecast to increase by 1 million barrels per day (mb/d) to 104.1mb/d in 2025 and by 1.2 mb/d to 105.6 mb/d in 2026. The growth in oil consumption is forecast to be driven by rising petrochemical feedstock demand (LPG, ethane, and naphtha) — as the demand for plastics and petrochemicals rises. The rise in plastics and petrochemical demand reflects increasing demand for lightweight materials.

Increased air travel is expected to result in moderate gains in the demand for aviation fuels. The IEA forecasts that aviation fuel demand will increase by 184 thousand barrels per day (kb/d) or 2.5% in 2025. According to the International Air Transport Association (IATA), global passenger air travel will surpass pre-pandemic levels in 2024 and is expected to grow further, averaging 3.8% per year for the next 20 years.

OECD demand is weakening on strong EV adoption and efficiency gains

OECD oil demand is set to plateau in 2024 with flat or slight declines expected in 2025 and 2026. The fall in demand in the OECD will be driven by the falling demand for transport fuels as vehicle fleets become more efficient and EVs displace the demand for petrol.

Figure 7.1: Global oil consumption by refined petroleum product



Source: International Energy Agency (2024)

Falling demand in the OECD in 2024 has been partly offset by rising demand for ethane in the US and a relatively strong summer driving season. Lower prices have kept European gasoil demand to remain strong ahead of the Northern Hemisphere winter.

Ex-OECD demand growth to slow on weak Chinese growth

India is expected to be the primary driver of ex-OECD demand growth, overtaking China. India's demand is expected to rise across most oil products over the outlook period. This is largely be driven by India's GDP growth, which the IMF estimates at about 7.0% in 2024 and forecasts at 6.5% in 2025 and 2026. Typically, ex-OECD demand for oil tracks GDP growth, therefore strong GDP growth from India is expected to translate to strong oil demand growth.

India's oil consumption has been further bolstered by its imports of Russian oil at a discount. According to S&P Global Commodity Insights, India imported over 1.5 mb/d of seaborne Russian crude in 2023. The discount on Russian oil has been narrowing according to the IEA: the

discount between Urals and Dubai M1 fell to US\$3.30 per barrel in October 2024 from US\$5.83 in May 2024. However, generally lower oil prices compared to 2023 may continue to bolster Indian demand.

In the post-COVID recovery period, China was the main driver of ex-OECD oil demand growth, however it is forecast that China's role will be less prominent in 2025 and 2026. China's adoption of LNG-powered trucks and EVs is putting downward pressure on its transport fuel consumption. Slower economic growth in China is expected to compound the slowing of China's oil demand growth. According to the IEA, Chinese oil demand has contracted over several months this year and will only see an overall increase of 140 kb/d in 2024 or less than 1%.

7.3 World production

Increased production in the Americas to drive global supply growth

Increasing production by ex-OPEC nations (the Organisation of Petroleum Exporting Countries) — centred in the Americas — is forecast to see world oil supply average 104.9 mb/d in 2025 and 106.1 mb/d in 2026. These increases are expected to be primarily driven by new oil production in the US, Guyana, Canada, and Brazil. Most of the growth in oil supply is due to conventional offshore supply. A diminishing share of new oil supply will be coming from US light tight oil. Brazil will bring online four new FPSO's in 2025 which will increase overall oil production by 800 kb/d.

Some of the increase in supply between 2024 and 2025 is not the result of new capacity. Some of this capacity returning to production is the result of completed maintenance and the ending of disruptions due to weather events in the Gulf of Mexico in H2 2024.

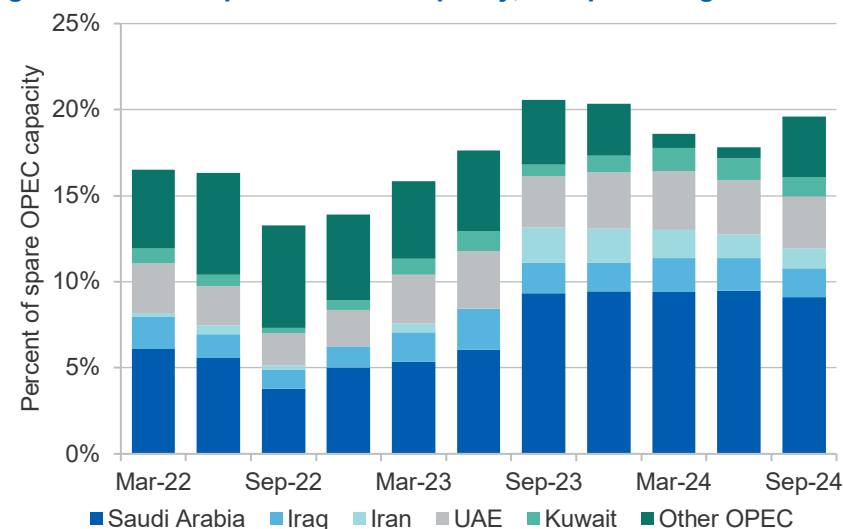
OPEC+ delay unwinding of cuts on well supplied market

There are currently 5.9 mb/d of output cuts by OPEC+ in place (see Figure 7.3). 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 (2.2 mb/d) were voluntary, which were initially scheduled to expire in October 2024. At the

time of writing, OPEC+ have delayed the phasing out of the 2.2 mb/d cuts and April 2025 is the earliest the cuts would be unwound, and this could be delayed further depending on market conditions.

In the September quarter 2024, nearly 600 kb/d of Libyan oil supply was taken offline following a domestic political dispute. Since the resolution of the dispute the 600 kb/d supply has come back online, bringing Libyan production back up to pre dispute levels at 1.2 mb/d, according to the IEA.

Figure 7.2: OPEC spare crude oil capacity, as a percentage of total



Notes: Spare capacity is the estimated capacity which can be produced within 90 days. Condensate excluded.
 Source: Wood Mackenzie (2024), International Energy Agency (2024), Department of Industry, Science and Resources (2024)

7.4 Prices

Strong supply and weak demand is expected to bring prices down

Oil prices have been volatile through the December quarter, rising and falling with perceived geopolitical risks. Up to the time of writing, the Brent price has ranged between US\$71 and US\$80 per barrel, WTI has ranged between US\$67 and US\$77 per barrel.

Transport fuel demand — gasoline and diesel oil — is expected to plateau over the outlook period. Most growth in oil demand is expected to come from petrochemicals and aviation fuels (see [World Consumption](#) section). Strong Ex-OPEC supply gains are forecast to result in a well-supplied market that will continue to put downward pressure on prices.

The potential unwinding of OPEC+ production in cuts in 2025 and 2026 could put further downward pressure on prices. WTI and Brent prices are forecast to fall steadily during the outlook period absent major supply disruptions. In 2026, Brent is forecast to fall to US\$68 per barrel and WTI is forecast to fall to US\$65 per barrel (see Figure 7.3).

Middle East geopolitical tensions are lifting risk premiums and volatility

Global political tensions have continued to add volatility to the oil market. Of particular interest to the oil market are tensions around the Persian Gulf and its ports. In 2023, 16 mb/d of seaborne crude supply transited via the Persian Gulf and the Gulf of Oman into the Indian Ocean. Iran — which produces 3.4 mb/d — borders the Persian Gulf and holds one side of the Strait of Hormuz through which Persian Gulf oil exits to the Indian Ocean. As perceived tensions have flared, prices have moved in tandem as the market has priced in a risk premium on potential disruptions to oil flows.

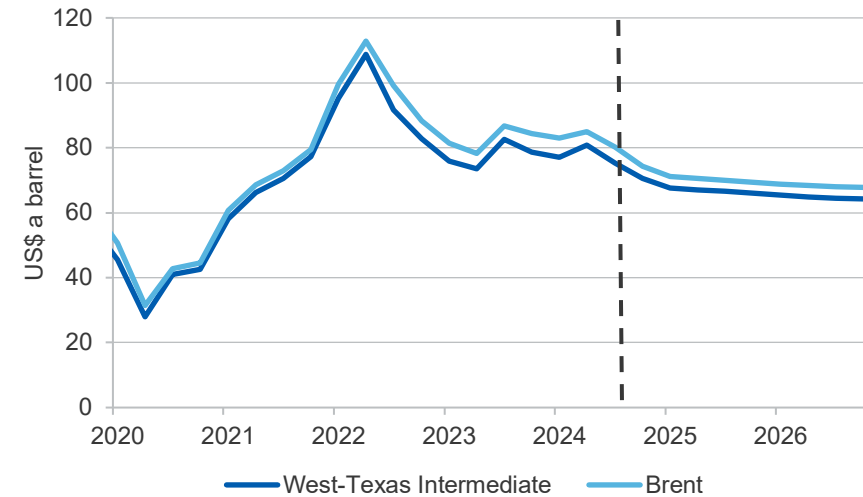
7.5 Australia

Australian export values to fall as volumes and prices fall

Australian crude oil and condensate export earnings fell by 15% year-on-year to reach \$2.7 billion in the September quarter 2024. The fall reflects falling prices and lower volumes of crude and condensate production, notably from the Northern Carnarvon Basin which is approaching end of life. The Northern Carnarvon Basin includes substantial fields such as those associated with the North West Shelf and Greater Enfield projects.

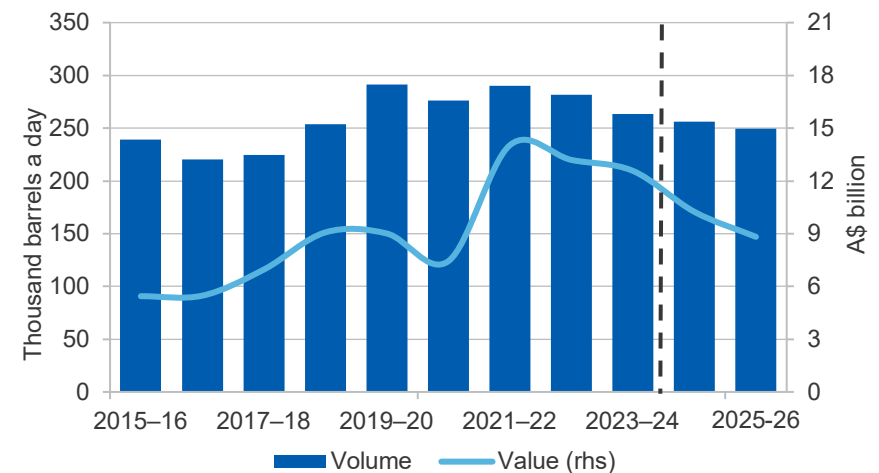
Output is forecast to fall further over the outlook period — to 253 kb/d in 2025–26 — as the Northern Carnarvon Basin fields deplete further. Export values are forecast to fall to \$8.8 billion by 2025-26, as production and prices both fall through the outlook period (Figure 7.4).

Figure 7.3: Price outlook



Source: Bloomberg (2024); Department of Industry, Science and Resources (2024)

Figure 7.4: Australian crude oil and condensate exports



Source: Australian Bureau of Statistics (2024); Department of Climate Change, Energy and Water; Department of Industry, Science and Resources (2024).

Moderate increases in refined production consumption led by aviation fuel

Australia's consumption of refined oil products rose by 3% year-on-year in the September quarter 2024. The increase was driven by a 9% year-on-year rise in aviation fuel consumption and a 2% rise in diesel consumption.

Exploration

Australia's petroleum exploration expenditure in the September quarter 2024 was \$314 million, up on the \$265 million 2023 average but still below the highs of 2010-2015.

Revisions to forecasts

Since the September 2024 Resources and Energy Quarterly, the forecasts for Australia's crude and condensate export earnings have been revised up by \$0.4bn (to \$10.3 billion) in 2024–25 and \$0.3 bn (to \$8.8 billion) in 2025–26.

Table 7.1: Oil Outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Percentage changes		
						2024 ^s	2025 ^f	2026 ^f
Production ^a	mb/d	102	103	105	106	0.3	2.3	1.0
Consumption ^a	mb/d	102	103	104	106	1.2	1.2	1.1
WTI crude oil price								
– nominal	US\$/bbl	78	76	67	65	-2.1	-12.0	-3.1
– real ^b	US\$/bbl	80	76	66	62	-4.9	-13.6	-5.1
Brent crude oil price								
– nominal	US\$/bbl	83	81	70	68	-2.3	-12.8	-3.1
– real ^b	US\$/bbl	85	81	69	66	-5.1	-14.4	-5.0
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Crude and condensate								
Production ^{ac}	kb/d	291	270	262	253	-7.5	-2.8	-3.4
Export volume ^a	kb/d	282	263	256	250	-6.4	-2.7	-2.6
– Nominal value	A\$m	13,193	12,570	10,270	8,820	-4.7	-18.3	-14.1
– Real value ^h	A\$m	14,108	12,900	10,270	8,535	-8.6	-20.4	-16.9
Imports ^a	kb/d	169	169	178	190	-0.5	5.6	6.6
LPG production^{acd}	kb/d	93	95	88	88	1.9	-7.1	0.2
Refined products								
– Refinery production ^a	kb/d	252	256	227	227	1.3	-11.2	0.0
– Export volume ^{ae}	kb/d	6	7	6	5	21.4	-14.2	-5.6
– Import volume ^a	kb/d	856	894	918	923	4.4	2.7	0.6
– Consumption ^{ag}	kb/d	1,022	1,061	1,075	1,080	3.8	1.3	0.5

Notes: **a** data was revised in the December quarter 2021 to align with the Australian Petroleum Statistics; **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; **s** Estimate.

Source: ABS (2024); International Energy Agency (2024); US Energy Information Administration (2024); Department of Industry, Science and Resources (2024); Department of Climate Change, Energy, Environment and water (2024).

Uranium



Australia's uranium sector



Ranked 1st
for uranium
resources

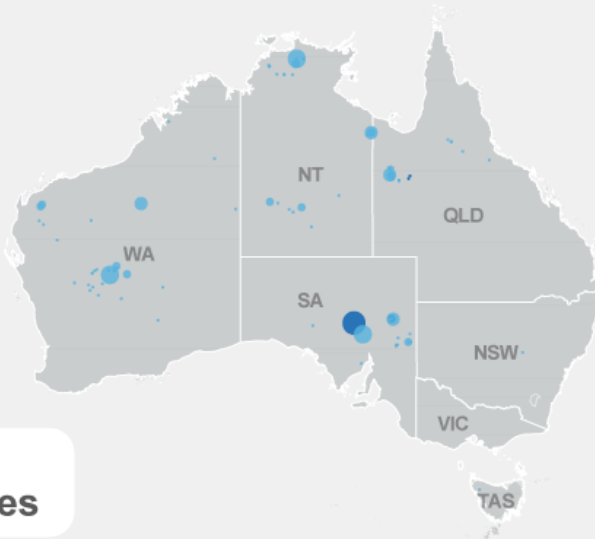


Ranked 4th
largest producer
globally



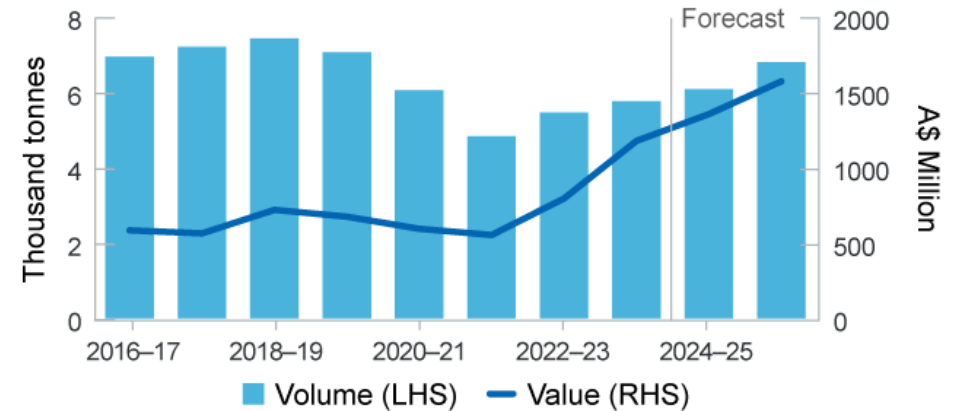
\$1,200 million
value of exports
2023–2024

- Deposit
- Operating mine
 - <2,967
 - 2,968–9,762
 - 9,763–17,571
 - 17,572–59,338
 - >59,339



**Major uranium
deposits, tonnes**

Australian uranium exports



Outlook



Uranium prices have moderated, and growth is expected through the outlook



Earnings have passed a low point, with higher prices and volumes in prospect



The opening of the Honeymoon mine in South Australia to **boost exports**



Exploration spending has risen solidly from its low point in 2020 and 2021

SOURCE: DISR; OCE

8.1 Summary

- Uranium prices have fallen to around US\$80 a pound, down from a historical high of over US\$100 a pound in early 2024 as the market stabilises from a major supply shock in the March quarter.
- Rising demand and supply issues are likely to push prices back up to US\$88 a pound in 2025 and US\$94 a pound in 2026, as reactors continue to draw from inventory to meet requirements.
- Strong prices and increased volume, assisted by the re-opening of the Honeymoon uranium mine, are forecast to lift Australian export values from \$1.4 billion in 2024–25 to \$1.7 billion by 2025–26.

8.2 World consumption

Nuclear power capacity increasing to meet growing energy demand

Many countries are seeking to expand their nuclear power capability to meet increasing energy demand and net zero climate goals. (Figure 8.1). As global demand for uranium is driven by demand for reactor fuel, expanding nuclear power capability will increase long-term uranium demand.

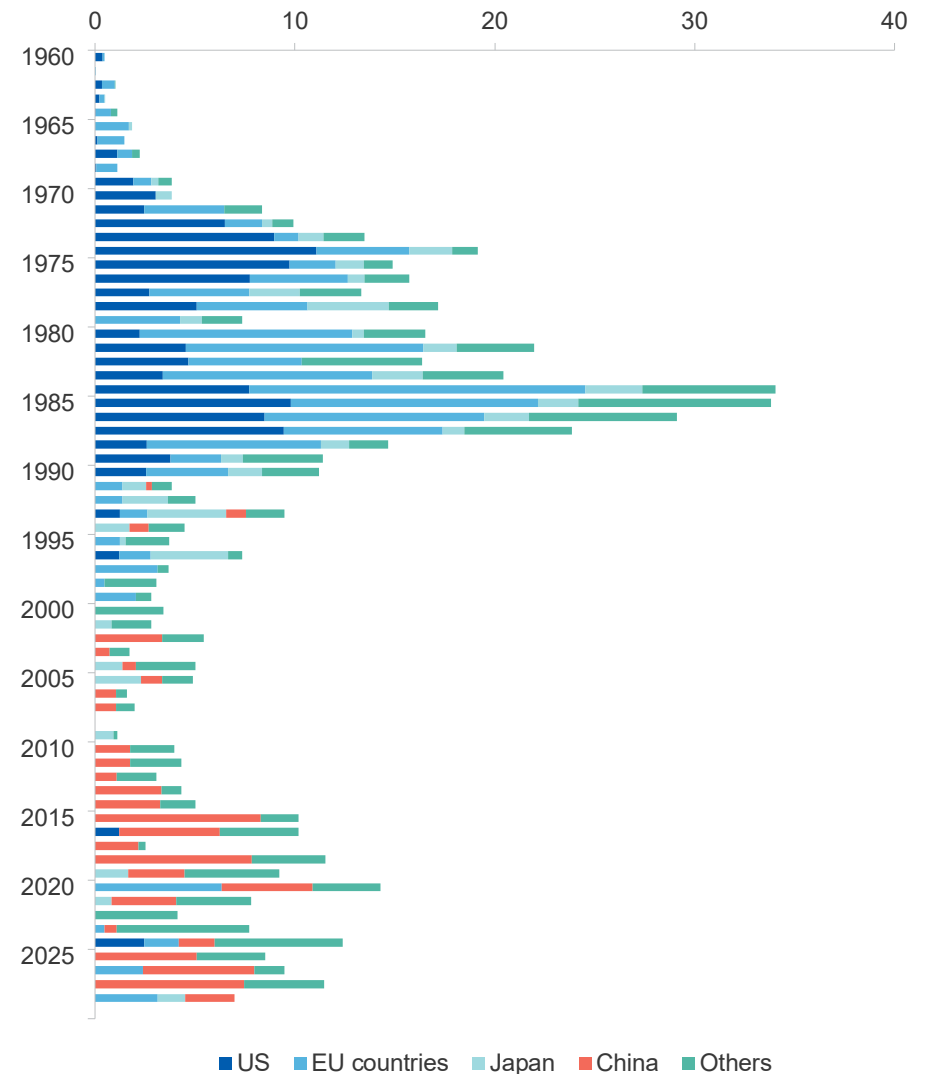
Consistent with the September 2024 REQ, India and China remain the predominant drivers of demand from new reactors. Forecasts for uranium demand in 2025 are 99kt in 2025 and 102kt in 2026 (Figure 8.2). India's recent push to expand its nuclear capacity has progressed with fuel loading achieved at the Rajasthan-7 reactor, with full operation expected by the end of the calendar year.

During the September 2024 Climate Week conferences in New York, 14 international financial institutions, including Bank of America and Barclays, pledged their support for nuclear power. This represented a 'show of faith' in nuclear power, since securing finance has been a historical barrier to scaling.

Data centre owners investing in SMRs

Interest in Small Modular Reactors (SMRs) has been increasing from industry, research and government. SMRs have a smaller construction

Figure 8.1: Nuclear power generation capacity added by year (GWe)



Sources: International Energy Agency (2024); World Nuclear Association (2024); Department of Industry, Science and Resources (2024)

footprint and are more modular than traditional power plants. For these reasons, SMRs are being considered by major tech companies as a low emissions way to power large data centres. For example, in the United States, Google has announced plans to purchase energy from Kairos Power. Kairos Power’s nuclear reactors are expected to eventually provide a total of 500 MW to the grid.

Reactors restarted and refurbished to meet rising energy demand

Reactor 2 of the Shimane Nuclear Power plant in Japan is scheduled to restart in early December 2024. This follows the October restart of the number 2 unit at the Onagawa power plant. In Canada, a project to refurbish the 4 Darlington units will be completed by the end of 2026.

Inventories to come under pressure as production falls short

Reactor nuclear fuel consumption may be greater than combined primary and secondary supply in the outlook period. The difference is expected to be met by drawdowns of existing power plant inventory stocks - nuclear power plants hold large inventories relative to other types of power plants to ensure they will have sufficient reactor fuel to meet immediate reactor requirements.

8.3 World production

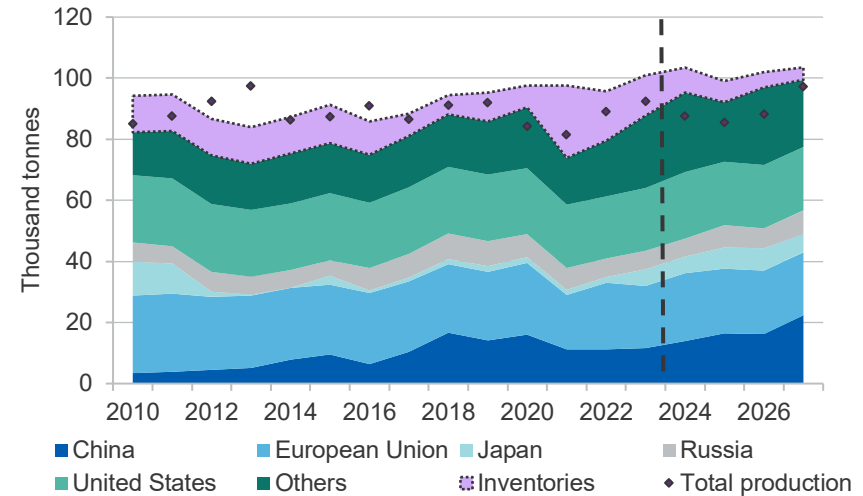
To meet rising uranium demand, new mines are commencing construction

Plans to expand uranium supply capability have been progressing steadily. Lotus Resources has announced an accelerated restart plan for their Kayelekera mine in Malawi, with production expected during Q3 2025. Mining at the site has been paused since 2014. Morocco’s Uranex mine is expected to commence production by 2028. Total global production of uranium is estimated to be approximately 86kt in 2025 and forecast at 88kt in 2026 (Figure 8.3).

Secondary supply sources continue to drop as enricher sales fall

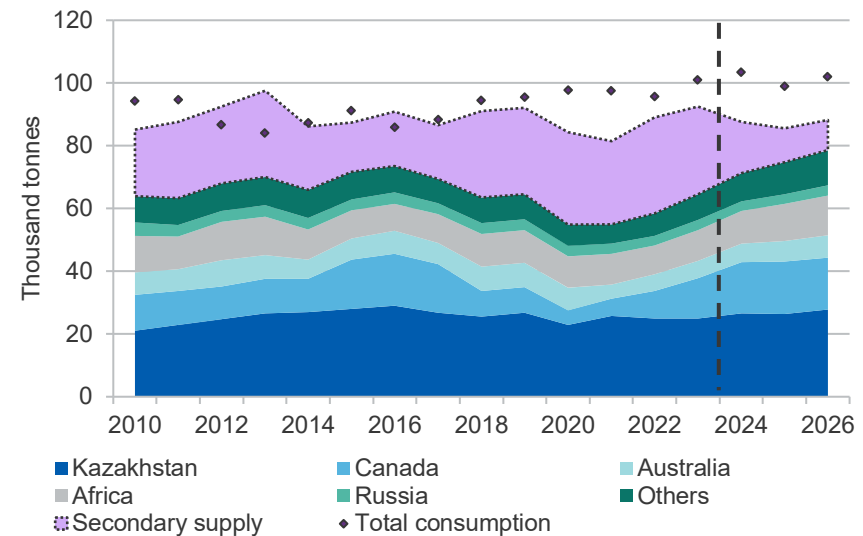
Secondary uranium supply — which includes inventory sales, enricher sales and fuel recycling — is expected to continue falling to 16kt in 2025

Figure 8.2: World uranium consumption and inventory build (U3O8)



Sources: International Energy Agency (2024); World Nuclear Association (2024); Ux Consulting (2023)

Figure 8.3: World uranium production (U3O8)



Sources: International Energy Agency (2024); World Nuclear Association (2024); Ux Consulting (2023)

from 28kt in 2023. This can be partially attributed to a reduction in enricher sales. Due to the desire to diversify away from Russian supply, greater reliance has been placed on western uranium suppliers to meet reactor demand.

With rising demand for western enrichment, major utilities such as Urenco and Orano no longer have the spare reactor capacity to undertake secondary production activities such as underfeeding. A reduction in underfeeding activities has reduced the availability of secondary uranium to the market. In 2022, Urenco cancelled an existing re-enrichment supply contract with TENEX, which is estimated to be worth over 0.9kt per year. The reduced availability of secondary supply sources is increasing reliance on primary uranium production to meet demand and may result in the market being more vulnerable to supply shocks at existing mines.

Supply stability vulnerable to production setbacks

Due to political tensions resulting from the 2023 Coup d'état in Niger, Orano has been unable to export uranium from their SOMAÏR mine, with all output held on site. In October, Orano announced it had suspended mining until exports were able to recommence. In 2022, the mine produced 2.4kt, which fell to 1.3kt in 2023. The uncertainty of mining operations in Niger represents a potential instability in global uranium supply.

Kazatomprom has decreased its 2025 production target by approximately 6kt to 30-31kt, citing the effects of the persistent shortages of sulphuric acid used in the uranium extraction process. This follows Kazatomprom's March 2024 downwards production announcement, which was a primary driver of uranium's price spike in the March quarter 2024. Kazatomprom is the world's largest uranium supplier, contributing over 20% of the world's primary uranium production.

8.4 Prices

Rising demand and supply concerns to elevate prices

Uranium spot prices in the past quarter have fallen to around US\$80 a pound, down from a high of US\$105 a pound in the March quarter 2024 (Figure 8.3). However, rising demand for uranium and potential supply issues are expected to increase uranium prices over the outlook period. Uranium prices are forecast to increase to US\$88 a pound in 2025 and to US\$94 a pound in 2026. Given market tightness, a price spike (e.g. a return to historic highs of over US\$100 a pound in the March quarter of 2024) in the outlook period is possible.

Figure 8.4: Uranium price outlook



Sources: Cameco Corporation (2024); Uranium Spot Price; Ux Consulting (2024) Uranium Market Outlook

8.5 Australia

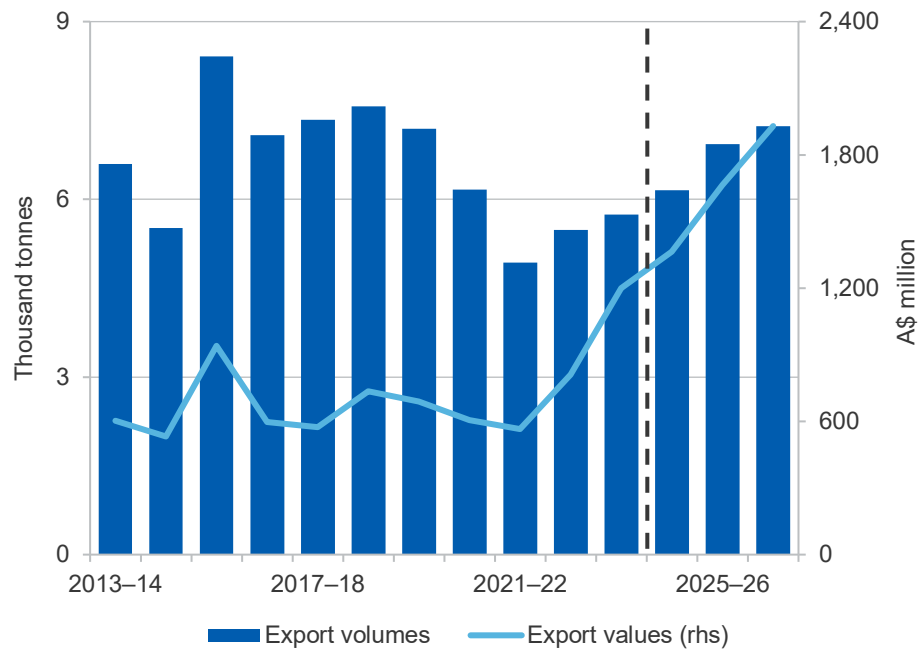
Ramp up at Honeymoon mine to lift Australian export earnings

Australia has three operating uranium mines, with production at the recently re-opened Honeymoon mine expected to continue ramping up. The increased export volume and high price outlook is expected to increase Australia's uranium export earnings to \$1.4 billion in 2024–25 (Figure 8.4), with exports forecast at \$1.7 billion in 2025-26.

Exploration

Uranium exploration has picked up following the lift in prices. Explorers seeking uranium spent \$26.7 million on exploration in the September quarter 2024. This compares to \$3.2 million spent in the December quarter 2021 but remains below the highs of the late 2000s and early 2010s.

Figure 8.5: Australia's uranium exports



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

Revisions to the outlook

Since the September 2024 *Resources and Energy Quarterly*, the forecast for Australia's uranium export earnings have been revised up by \$18 million to \$1.4 billion in 2024–25. Forecast export earnings in 2025-26 have been revised up by \$100 million to \$1.7 billion. This is driven by an upward revision in export volumes and prices.

Table 8.1: Uranium outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Primary Production	kt	64.6	71.3	74.7	78.5	10.4	4.7	5.2
Africa ^b	kt	9.8	10.5	11.8	12.6	6.8	12.8	6.7
Canada	kt	13.0	16.3	16.7	16.6	25.9	2.0	-0.5
Kazakhstan	kt	24.9	26.6	26.4	27.8	7.0	-0.7	5.1
Russia	kt	3.2	3.1	3.1	3.2	-3.8	0.0	5.9
Consumption	kt	87.7	95.2	92.2	97.0	8.6	-3.2	5.3
China	kt	11.5	14.0	16.4	16.2	21.0	17.3	-1.0
European Union 28	kt	20.4	22.1	21.2	20.9	8.2	-3.9	-1.8
Japan	kt	5.5	5.5	6.9	7.2	0.0	25.8	4.1
Russia	kt	6.0	6.0	7.3	6.6	0.0	21.2	-9.5
United States	kt	20.5	21.8	20.8	20.8	6.2	-4.7	0.0
<u>– nominal</u>	US\$/lb	62.5	86.1	87.9	94.9	37.7	2.1	8.0
<u>– real ^c</u>	US\$/lb	64.4	86.1	86.2	91.3	33.8	0.2	5.8
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production	t	5,409	5,797	6,210	6,933	7.2	7.1	11.6
Export volume	t	5,485	5,742	6,152	6,933	4.7	7.1	12.7
– nominal value	A\$m	812	1,200	1,363	1,663	47.9	13.5	22.0
– real value ^d	A\$m	868	1,232	1,363	1,609	41.9	10.6	18.1
Average price	A\$/kg	147.9	209.1	221.5	239.8	41.3	5.9	8.3
– real ^d	A\$/kg	158.2	214.5	221.5	232.1	35.6	3.2	4.8

Notes: **b** Includes Niger, Namibia, South Africa, Malawi and Zambia; **c** In 2024 US dollars; **d** in 2024–25 Australian dollars; **s** estimate; **f** forecast.
 Source: Department of Industry, Science and Resources (2024); Cameco Corporation (2024); Ux Consulting Uranium Market Outlook (2024)

Gold



Australia's gold sector



World's 3rd largest producer of gold in 2023

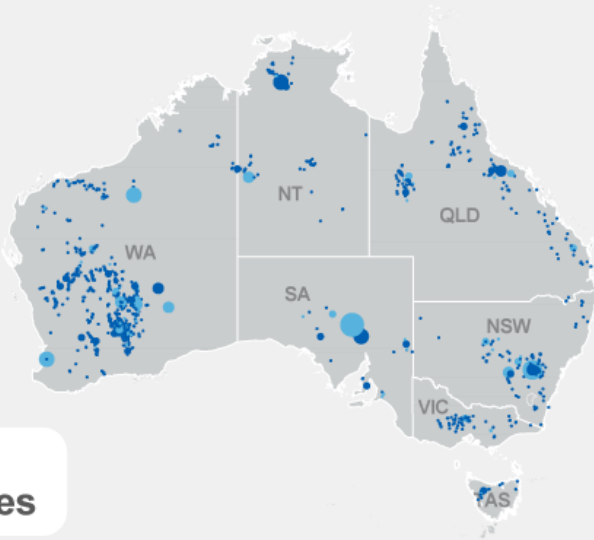


22% of gold resources, the **largest** global share



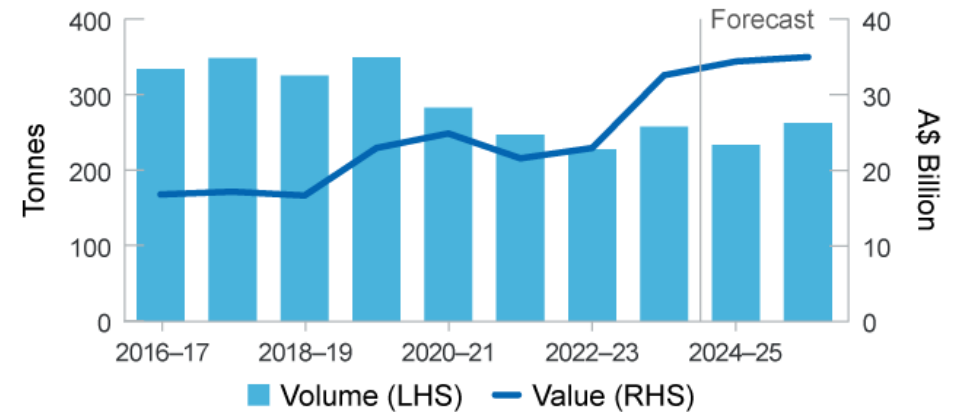
258 tonnes exported in 2023-24, valued at **\$33 billion**

- Deposit
- Operating mine
- <20
- 21-70
- 71-185
- 186-473
- 474-1,028
- >1,028



Major gold deposits, tonnes

Australian gold exports



Outlook



Gold prices expected to remain elevated throughout the forecast period



Higher prices set to **lift export earnings to \$35 billion** in 2025-26



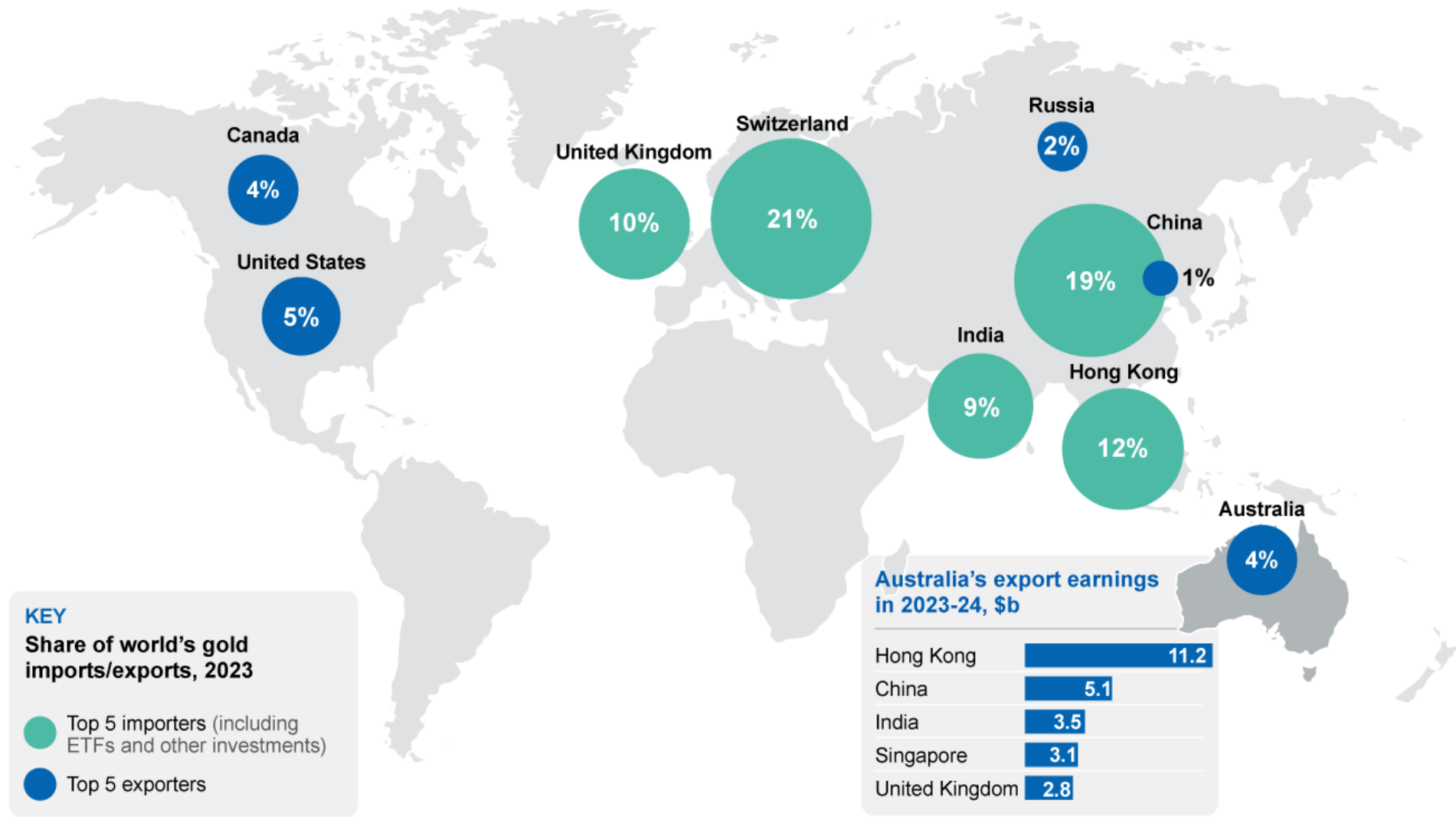
Production to increase in 2025 with new and expansions projects



Exploration spending **declined** for the last 2 financial years.

SOURCE: GA; DISR; OCE

Gold TRADE MAP



Source: UN ITC; ABS
Note: Reflects trade in HS code 7108 (gold, inc. gold plated with platinum, unwrought or not further worked than semi-manufactured or powder form)

9.1 Summary

- Gold prices are forecast to rise by 22% (year-on-year) to average US\$2,365 an ounce in 2024. Prices have been boosted by global economic uncertainty and major central banks easing monetary policy and are forecast to remain elevated in 2025 before falling in 2026.
- Australian gold production increased by 0.5 tonnes in the September quarter 2024 to 74 tonnes. Yearly gold production is forecast to fall slightly in 2024–25 before resuming growth in 2025–26 as new projects and existing mine expansions come online.
- Earnings forecasts have been revised down moderately by \$0.3 billion to \$34 billion in 2024–25 due to a slightly stronger forecast for the AUD/USD. Earnings forecasts for 2025–26 remain at \$35 billion, in line with forecasts from the September 2024 REQ.

9.2 World consumption

High gold prices reduced gold demand in the September quarter 2024

Global gold demand decreased by 0.3% year-on-year to 1,177 tonnes in the September quarter 2024. Demand fell primarily because of reduced bar and coin investment and lower jewellery demand, and central banks and government financial institution buying (falling 8.9%, 6.7% and 49%, respectively).

Persistent high gold prices saw jewellery consumption moderate in the September quarter 2024. Jewellery consumption fell in China (down 17% year-on-year) and the US (down 2.2% year-on-year).

High gold prices reduced gold purchases by the official sector in the September quarter 2024. The official sector's gold purchases fell by 49% year-on-year to 186 tonnes, getting closer to normal levels seen prior to the March 2022 quarter, from unusually high purchasing in September and December quarters of 2023.

Offsetting the fall in jewellery demand and official sector buying was a rise in gold investment (up 132% year-on-year to 364 tonnes). Nearly 95 tonnes of gold flowed into gold-backed exchange traded funds (ETF) in the

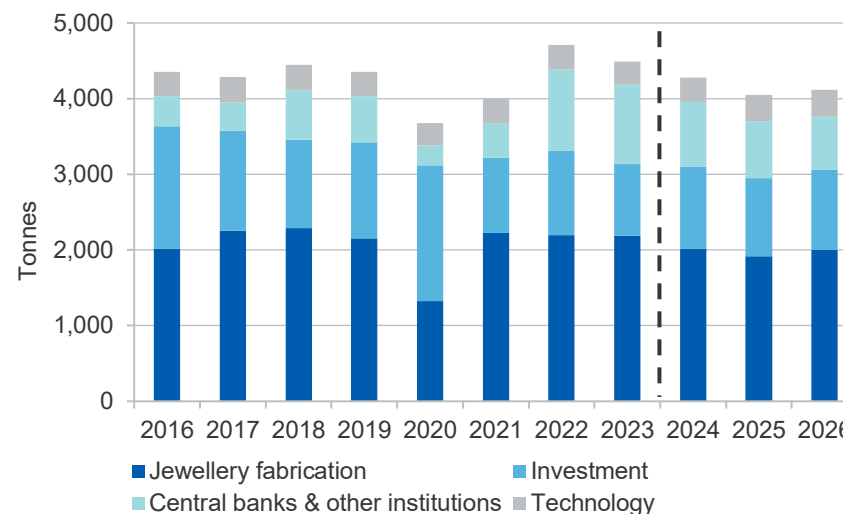
September quarter 2024. Geopolitical uncertainty and global monetary easing have prompted global investors to return to ETFs. Lower official interest rates reduce the return on interest-bearing deposits with financial institutions and thus lower the opportunity cost of holding gold.

Gold consumption in the technology sector continues to rise. In the September quarter 2024, gold demand for technology rose by 7.3% to 83 tonnes. Increased demand for gold in electronics results from the rising use of light emitting diodes and memory chips, coupled with the increasing use of AI-enabled consumer products.

Demand is forecast to fall in 2025 before growth resumes in 2026

Lower investment in gold bars and coins, falling jewellery consumption and reduced official sector gold purchases, are expected to reduce global gold demand by 2.8% in 2024. A further 7.3% fall in demand is forecast in 2025 (Figure 9.1) before a minor rise in 2026. Official sector buying is forecast to fall by 33% between 2023 to 2026 — from 1,049 tonnes to 700 tonnes.

Figure 9.1: World gold demand by sector



Notes: Investment includes ETFs, bars and coins. Technology includes gold used in the electronic, dentistry and other industrial sectors.

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

While central banks collectively are expected to continue to purchase gold, official sector buying is expected to slow after 2025 as some central banks reach near-term targets for gold reserves following two years of record buying.

The USD gold price is forecast to decline slightly in 2026. As a result, gold demand is expected to grow by 1.7% in 2026, mainly due to higher jewellery demand and retail investment (Figure 9.1). Rising incomes in developing countries are also expected to contribute to gains in both jewellery and investment demand.

9.3 World production

Higher mine output and recycling boosted gold supply in Q3 quarter 2024

Higher mine production and increased rates of gold recycling raised global gold supply to 1,313 tonnes in the September quarter 2024, a rise of over 5.8% year-on-year. Increased mine production was mainly driven by higher output in Indonesia, Canada and China due to new mines coming online and expansion in existing operations.

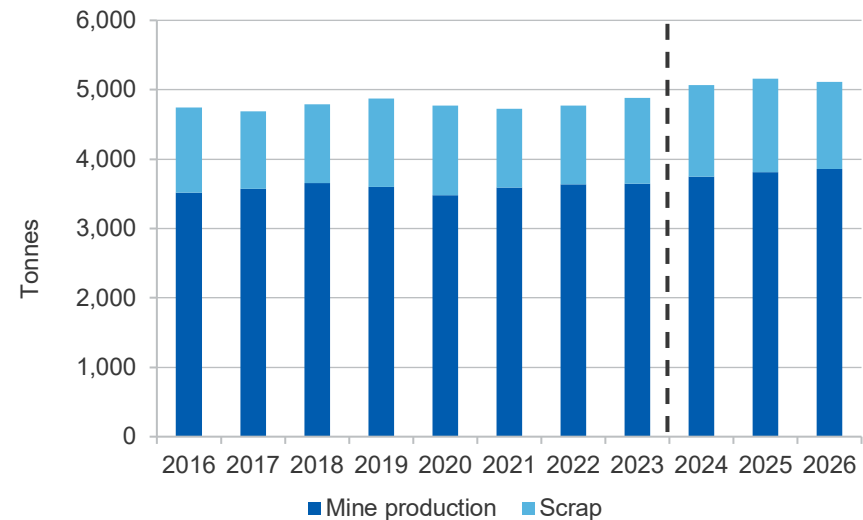
High gold prices increased rates of recycling, which rose by 11% year-on-year to 323 tonnes.

Higher mine output and recycling will lift gold supply in the outlook period

Higher gold mine production and recycling rates are expected to increase global gold supply to 5,055 tonnes in 2024 and 5,161 tonnes in 2025 (Figure 9.3). Increased mine production out to 2025 is mostly driven expanded or new operations in Canada, Ghana and Papua New Guinea—with sustained mine production elsewhere.

From 2026, the forecast flattening in gold prices is expected to weaken recycling activity, driving a fall in total gold supply (Figure 9.2). This fall is expected to be partly offset by a rise in global gold mine production. Net global gold supply is expected to fall by 1.0% to 5,109 tonnes in 2026.

Figure 9.2: World gold supply



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

9.4 Prices

Geopolitical uncertainty and monetary easing push up gold prices in 2024

The London Bullion Market Association (LBMA) gold price is estimated to have averaged about US\$2,346 an ounce in 2024 — 21% higher than 2023 (Figure 9.3). Gold prices set new records during 2024, peaking at US\$2,788 an ounce on 30 October.

Higher prices are the result of a range of factors including: global monetary easing, continued central bank purchases (including the new BRICS+ group), and surging demand for ‘safe-haven’ assets amidst conflicts in the Middle East and Ukraine.

The demand for gold jewellery in Asia is expected to rise as the year turns, as the wedding season in China and India commences in November 2024 and finishes in February 2025.

The strength of the US economy and concerns about US inflation present the primary downside risk for the gold price in the near term. The US economy remains strong and should benefit from recent US official interest rate cuts. This economic strength has helped boost the US dollar against other currencies and raised expectations of a slower pace of interest rate cuts in the future. As a result, the gold price has not risen as fast as some expected, and may struggle to make gains in the near future.

Gold prices to remain elevated in 2025 before falling slightly in 2026

Safe-haven demand for gold has helped drive strong gold price gains in 2024. The traditional inverse relationship between with the US dollar has weakened, with both gold prices and US dollar values rising. This trend is expected to continue in 2025.

Central bank gold purchases are expected to continue at the decreased September quarter levels in 2025, as some countries seek to diversify their foreign reserves. The World Gold Council surveyed 70 central banks from 19 February 2024 to 30 April 2024. 29% of respondents stated an intention to increase their country’s gold reserves next year.

In 2026, the gold price is expected to fall by 8.7% to average nearly US\$2,300 an ounce (Figure 9.4). This fall reflects higher gold mine output, lower official sector buying and reduced concerns over inflation. The key upside risk to forecast prices remains geopolitical uncertainty.

9.5 Australia’s trade, production and exploration

High gold prices increased export earnings in the September quarter 2024

The value of Australia’s gold exports rose by 4.5% year-on-year to \$8.4 billion in the September quarter 2024. A drop in the volume of exports (from 67.3 tonnes to 50.9 tonnes) was more than offset by a rise in Australian dollar gold prices.

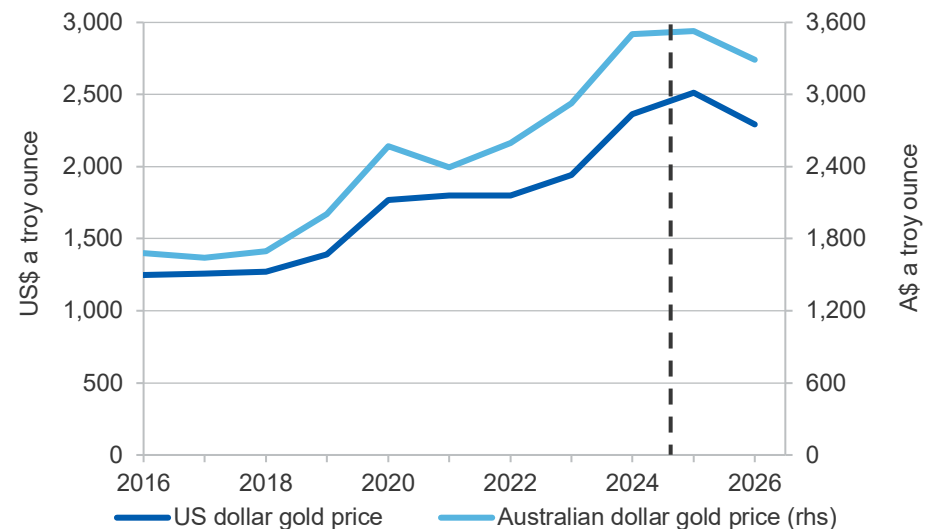
While Australian export volumes fell overall, a 20% year-on-year increase in shipments to the financial hubs (US, UK, Switzerland, Hong Kong and Singapore) was recorded. These hubs collectively purchased \$4.6 billion worth of Australian gold in the September quarter. Within the financial

Figure 9.3: US dollar gold price, daily



Source: Bloomberg (2024); LBMA (2024) Gold price PM.

Figure 9.4: US and Australian gold prices



Source: Department of Industry, Science and Resources (2024); LBMA (2024).

hubs, exports to the United Kingdom increased to \$1.8 billion, while exports to Hong Kong decreased from \$1.8 billion year-on-year to \$1 billion. Gold exports to China fell by \$2.0 billion to \$133 million year-on-year, while exports to India grew by 48% to \$2.3 billion.

High gold prices drove export earnings to a new record in 2024–25

High gold prices are expected to drive Australia’s gold export earnings \$34 billion. This represents an increase of 4.7% year-on-year from 2023–24 (Figure 9.5). Export earnings are then forecast to grow slightly to \$35 billion in 2025–26, as higher export volumes more than offset lower forecast prices.

Care and maintenance and lower ore grades reduced output in Q3 2024

Australia’s gold industry produced 70 tonnes of mined gold in the September quarter 2024, down 3.0% year-on-year. Production was lower in some cases due to lower grades and scheduled maintenance.

Newmont’s Telfer gold mine in WA did not produce gold in the September quarter 2024 as the mine remains in care and maintenance.

Production at Newmont’s Boddington operation in WA decreased by 24% to 4.3 tonnes as lower ore grades reduced output.

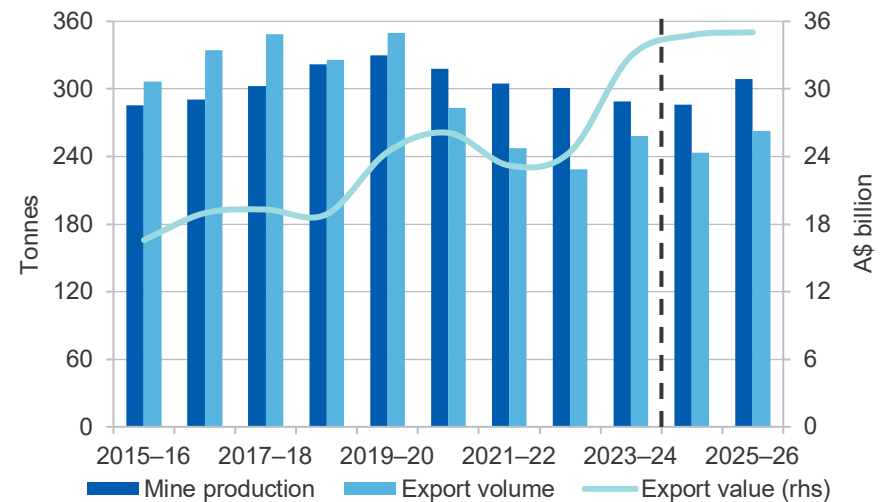
New projects and mine expansions will drive higher Australian gold production by 2025

Australian gold production is forecast to fall by 0.8% to 286 tonnes in 2024–25, due to start-up delays in some mines. However, production is forecast to grow by 7.9% to 309 tonnes in 2025–26, driven by new projects and expansions at existing mines.

Production should continue to ramp up at recently commenced projects such as Pantoro’s Norseman project, Calidus’ Warrawoona gold project and Bellevue Gold’s namesake gold project.

Genesis Minerals’ Ulysses project is under construction, with production expected to commence later in 2024. Westgold’s 1.4 tonne a year Great

Figure 9.5: Australian gold exports and mine production



Sources: ABS (2024); Department of Industry, Science and Resources (2024)

Fingall project continues to be developed and is expected to achieve first production in the first half of 2025. Newmont’s Telfer gold mine in WA is expected to resume production in December 2024, producing an average 0.9 tonne of gold a month for the next 15 months.

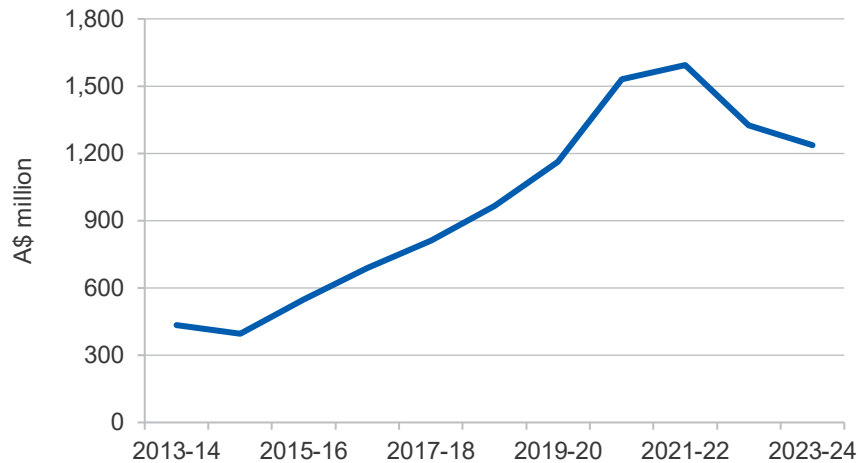
Northern Star Resources’ Super Pit gold operation is scheduled to begin a long-term expansion in 2024, with expected output rising to about 20 tonnes by 2025–26. In 2023, Northern Star committed to a \$1.5 billion mill expansion at KCGM in order to double processing capacity by 2029. The expansion should 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 around 530 tonnes of reserves, and annual production is expected to be around 35 tonnes per year.

Gold exploration expenditure falls despite high gold prices

Australia's gold exploration expenditure decreased by 9.7% year-on-year in the September quarter 2024 to \$301 million. Gold's share of Australian mineral exploration remained at 29% in the September quarter 2024, same as a year earlier. This decline in exploration occurred despite high Australian gold prices, which have historically motivated high exploration expenditure. Western Australia remained the centre of gold exploration activity in Australia, accounting for 78% of total gold exploration expenditure.

Figure 9.6: Australian gold exploration expenditure



Source: ABS (2024)

Revisions to the outlook

Compared with the September 2024 REQ, the average gold price in 2024 has been revised up slightly (1.5%), to around US\$2,365 an ounce. The price has been revised up 3.0% in 2025 to around US\$2,500 an ounce and down 2.0% to around US\$2,300 an ounce in 2026.

Reflecting changes to the Australian dollar gold price driven by the exchange rate, Australia's forecast gold export earnings have been revised down by \$300 million in 2024–25 but are unchanged in 2025–26.

Table 9.1: Gold outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Total demand	tonnes	4,490	4,366	4,046	4,112	-2.8	-7.3	1.7
Fabrication consumption ^b	tonnes	2,496	2,431	2,258	2,359	-2.6	-7.1	4.4
Mine production	tonnes	3,644	3,743	3,814	3,855	2.7	1.9	1.1
Price ^c								
– nominal	US\$/oz	1,943	2,365	2,513	2,294	21.7	6.2	-8.7
– real ^d	US\$/oz	2,003	2,365	2,466	2,207	18.1	4.3	-10.5
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Mine production	tonnes	301	289	286	309	-4.0	-0.8	7.9
Exports								
– volume	tonnes	228	258	234	263	13.1	-9.2	12.0
– nominal value	A\$m	24,406	32,929	34,474	35,030	34.9	4.7	1.6
– real value ^e	A\$m	26,099	33,793	34,474	33,896	29.5	2.0	-1.7
Price								
– nominal	A\$/oz	2,721	3,171	3,625	3,382	16.5	14.3	-6.7
– real ^e	A\$/oz	2,910	3,254	3,625	3,273	11.8	11.4	-9.7

Notes: **b** includes jewellery consumption and industrial applications; **c** London Bullion Market Association PM price; **d** In 2024 US dollars; **e** In 2024–25 Australian dollars; **f** Forecast; **s** Estimate.

Source: ABS (2024); Department of Industry, Science and Resources (2024); London Bullion Market Association (2024) gold price PM; S&P Market Intelligence (2024); World Gold Council (2024).

Aluminium, Alumina and Bauxite



Australia's aluminium sector



10%
of global primary aluminium exports are **Australian**

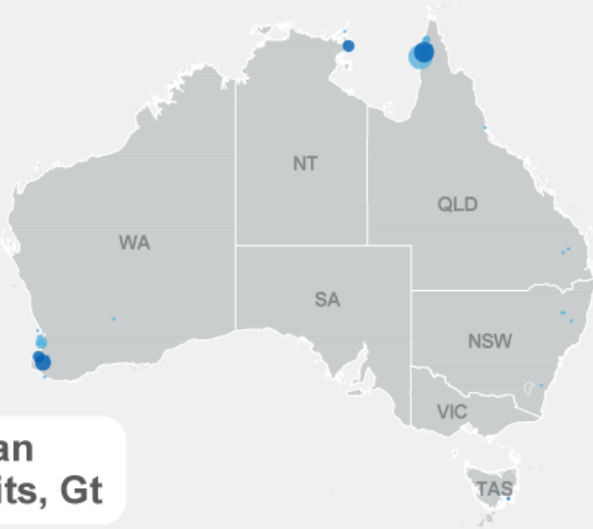


\$17 billion
primary aluminium, alumina and bauxite **exported**, 2023–24



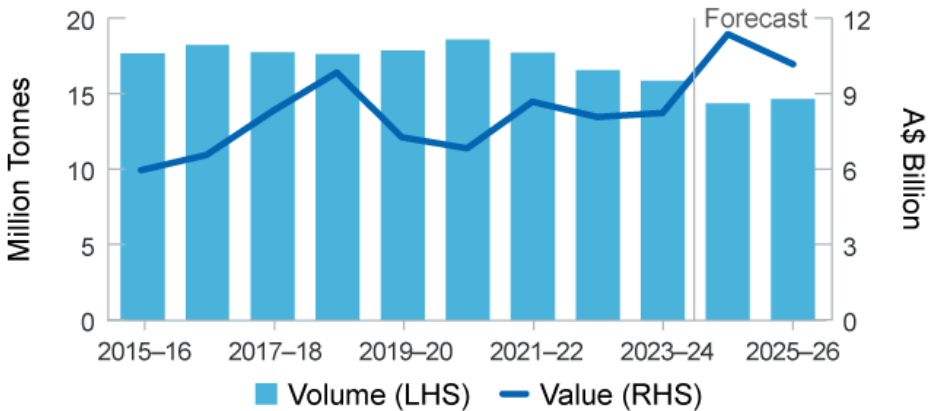
Over 98%
of Australian bauxite is **exported to China**

- Deposit
- Operating mine
- <0.01
- 0.02–0.03
- 0.04–0.09
- 0.10–0.20
- 0.21–0.44
- >0.45



Major Australian bauxite deposits, Gt

Australian alumina exports



Outlook



Australian aluminium sector earnings set to reach a **record of \$20 billion** in 2024-25



Australia's bauxite output set to **increase over the outlook period**



Australian bauxite alone is a **\$2 billion** export industry

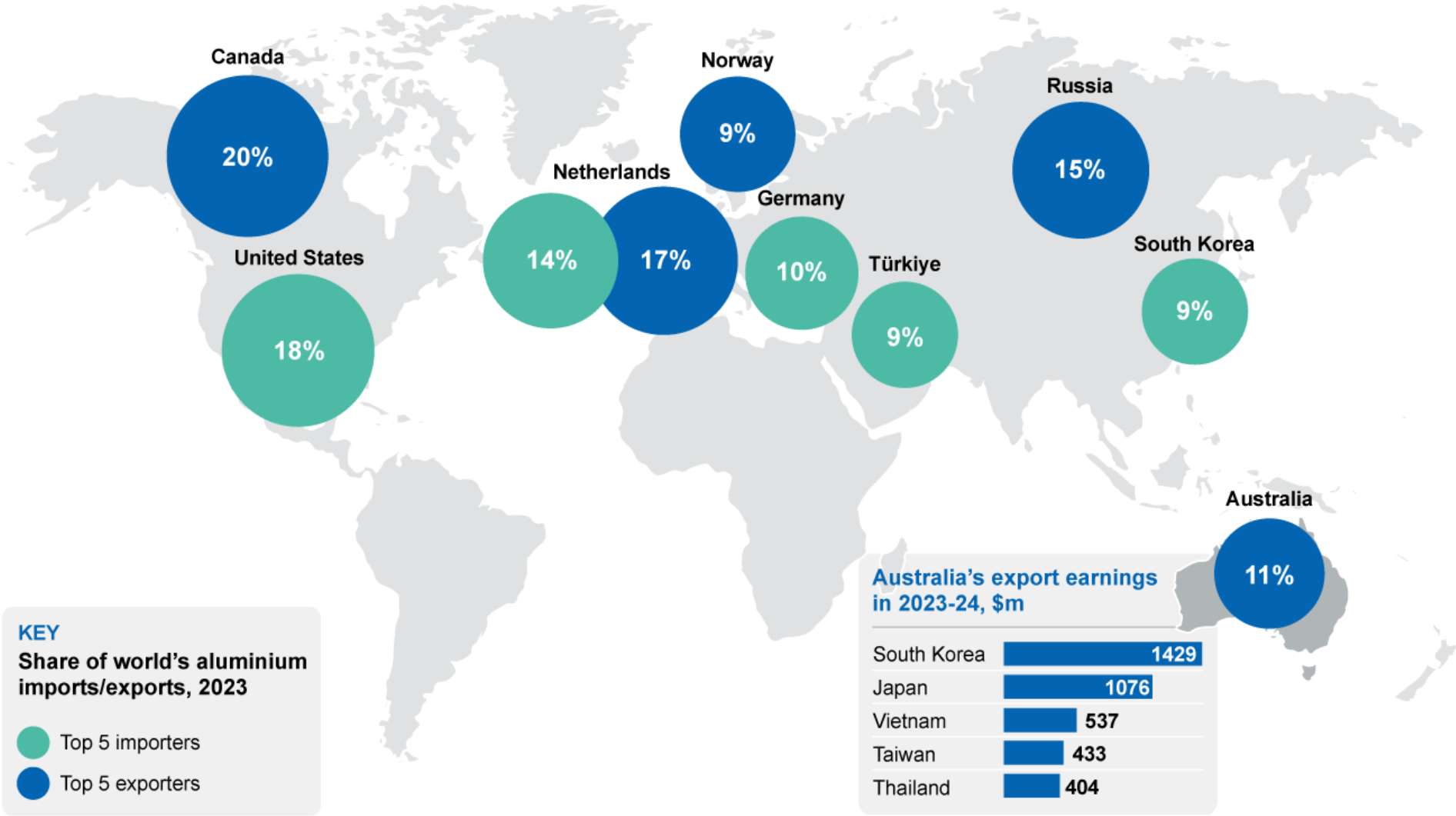


Alumina prices expected to remain **elevated** on the back of reduced supply

*High Purity Alumina

SOURCE: DISR; OCE

Aluminium TRADE MAP



SOURCE: WBMS; ABS

10.1 Summary

- The free on board (FOB) Australian alumina price reached record highs in the December quarter 2024, on the back of reduced supply of alumina and bauxite from Australia and Guinea. The alumina price is expected to remain elevated over the outlook period and is likely to push the London Metal Exchange (LME) primary aluminium spot price above US\$2,500 a tonne in 2025 and 2026.
- Over the outlook period, Australian primary aluminium output is expected to be stable at 1.6 million tonnes (Mt) a year. Australian alumina output may fall to under 18 Mt a year, due to the production curtailment at Kwinana refinery. Australian bauxite output should rise to over 100 Mt a year, driven by mine expansion in Queensland.
- 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 \$20 billion in 2024–25.

10.2 World demand

Vehicles boosted global aluminium demand in Q3 2024

Strong demand for electric vehicles (EV) helped boost global primary aluminium demand in the September quarter 2024. Global primary aluminium demand rose by 5.6% year-on-year to nearly 19 Mt, with nearly 2.8 million EVs sold in the world in July and August 2024 — up 15% year-on-year. Over this period, China sold nearly 2 million EVs, accounting for 72% of global EV sales.

A drive by automotive makers in Asia, Europe and the US to cut input costs — by using recycled aluminium rather than primary aluminium — boosted secondary aluminium demand by 3.6% in the September quarter 2024 to 6.4 Mt.

Higher global primary aluminium production boosted demand for alumina by 1.7% year-on-year to 35 Mt in the September quarter 2024. Demand in China and India rose by 3.3% and 2.6% year-on-year, respectively, as Chinese and Indian aluminium smelters required more alumina to accommodate increased primary aluminium production.

Lower alumina production in Australia reduced global bauxite demand by 0.5% year-on-year in the September quarter 2024 to 89 Mt.

China and Indonesia drive aluminium demand over the outlook period

Strong demand from the EV manufacturing and low emission technology sectors — where aluminium is used in the making of EV, solar panel components and wind turbines — is expected to boost global aluminium demand from 72 Mt in 2024 to 75 Mt in 2026 (Figure 10.1).

Recent rapid growth in wind and solar capacity in China and Indonesia is likely to continue and will increase the demand for aluminium. In Indonesia, solar panel manufacturing capacity has continued to rise rapidly with the help of foreign investment. Indonesia's solar making capacity is expected to grow from 8 gigawatts (GW) in 2023 to 30 GW in 2024.

On 25 July 2024, the Chinese Government announced it will double vehicle scrappage subsidies — first introduced in late April 2024 — to boost domestic vehicle demand. Chinese consumers receive either RMB20,000 to scrap an old and high emitting vehicle and replace it with an EV, or RMB15,000 to replace it with a fuel-efficient internal combustion engine car. The Chinese Government estimated that there will be about 1.1 million new EV sales under the scrappage program. This program will help to meet aluminium demand from the Chinese automotive industry domestically.

Rising primary aluminium prices and the use of low-carbon aluminium are expected to boost recycled aluminium demand over the outlook period. According to International Aluminium Institute, recycled aluminium is 95% less energy intensive than primary aluminium.

India is part way through an anticipated four-year (2024 to 2027) boom in wind and solar projects, driven by increased financial support from the government. The Indian Government is pushing for cleaner energy to support economic development and draw in investment.

As a result, world recycled aluminium demand is estimated to rise by 3.6% in 2024 to 26 Mt, then by 5% a year over the outlook period to 2026.

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 forecast to grow by 2.7% in 2024, 1.5% in 2025 and 1.7% in 2026.

An expected rise in Chinese, Indian and Indonesian alumina production is likely to increase global bauxite demand over the outlook period, reaching 371 Mt by 2026 (Figure 10.1).

10.3 World supply

Global AAB output grew to accommodate rising demand in Q3 2024

An increase in supply in China contributed to a 1.7% year-on-year rise in the global primary aluminium output in the September quarter 2024. Over this period, China produced nearly 11 Mt of primary aluminium (up 3.3% year-on-year), with producers reacting to escalated demand from the renewable power industry. This increased demand from the renewable energy sector offset the weakness in the demand for aluminium from the residential construction sector.

Driven by the increased demand for recycled aluminium, global recycled aluminium output rose by 1.7% year-on-year to nearly 8 Mt in the September quarter 2024. Italy and the US accounted for most of this increase, with recycled aluminium output increasing by 38% and 5.1% year-on-year, respectively.

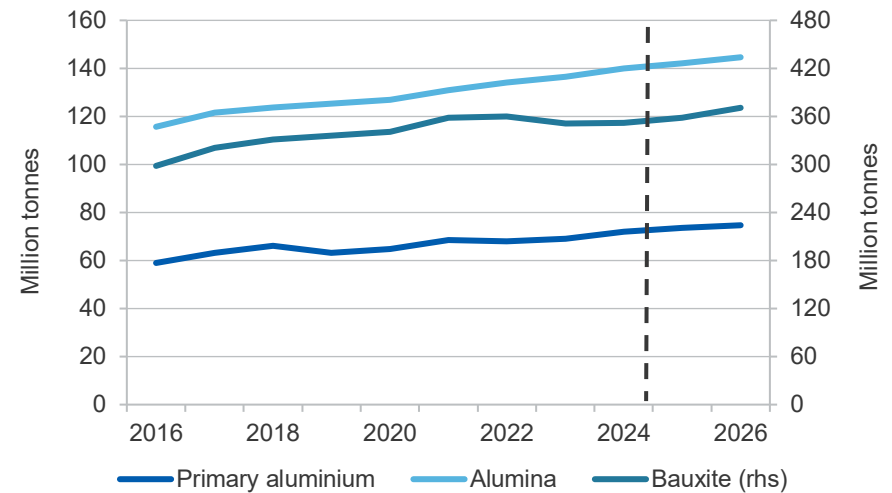
Lower alumina output in Australia — the world's second largest alumina producer — led to a 0.5% fall in global alumina output in the September quarter 2024, to 35 Mt. Over this period, alumina production in China and India increased by 3.9% and 3.0% year-on-year, respectively.

Higher bauxite output from Guinea and Australia boosted global bauxite output by 1.5% year-on-year in the September quarter 2024 to 100 Mt.

High prices to drive global AAB output over the outlook period

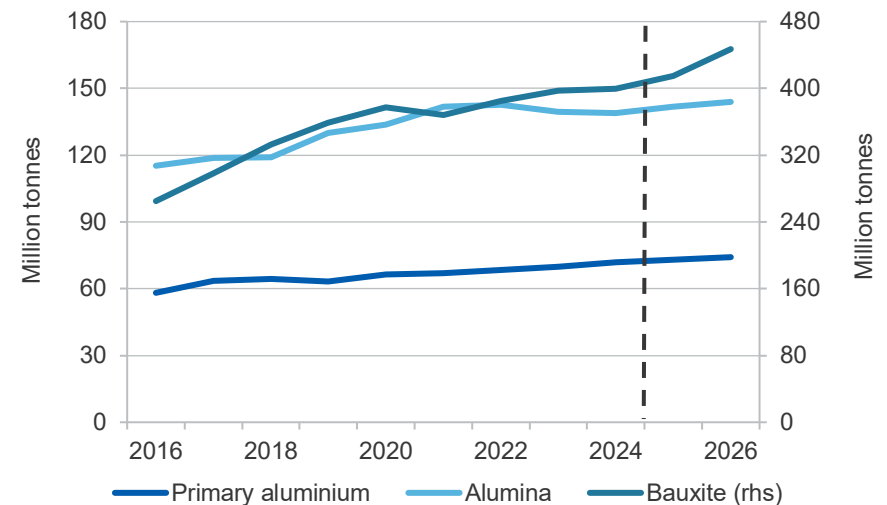
High primary aluminium prices are expected to encourage global primary aluminium supply growth over the outlook period. It is forecast that global

Figure 10.1: World primary aluminium, alumina and bauxite demand



Sources: Department of Industry, Science and Resources (2024); World Bureau of Metal Statistics (2024).

Figure 10.2: World primary aluminium/alumina/bauxite supply



Sources: Department of Industry, Science and Resources (2024); World Bureau of Metal Statistics (2024).

primary aluminium supply will increase from under 72 Mt in 2024 to 74 Mt in 2026 (Figure 10.2).

China and India will contribute most to this rise. In China, primary aluminium output is forecast to rise from 43 Mt in 2024 to nearly 44 Mt in 2026. Primary aluminium supply in India is forecast to increase from 4.3 Mt in 2024 to 4.7 Mt in 2026.

Driven by higher output from China, the US and Europe, global recycled aluminium output is forecast to reach 35 Mt in 2026.

Propelled by higher alumina prices and profit margins, production ramp-ups in China and Brazil are expected to drive up global alumina output over the outlook period, reaching 144 Mt by 2026 (Figure 10.2). In China, alumina output is forecast to rise from 82 Mt in 2024 to nearly 84 Mt in 2026. Alumina production in Brazil is forecast to increase from 10 Mt in 2024 to 11 Mt in 2026.

Higher output from Guinea and Australia — the world’s two largest bauxite producers — is expected to push global bauxite output up by 5.8% a year over the outlook period, to 447 Mt in 2026 (Figure 10.2).

Favourable policy and technology improvements to increase supply of recycled aluminium

China will permit the importation of recycled aluminium and copper that meet specified standards from 15 November 2024. This policy shift is a part of China’s effort to promote a circular economy and reduce its environmental footprint.

In October 2024, Constellium SE, a Paris-based aluminium recycling company, announced a new aluminium recycling technology *Laser-Induced Breakdown Spectroscopy* (LIBS) which enables the recovery of high-quality aluminium alloys from pre-consumer aluminium scrap. This technology marks a significant step in reducing carbon emissions in the automotive supply chain by increasing the industrial applications of recycled aluminium.

10.4 Prices

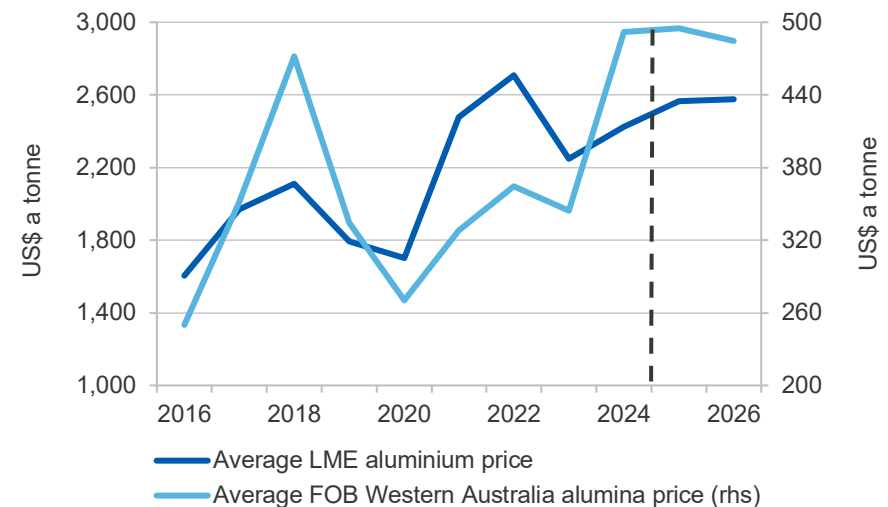
Supply issues drive alumina and aluminium prices up in 2024

The Guinean Government blocked bauxite exports from Emirates Global Aluminium in October 2024. This decision together with the production curtailment at Alcoa’s Kwinana alumina refinery in WA drove the FOB WA alumina price to record highs in the December quarter 2024. The price reached an all-time high of US\$810 a tonne on 4 December 2024.

The high alumina price and China’s economic policy measures have helped push the LME primary aluminium spot price to a five-month high of US\$2,656 a tonne on 7 October 2024. As a result, the LME aluminium price is expected to rise by 7.7% year-on-year in 2024 to average US\$2,424 a tonne (Figure 10.3). The FOB WA alumina price is forecast to increase by 43% year-on-year in 2024 to average US\$492 a tonne (Figure 10.3).

LME stock declines from 852,150 tonnes in August 2024 to 679,600 in

Figure 10.3: Primary aluminium and alumina prices



Sources: Bloomberg (2024); Department of Industry, Science and Resources (2024)

December 2024 reflect a rise in global primary aluminium demand. Shanghai Future Exchange aluminium stocks fell from 289,920 tonnes in August 2024 to 224,376 tonnes in December 2024 (Figure 10.4).

Aluminium and alumina prices remain elevated over the outlook period

Easing monetary policy and growing global demand for new, energy-efficient cars and technologies are expected to lift aluminium usage over the outlook period. After 2024, the LME aluminium price is forecast to remain elevated, averaging about US\$2,565 and US\$2,575 a tonne in 2025 and 2026, respectively (Figure 10.3). Rising demand and low supply will keep the FOB WA alumina price relatively high over the outlook period. The price is forecast to be US\$495 a tonne in 2025 and US\$485 a tonne in 2026 (Figure 10.3).

10.5 Australian exports and production

Higher prices and bauxite export volumes lifted Q3 2024 export earnings

Higher alumina and aluminium prices, and increased bauxite export volumes and values, boosted Australia's AAB export earnings by 22% year-on-year in the September quarter 2024 to \$4.9 billion.

A 47% year-on-year rise in the FOB WA alumina price in the September quarter 2024 increased Australian alumina export values by 19% year-on-year to \$2.5 billion in the September quarter 2024.

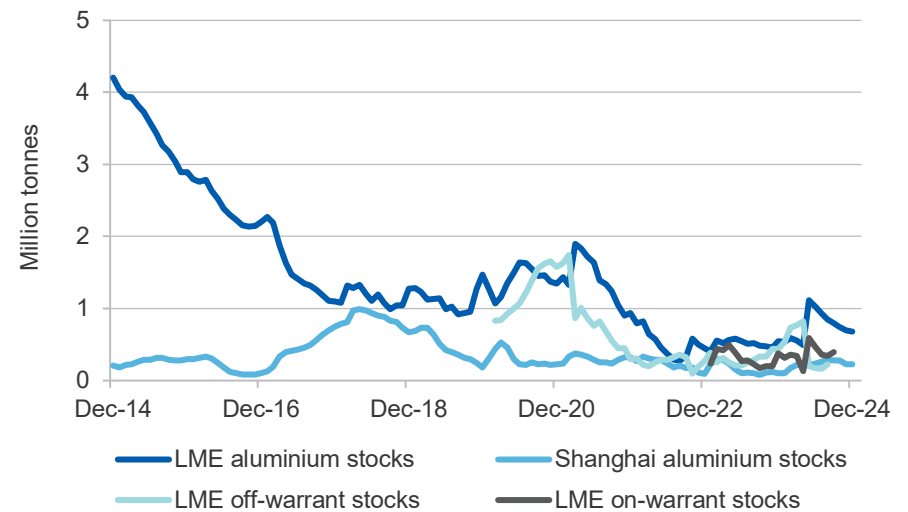
A ban on bauxite exports by Indonesia — which started on 10 June 2023 — boosted Australian bauxite export earnings by 56% year-on-year in the September quarter 2024 to \$0.7 billion, an all-time high.

An 11% year-on-year rise in the LME aluminium price in the September quarter 2024 increased Australian primary aluminium export values by 17% in the September quarter 2024 to nearly \$1.4 billion.

Higher prices and bauxite exports drive export earnings higher

Elevated alumina and aluminium prices, and high bauxite export volumes in 2025, are likely to boost Australia's AAB export earnings to \$20 billion in

Figure 10.4: Exchange aluminium stocks



Sources: Bloomberg (2024); LME (2024).

2024–25, up 22% year-on-year (Figure 10.5). Australia's bauxite export earnings are expected to reach \$2.2 billion a year in 2024–25.

Australia's AAB exports are forecast to fall by 7.9% in 2025–26 to \$19 billion, on the back of a forecast rise in the Australian dollar (Figure 10.5).

In November 2024, Metro Mining signed multi-cargo offtake agreements with several Chinese companies for bauxite shipments from its Bauxite Hills mine in Queensland in 2025 and 2026.

In November 2024, Rio Tinto lifted the force majeure on alumina exports from its Gladstone operations. Rio Tinto's force majeure on third party contracts for alumina exports from its alumina refineries in Queensland, due to a gas shortage, commenced in mid-May 2024.

Increased bauxite output to accommodate rising demand from China

A small rise (up 0.5% year-on-year) in Tomago's aluminium output drove a minor increase in Australia's primary aluminium output (up 0.6% year-on-year) in the September quarter 2024.

The production curtailment at the Kwinana alumina refinery in WA reduced Australia’s alumina output by 7.4% year-on-year in the September quarter 2024. In January 2024, Alcoa announced its decision to fully curtail its 2.2 Mt a year Kwinana refinery commenced the June quarter of 2024 amid rising costs, ageing plant and grade challenges.

A strong performance from Rio Tinto’s Weipa bauxite mine in Queensland boosted Australia’s bauxite output up by 2.5% year-on-year in the September quarter 2024 to 26 Mt. Chinese demand for Australian bauxite has been strong.

Australia’s bauxite output set to increase over the outlook period

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

The production curtailment at Alcoa’s Kwinana alumina refinery in WA is likely to reduce Australian alumina output to under 18 Mt a year over the outlook period.

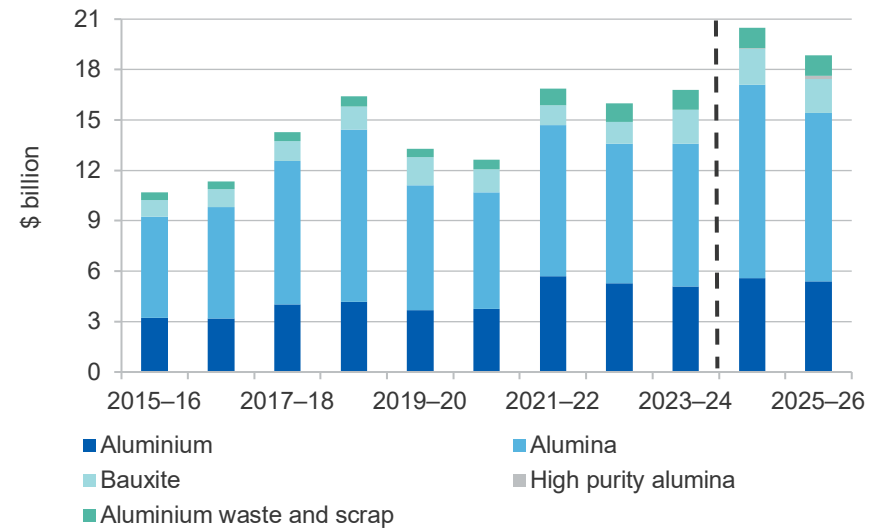
South32’s Worsley alumina refinery in WA is waiting on final approvals for their Boddington mine expansion, which is required to sustain the refinery’s alumina production.

The expansion of Metro Mining’s Bauxite Hills mine in Queensland and improved performance from other bauxite mines are forecast to increase Australian bauxite output by 1.6% a year over the outlook period, reaching 103 Mt in 2025–26.

In September 2024, Alpha HPA commenced the construction of its Stage Two of the High Purity Alumina (HPA) First project. Once completed, the expansion will boost the plant’s production to 10,430 tonnes of high purity alumina a year.

Impact Minerals and Playa One have continued work on their Lake Hope HPA project, targeting a final investment decision in 2025 or 2026.

Figure 10.5: Australian aluminium/alumina/bauxite exports



Source: ABS (2024); Department of Industry, Science and Resources (2024).

In September 2024, Alcoa’s Portland aluminium smelter in Victoria reached a new energy supply agreement with the AGL. Under this new agreement, AGL will supply Portland an additional 287 megawatts (MW) of electricity — on top of AGL’s existing 300 MW supply agreement — until 30 June 2025. This will help sustain output from the Portland smelter.

Revisions to the outlook

The forecast for Australia’s AAB export earnings in 2024–25 and 2025–26 has been revised up from the September 2024 REQ by \$1.5 billion and \$1.4 billion to \$20 billion and \$19 billion, respectively. The revision reflects an upward revision to the FOB alumina price forecast over the outlook period.

Table 10.1: Aluminium, alumina and bauxite outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Primary aluminium								
Production	kt	69,945	71,848	72,898	74,171	2.7	1.5	1.7
Consumption	kt	69,006	71,992	73,529	74,682	4.3	2.1	1.6
Prices aluminium^c								
- nominal	US\$/t	2,249	2,424	2,565	2,575	7.7	5.8	0.4
- real ^d	US\$/t	2,316	2,424	2,517	2,478	4.7	3.9	-1.6
Prices alumina spot								
- nominal	US\$/t	344	492	495	485	42.8	0.7	-2.1
- real ^d	US\$/t	355	492	486	466	38.7	-1.2	-4.0
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production								
Primary aluminium	kt	1,532	1,567	1,577	1,574	2.3	0.6	-0.2
Alumina	kt	18,971	18,255	16,395	16,280	-3.8	-10.2	-0.7
Bauxite	Mt	96.2	100.2	100.8	103.4	4.2	0.5	2.6
Consumption								
Primary aluminium	kt	151	186	137	127	22.9	-26.5	-7.2
Exports								
Primary aluminium	kt	1,440	1,432	1,489	1,495	-0.6	4.0	0.4
- nominal value	A\$m	5,281	5,092	5,592	5,377	-3.6	9.8	-3.8
- real value ^e	A\$m	5,648	5,225	5,592	5,203	-7.5	7.0	-7.0
Alumina	kt	16,566	15,877	14,344	14,652	-4.2	-9.7	2.2
- nominal value	A\$m	8,308	8,486	11,489	10,048	2.2	35.4	-12.5
- real value ^e	A\$m	8,884	8,709	11,489	9,722	-2.0	31.9	-15.4
Bauxite	kt	34,113	40,497	43,587	43,416	18.7	7.6	-0.4
- nominal value	A\$m	1,284	2,039	2,156	2,021	58.9	5.7	-6.3
- real value ^e	A\$m	1,373	2,093	2,156	1,955	52.5	3.0	-9.3
Total value								
- nominal value	A\$m	16,005	16,801	20,470	18,844	5.0	21.8	-7.9
- real value ^e	A\$m	17,116	17,242	20,470	18,234	0.7	18.7	-10.9

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 2024 calendar year US dollars; ^e In 2024–25 financial year Australian dollars; ^f Forecast; ^s Estimate.

Sources: ABS (2024); Bloomberg (2024); Department of Industry, Science and Resources (2024); LME (2024); World Bureau of Metals Statistics (2024).

Copper



Australia's copper sector



Ranked 2nd
for world for copper
reserves in 2023
(10% of reserves)

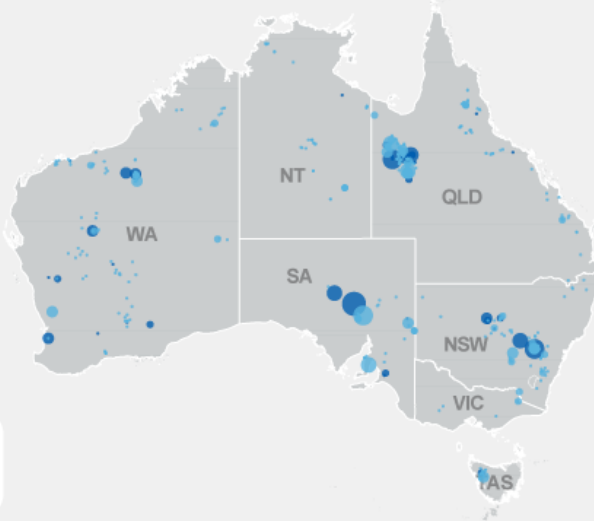


**5th largest
exporter and 9th
largest producer**
globally in 2023



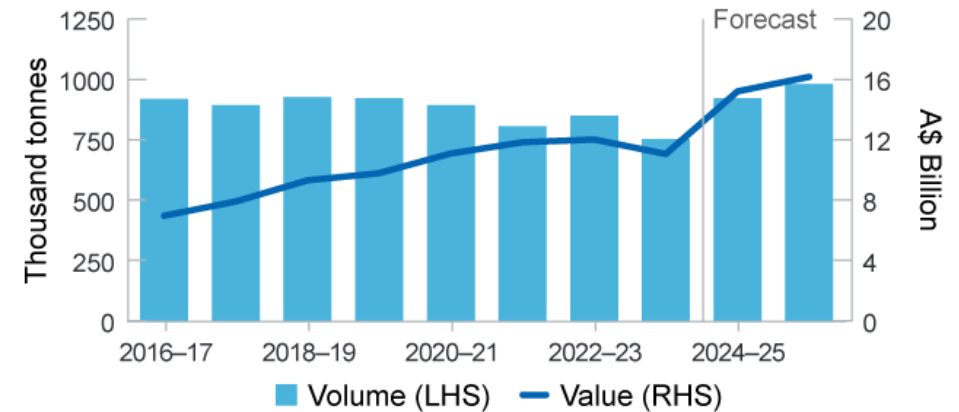
200+k tonnes
per year **production
capacity** at
Australia's largest
mine, Olympic Dam

- Deposit
- Operating mine
- <0.01
- 0.02
- 0.03–0.8
- 0.9–2.1
- 2.2–6.8
- >6.9



**Major copper
deposits, Mt**

Australian copper exports



Outlook



Prices declined due to
market uncertainty but
**rebound expected in
next 2 years**



Export earnings forecast
to grow to **\$16.2 billion**
in 2025-26



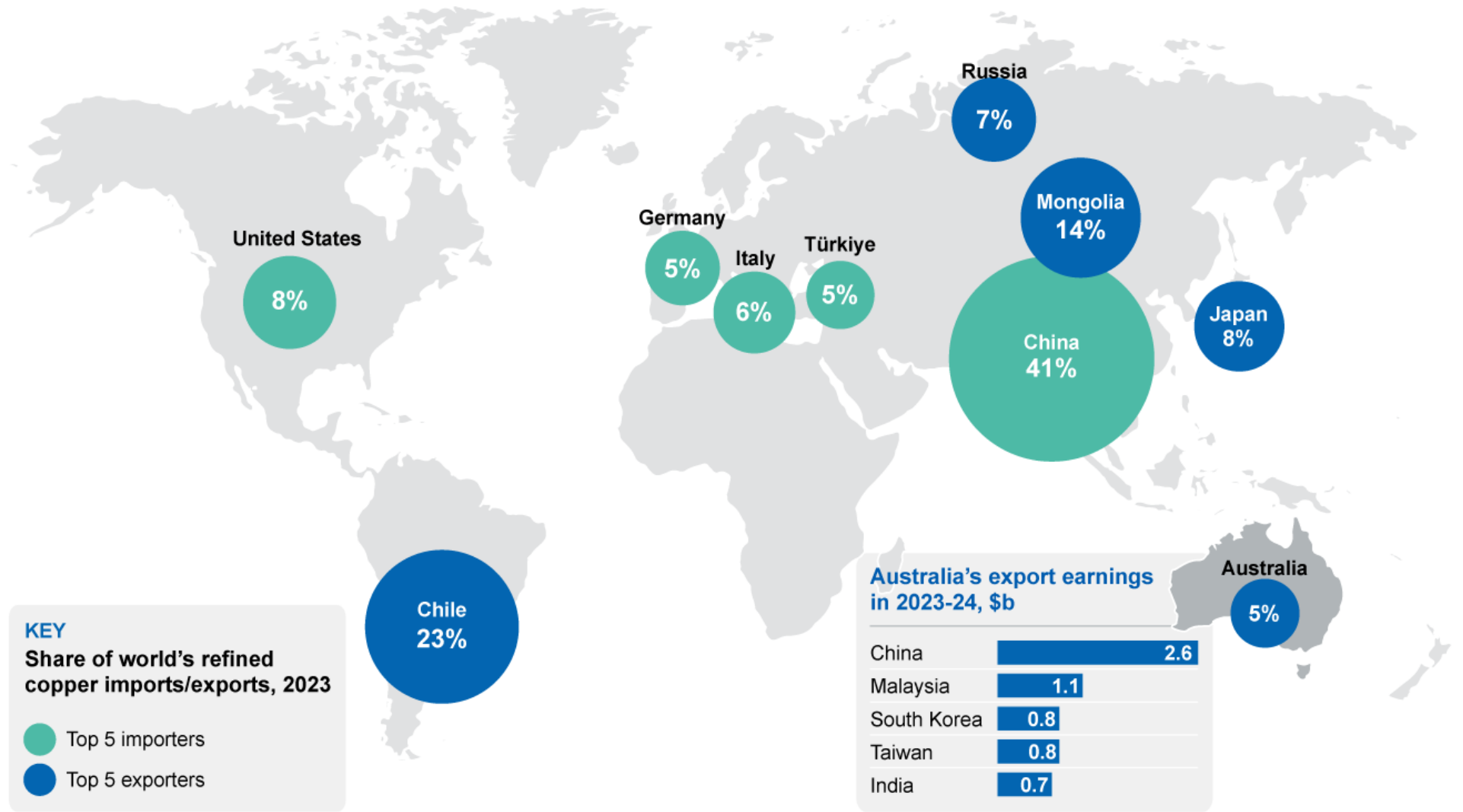
Exports volumes
expected to rise as
result of production
growth



Exploration expenditure
fell 2.6% in the
September 2024 quarter

SOURCE: GA; DISR; OCE

Copper TRADE MAP



Source: ABS; GA; WBMS
Note: Reflects metal content of ores and concentrates and refined metal, export earnings may not be complete due to partial confidentialisation of trade data

11.1 Summary

- Copper prices have declined by around 6% since the beginning of the December quarter, mainly due to market response to economic policy announcements from China and the impact of a rising US dollar. Prices are expected to average around US\$9,220 a tonne in 2024 and rise to US\$9,700 a tonne by 2026.
- Global copper demand is forecast to grow by around 3% in 2025 and 2026. Growth will primarily be driven by growth in low emission technology and data centre deployment.
- Australian copper export earnings are forecast to reach around \$15.3 billion in 2024–25 and \$16.2 billion in 2025–26.

11.2 World Copper Demand

EVs, data centres & renewable energy infrastructure driving demand

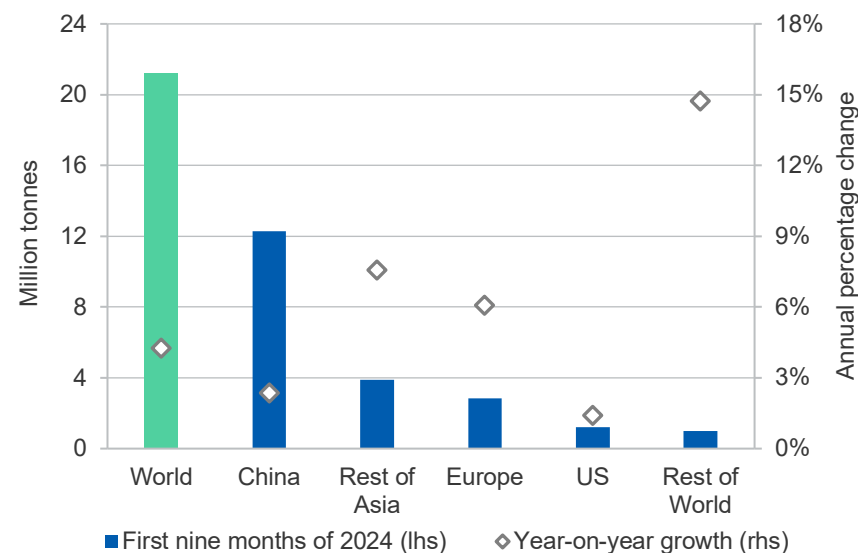
In the first nine months of 2024, global refined copper demand was 21.2 million tonnes (Mt), 4.3% higher than the same period in 2023. Demand growth was broad based across key copper consuming markets: China (up 2.4%), the US (up 1.4%), ex-China Asia (up 7.6%), and the EU (up 6.1%). Demand in the rest of the world surged by 15%, although it only accounted 0.9 Mt of global demand over the same period (Figure 11.1).

Global demand is estimated to grow by 1.8% in 2024 reaching 28.0 Mt, helped by rising consumption in EV manufacturing, AI-related data centres and renewable energy infrastructure. Global demand is forecast to grow by about 3.0% annually, reaching 28.9 Mt in 2025 and 29.8 Mt, in 2026.

Chinese copper demand, driven by manufacturing, the energy transition and construction remains resilient. A Chinese government program subsidising the replacement of old cars and household appliances has also boosted copper consumption.

China's EV market remains robust, with 1.1 million EVs and plug-in hybrids sold in the first nine months of 2024 — over 30% higher than sales in the same period last year. EVs are copper intensive, so transitioning from

Figure 11.1: Year-to-date refined copper demand, 2024



Sources: Department of Industry, Science and Resources (2024); World Bureau of Metal Statistics (2024)

internal combustion vehicles to EVs and plug-in hybrids is also contributing to Chinese copper demand growth.

China is projected to achieve its 2030 renewable energy target of 1,200 gigawatts of wind and solar capacity by the end of 2024. This construction is copper intensive, boosting copper demand. However, additional solar and wind expansion may slow once targets are met.

EU's copper demand expected to rebound as end-use sector improves

Copper demand in the EU rebounded by 6.1% in the first nine months of 2024 compared to the same period last year, mainly driven by Germany and Italy. This was despite ongoing weakness in the manufacturing and construction sectors. The Purchasing Manager Index (PMI) for both manufacturing and constructions in the EU, remains in contraction territory, declining further in November.

US energy investment will boost copper demand

US copper demand is expected to grow through 2026, driven by investment in data centres and clean energy manufacturing. According to the S&P's 2024 US Datacentres and Energy Report, the country raised its data centre capacity by 10 gigawatts (GW) from 2017 to 2022. It is expected to add 50 GW of new capacity between 2023 to 2028.

US clean energy installations are anticipated to grow by over 25% in 2024, led by solar with 38 GW in the southeast and 29 GW in Texas. Solar systems require about 5.5 tonnes of copper per megawatt of power, while wind turbines require up to 4.7 tonnes.

11.3 World production

Higher ore output from new & existing mines

Global mine production reached 16.8 Mt in the first nine months of 2024 — a 2.4% increase compared to the same period in 2023 (Figure 11.2). Mine output rose in Chile (up 2%), the Democratic Republic of Congo (DRC) (up 9.6%), and Indonesia (up 6.9%). This growth was due to improved output at major mines in Chile, recovery of constrained output in Indonesia and better power supply in the DRC. Peru's output fell by 0.6% in the first nine months of 2024, driven by community blockades and weather issues.

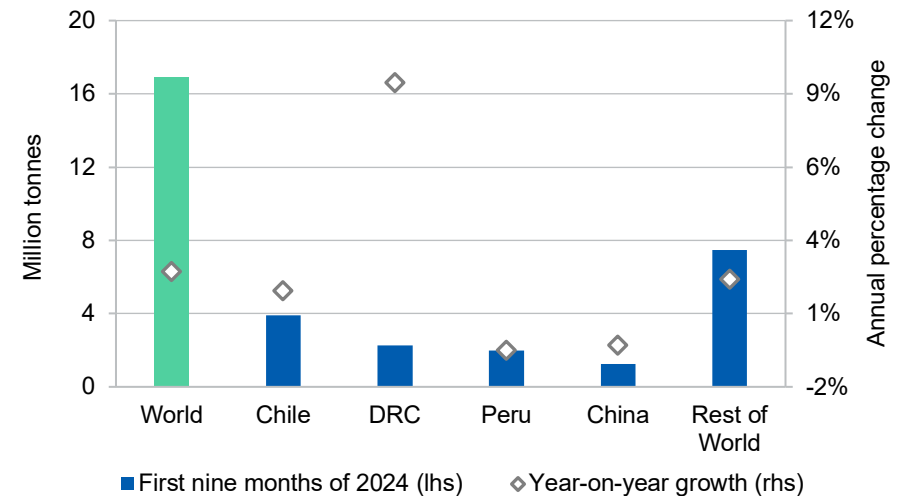
Greenfield and expansion projects forecast to increase production to 2026

Global mine output is expected to reach 23.2 Mt in 2025, an increase of around 3.0% compared to 2024, and 23.9 Mt in 2026. This growth will be driven by capacity expansions at operating mines and the opening of new mines in Chile, the DRC and China. However, declining ore grades, funding scarcity, disruptions from energy access, regulatory complexity, weather events and social unrest could hinder growth over the outlook period.

Refined copper output growth driven by capacity expansion to 2026

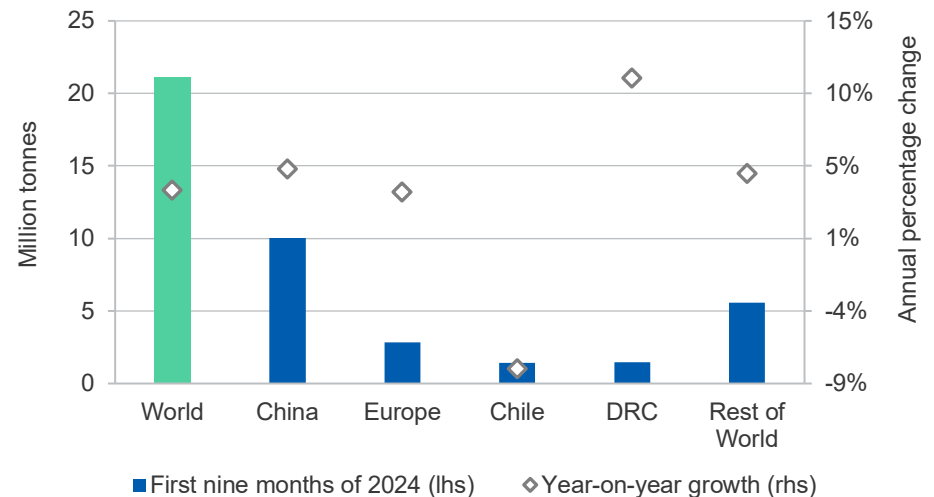
In the first nine months of 2024, global refined output rose by 3.8% year-on-year to 21.1 Mt (Figure 11.3), driven by strong growth in China (5.2%)

Figure 11.2: Year-to-date mined copper production, 2024



Sources: World Bureau of Metal Statistics (2024); Department of Industry, Science and Resources (2024)

Figure 11.3: Year-to-date refined copper production, 2024



Sources: World Bureau of Metal Statistics (2024); Department of Industry, Science and Resources (2024)

and the DRC (11.2%). This growth offset declines in other major producers. China, Indonesia, India, and the DRC are expected to lead growth over the outlook period, with refined copper output forecast to reach 28.8 Mt in 2025 and 29.7 Mt in 2026.

11.4 Prices

Copper prices remain soft due to uncertainties in the market

Copper prices have fallen by 6% since the start of December quarter, due to market reactions to China’s economic policy announcements and the appreciation of US dollar. The fall in price has also been supported by inventory increases, including at the London Metal Exchange (LME). The price decrease is not expected to persist over the outlook period.

The LME copper spot price is estimated to average US\$9,218 a tonne in 2024 and is forecast to gradually rise to US\$9,700 a tonne in 2026, as copper demand is boosted by investments in low emission technologies and new data centres, and rising EV sales (Figure 11.4).

11.5 Australia

Capacity expansion and start of new mines boost export earnings

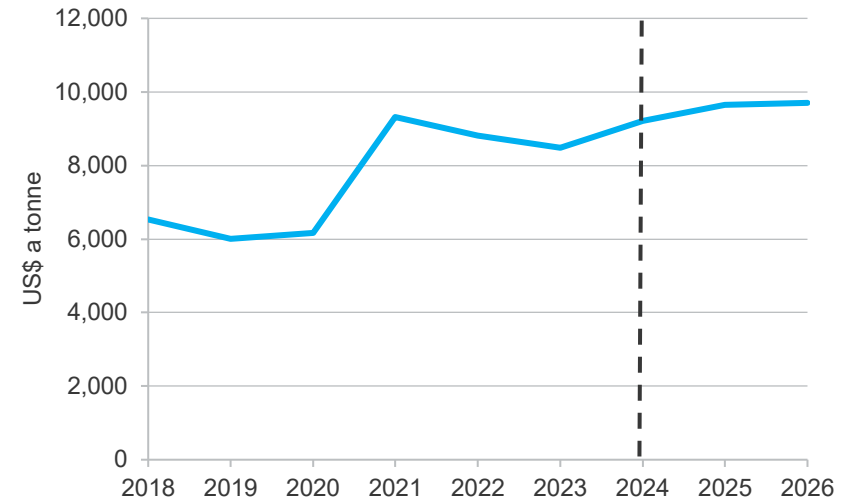
Export volumes are forecast to reach 924kt in 2024–25, an upward revision by 3.5% from September forecast. Higher export volumes are expected to see export earnings reach \$15.3 billion in 2024–25, up more than a third compared to 2023–24. Export earnings are projected to grow to \$16.2 billion in 2025–26, driven by higher export volumes (Figure 11.6).

Mine production to grow over the outlook period

Australian mine output in 2024–25 is forecast to grow to 800kt — an increase of 1% compared to 2023–24. In 2025–26, output should reach 821kt, an increase of 2.6% year-on-year. The projected growth comes from a range of new projects and expansions of existing projects.

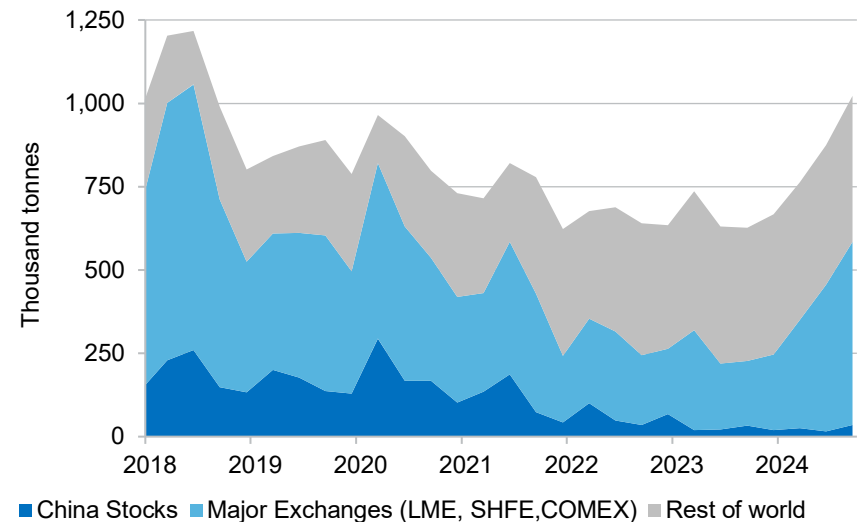
Production at BHP’s Copper South Australia operations increased by 2% to 73kt in the September quarter 2024. This was driven by strong performance at Carrapateena and the completion of major maintenance at

Figure 11.4: Copper price



Source: LME (2024) Official cash copper price (refined)

Figure 11.5: Global copper inventories



Sources: World Bureau of Metal Statistics (2024); Bloomberg (2024)

Olympic Dam. While Prominent Hill faced minor production issues in the quarter, these have now been resolved. BHP aims to produce 310–340 Kt of copper in FY25 from its South Australian operations.

Several projects will begin operations during the outlook period in 2025. Develop Global expected to start operation at Woodlawn in NSW and Anax Metals expect to start operations at Whim Creek in WA. In 2026, BHP will finish the Block Cave 1 expansion at Carrapateena in SA. Collectively, these projects will add around 70kt to annual output capacity.

However, Glencore will close the Mount Isa copper mines and concentrator in H2 2025. The company’s copper smelter in Mount Isa and its refinery in Townsville are expected to operate until 2030, subject to approval of additional capital investment.

Copper exploration has been healthy through 2024

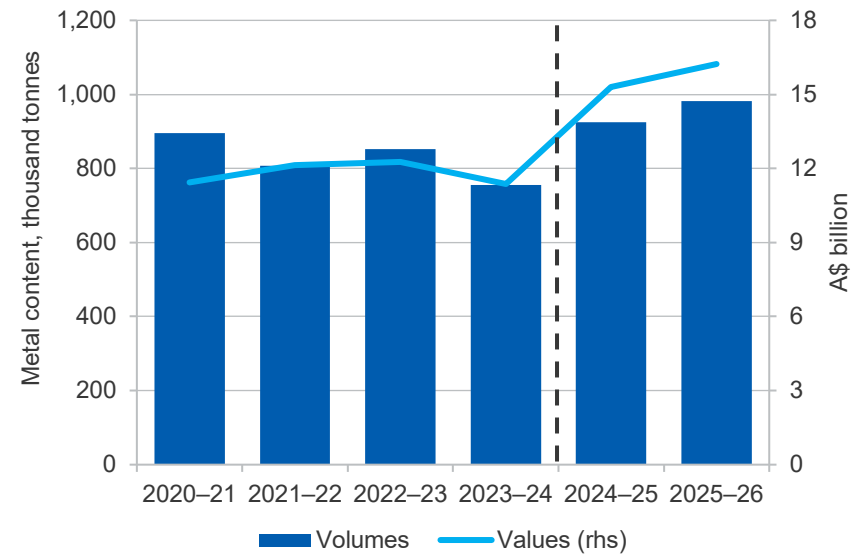
Copper exploration expenditure fell by 2.6% in the September quarter compared to June. Quarterly exploration expenditure has levelled out in recent years after rising sharply in 2021 (Figure 11.7).

In February 2024, BHP identified a high-grade copper deposit during its exploration at Oak Dam, South Australia. Currently, BHP’s application for an underground decline is under assessment, and aims to enable faster and cheaper drilling at Oak Dam. In August 2024, BHP announced an inferred resource estimate of 1.34 billion tonnes with a 0.66% copper grade, including a high-grade mineralisation zone containing 220 Mt with 1.96% copper grade.

Revisions to the outlook

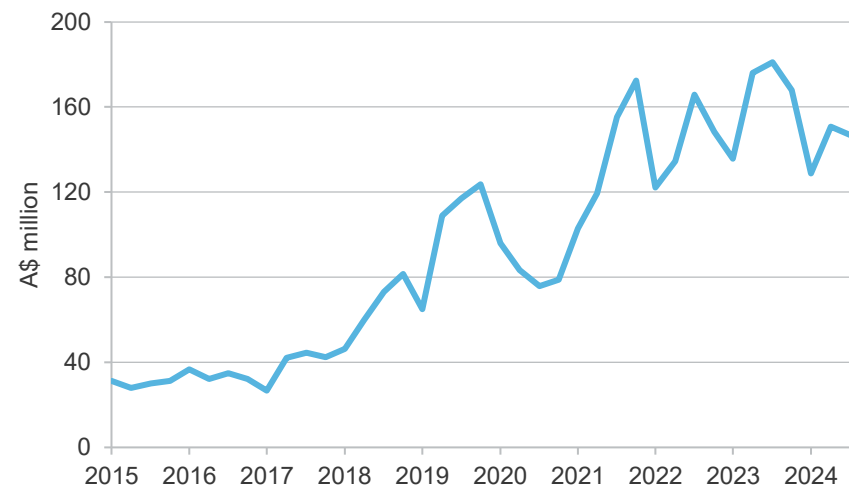
Since the September 2024 *Resources and Energy Quarterly*, export earnings in 2024–25 revised slightly down by 92 million due to lower price forecast. However, earnings in 2025-26 have been revised up by \$0.6 billion, primarily driven by higher expected export volumes.

Figure 11.6: Australia’s copper export volumes and values



Sources: ABS (2024); Department of Industry, Science and Resources (2024)

Figure 11.7: Australian copper exploration



Source: ABS (2024)

Table 11.1: Copper outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Production								
– mine	kt	22,407	22,594	23,181	23,946	0.8	2.6	3.3
– refined	kt	27,463	28,245	28,840	29,705	2.8	2.1	3.0
Consumption	kt	27,548	28,041	28,983	29,800	1.8	3.4	2.8
Closing stocks	kt	666	1023	880	785	53.5	-13.9	-10.8
– weeks of consumption		1.3	1.9	1.6	1.4	50.8	-16.7	-13.2
Prices LME								
– nominal	US\$/t	8,483	9,218	9,646	9,702	8.7	4.6	0.6
	USc/lb	385	418	438	440	8.7	4.6	0.6
– real ^b	US\$/t	8,734	9,218	9,467	9,336	5.5	2.7	-1.4
	USc/lb	396	418	429	423	5.5	2.7	-1.4
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Mine output	kt	804	795	800	821	-1.1	0.7	2.6
Refined output	kt	454	451	425	426	-0.6	-5.8	0.2
Exports								
– ores and concs ^c	kt	1,511	1,254	1,764	1,977	-17.0	40.7	12.1
– refined	kt	415	396	423	426	-4.5	6.7	0.6
– total metallic content	kt	852	755	924	982	-11.4	22.4	6.3
Export value								
– nominal	A\$m	12,262	11,370	15,313	16,231	-7.3	34.7	6.0
– real ^d	A\$m	13,113	11,668	15,313	15,706	-11.0	31.2	2.6

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; **s** estimate; **f** Forecast.

Sources: ABS (2024); Department of Industry, Science and Resources (2024); LME (2024); World Bureau of Metal Statistics (2024)

Nickel



Australia's nickel sector



18%
of global total
resources,
second largest
global reserve

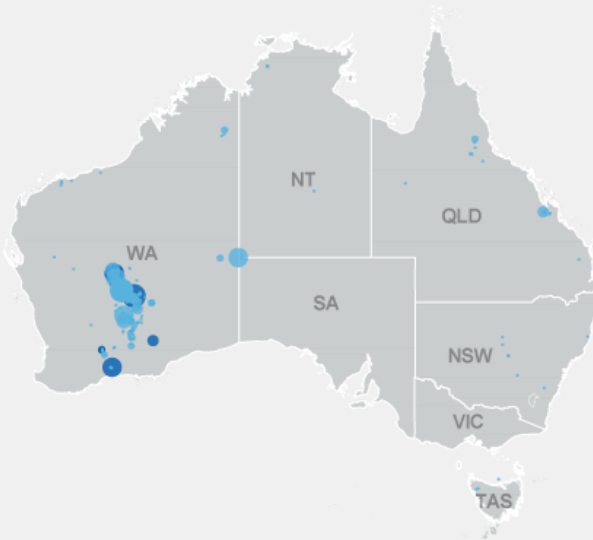


5th largest
nickel **miner**
globally, 2023



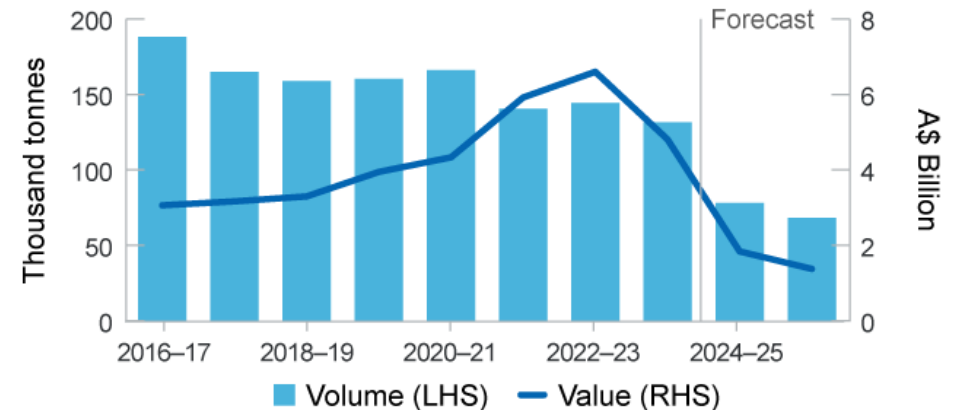
7th largest
nickel **refiner**
globally, 2023

- Deposit
- Operating mine
- <0.05
- 0.06–0.21
- 0.22–0.58
- 0.59–0.83
- 0.84–1.69
- >1.70



Major nickel deposits, Mt

Australian nickel exports



Outlook



Nickel prices have fallen driven by global oversupply and weaker demand



Export earnings to halve to **\$1.4 billion** in 2024-25, following production closures



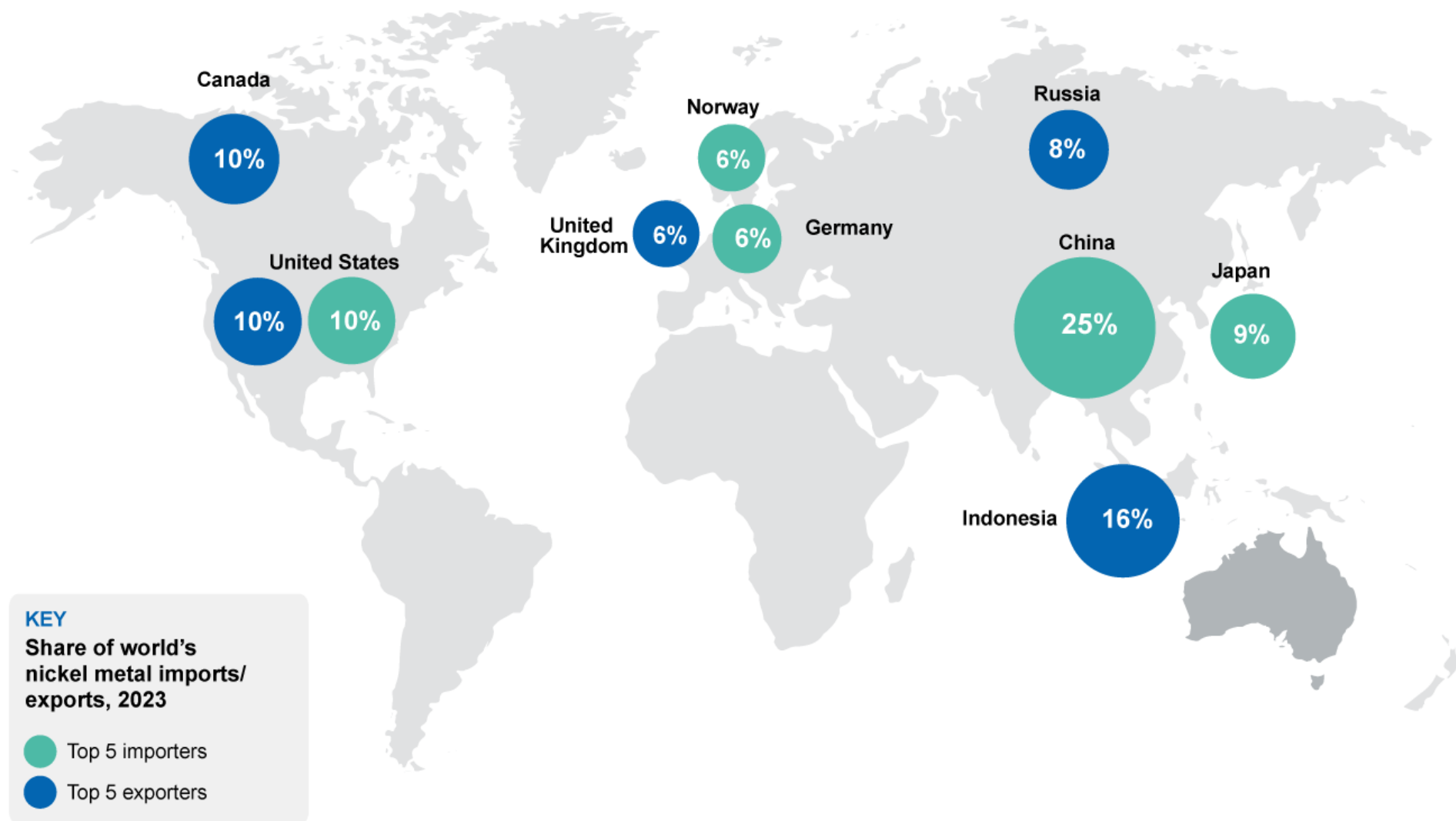
Oversupply in the global nickel market an **ongoing risk** in the next few years



15% of global nickel demand in 2023 for EV batteries and other low emissions tech

SOURCE: INSG; IEA; USGS; ABS; DISR, GA

Nickel TRADE MAP



SOURCE: INSG; IEA; USGS; ABS; DISR, GA.

12.1 Summary

- Nickel prices were volatile in the second half of 2024, falling below US\$16,000 a tonne in mid-November. The price fall was driven by continued global oversupply of nickel, combined with weakening demand. These conditions are expected to keep prices below US\$18,000 a tonne over the outlook period.
- Global nickel demand fell (year-on-year) in the September quarter 2024, driven by a decrease in Chinese nickel consumption. Growing nickel consumption in Indonesia — a consequence of the country's growing stainless steel and EV sectors — helped to offset the fall in China.
- Major closures announced in H1 2024 are expected to see Australian mined and refined production fall by 44% and 45% respectively in 2024. Reduced output and weaker prices are expected to see Australian nickel export earnings fall by over half to \$1.4 billion in 2024–25, and decline further to \$1.0 billion in 2025–26.

12.2 World consumption

Global nickel demand has slowed from the growth seen in H1 2024

Global nickel demand fell 2.3% year-on-year in the September quarter 2024, driven by weak demand from China. The fall in Chinese demand (6.3% lower year-on-year) was particularly notable, given the September quarter is traditionally China's strongest for nickel consumption.

Weaker demand was seen across a number of key end-use sectors in China, with stainless steel production moderating in recent months from the strong growth seen in the first half of the year. A weakening near-term outlook for nickel-based battery demand also contributed to falling demand over the period (Figure 12.1).

As the second largest consumer of nickel globally, Indonesia saw an increase in nickel demand year-on-year of 13% in the September quarter 2024. The contrast in nickel usage between Indonesia and China is indicative of Indonesia's continued emergence as the world's second largest producer of stainless steel, and the increasing competition it is

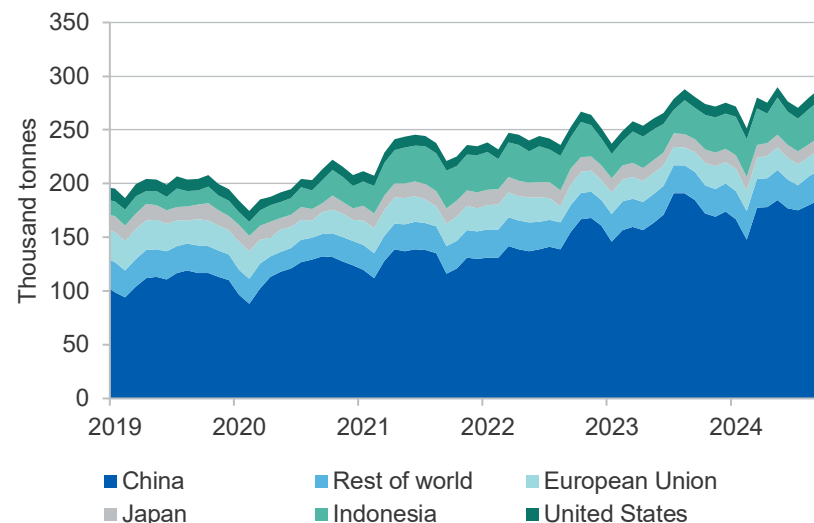
engaging in with Chinese stainless-steel producers.

Nickel demand in other major markets remains muted in 2024. While increasing sales growth for EVs is positive for global demand, weaker macroeconomic conditions continue to temper demand for stainless steel and alloy applications.

Global nickel consumption is expected to increase 9.0% in 2024 to reach 3.48 Mt. Growth was driven by global stainless-steel production in the first half of 2024 and improved EV sales in the second half of 2024. This helped to offset weakening demand in other nickel alloys and steel.

Over the outlook period, global nickel demand is forecast to grow 1.5% in 2025 (3.48Mt), and 5.8% in 2026 (3.73Mt). This follows a gradual recovery of global economies over the outlook period, prompting improved demand for stainless steel (particularly in China), and improved for EVs (across all key markets).

Figure 12.1: World nickel demand, monthly



Sources: Department of Industry, Science and Resources (2024); International Nickel Study Group (2024).

Nickel demand impacted by lower stainless-steel output in China, and continued weakness in Europe

China's production of stainless-steel was flat year-to-year in the September quarter 2024. This was driven by negative steel margins, and a continued fall in Chinese export volumes.

In contrast, countries such as Indonesia, India and South Korea seeing increasing year-on-year demand. Amongst other major producers, US and EU stainless steel production is expected to remain weak for the remainder of 2024.

On balance, global stainless-steel production is expected to increase 4.5% in 2024. Stainless steel remains the largest end use of nickel, representing approximately 63% of total global consumption in 2024. However, this share is expected to decrease over the outlook period, with the share of global demand from battery active materials forecast to grow from 17% in 2024, to around 20% in 2026.

Poor market sentiment for nickel-based batteries temper strong EV sales

The September quarter 2024 saw improving demand for EVs globally, with sales increasing by 22% year-over-year. This increase was predominately driven by growth in Chinese EV demand, with the price of EVs in China becoming cheaper than many comparable internal combustion engine vehicles. However, growth in EV sales remained weaker in key markets such as the US and EU. This likely reflects factors such as high interest rates, comparably higher vehicle prices, as well as supply chain factors (see *Lithium* chapter).

Regarding other battery developments, the EV and battery market continues to see increased penetration rates of nickel-free lithium iron phosphate (LFP) batteries, which has continued to rise over 2024. The IEA expects LFP penetration to potentially rise to 50% by 2030. While a key advantage of nickel-based batteries (over LFP) has been its higher energy density, this technical gap is closing. BYD's recently updated Blade battery has significantly increased energy density, and is approaching densities

typical of nickel-based batteries. Overall, this presents a continuing headwind for nickel-based batteries, and in in turn for EV nickel demand.

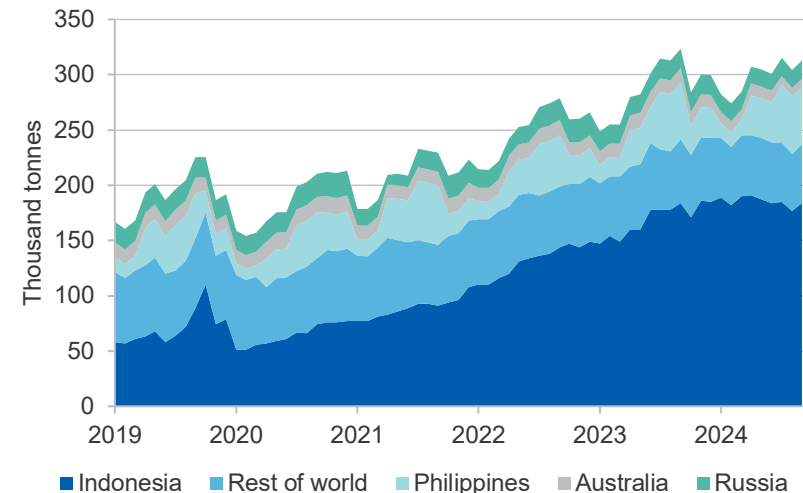
12.3 World production

Production suspensions and supply disruptions slow global mining output

World mined nickel production declined by 6.3% year-on-year in the September quarter 2024. This fall was driven by a combination of factors, including operational closures, project disruptions, and flat growth in production from Indonesia (Figure 12.2).

The September quarter saw the implementation of cuts to Australian mined and refined nickel production announced earlier in the year, in response to the challenge of prolonged low global prices. This included the temporary suspension of production from Nickel West in October 2024, alongside other major closures.

Figure 12.2: World mined nickel production, monthly



Sources: Department of Industry, Science and Resources (2024); International Nickel Study Group (2024).

In New Caledonia, supply disruptions to nickel operations continued over the September quarter, due to ongoing political instability. This situation has had further impacts since the June quarter, with Eramet-owned Société Le Nickel (SLN) reporting that maintaining their operations had become untenable, and that several nickel mining operations have been put on hold.

In Madagascar, the nickel and cobalt miner Ambatovy was forced to shut down a pipeline supplying ore from its mine in the country’s east, due to damage caused by severe and mud slurry.

In the June quarter, continued year-to-year production expansion by Indonesia led to a modest growth in global nickel supply, despite global production challenges. However, Indonesian mined nickel production was flat year-on-year in the September quarter 2024. In this context, the impact of supply disruptions became more pronounced in Q3 2024.

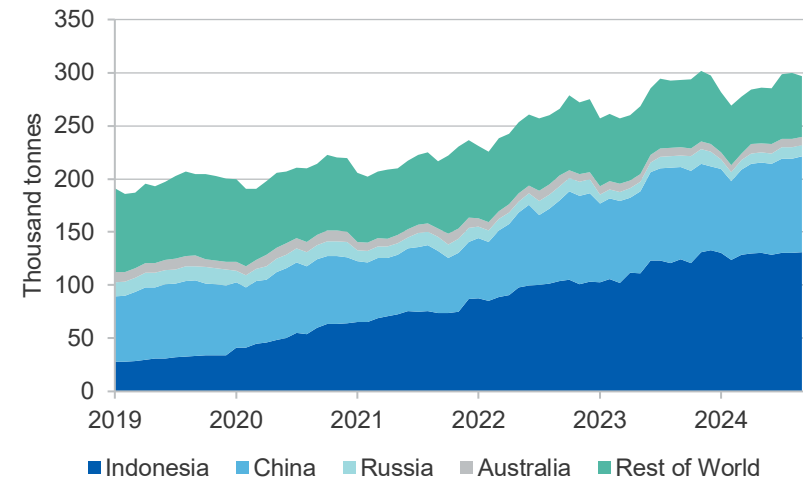
World mine output is forecast to rise by 5.7% annually over the outlook period. Despite the short-term impacts of production cuts and supply disruptions, nickel production from Indonesia will likely see strong expansion over the outlook period. In particular, the ramp of up existing industrial parks such as Weda Bay, Morowali, and prospective projects such as the IGP Pomalaa project, are expected to add new supply over the forecast period.

Indonesia continues to drive refined nickel growth as it pivots to EVs

Global production of intermediate products — which can be refined into nickel metal or directly into the battery supply chain — showed strong growth in the September quarter 2024, rising around 8% year-on-year (Figure 12.3). Globally, 74% of intermediate production in 2024 came from Indonesia (Figure 12.4)

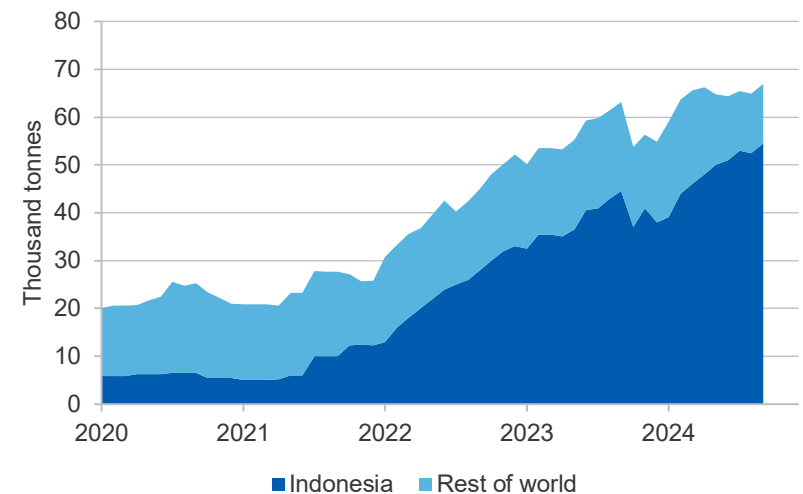
The rapid growth of Indonesian refining capacity in recent years reflects ongoing government policies to grow the nation’s downstream processing of minerals. The country also aims to establish a domestic EV sector and expects its first EV battery cell factory to start production in 2024.

Figure 12.3: World refined nickel production, monthly



Sources: Department of Industry, Science and Resources (2024); International Nickel Study (2024).

Figure 12.4: World intermediate nickel production, monthly



Sources: Department of Industry, Science and Resources (2024); International Nickel Study Group (2024).

World refined nickel production is forecast to grow 4.7% annually over the outlook period. This increase will be driven primarily led by new capacity coming online in China.

Indonesia nickel supply creating rising LME warehouses inventories

This year has seen continued growth in LME nickel inventories. The September quarter saw LME nickel stocks rise above 100kt for the first time in over 2.5 years (Figure 12.5), driven by increased materials arriving from China and Indonesia. More recently, the LME experienced 15kt in total arrivals in the month of October, the largest monthly deposit since December 2023. Overall, LME nickel stocks have more than doubled since the start of 2024, with China's share of LME nickel tonnage increasing for three consecutive months.

Geographical concentration of nickel to continue over the outlook period

The ongoing geographical concentration of global nickel output remains a key trend over the outlook period. Indonesia is on pace to represent around 44% of global market share by the end of the outlook period. In terms of refined nickel production specifically, Indonesia and China are expected to account for 75% of global refined nickel supply by 2026. Conversely, output ex Indonesia and China now represents just 20% of global output. Geographical concentration will continue to be a major feature of the global nickel market in coming years, raising the risk of supply chain vulnerabilities.

Recent reporting suggests Indonesian producers are now seeking partnerships with new investors, to reduce their share of Chinese ownership, and improve eligibility of US Inflation Reduction Act credits. Additional investment in Indonesian nickel may come at the expense of investment in countries outside of China and Indonesia.

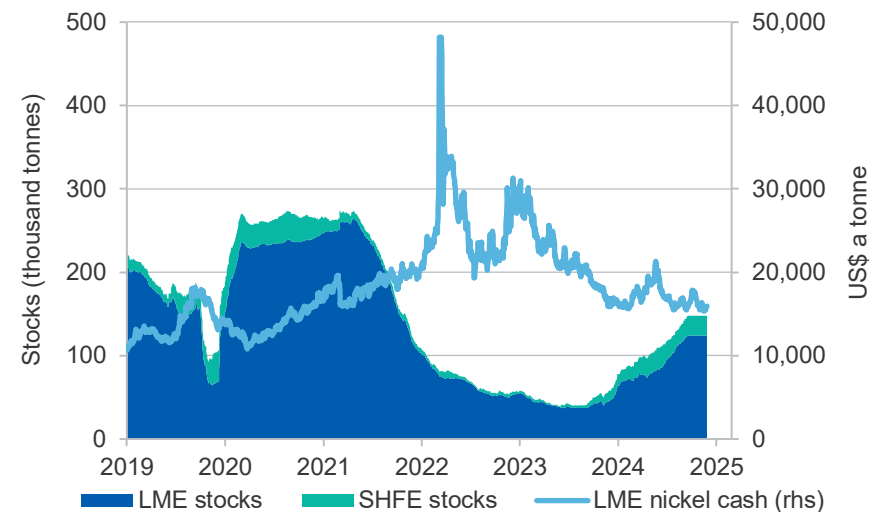
Emissions and environmental impact continue to be cited as barriers to new investment in Indonesia, though recent renewable energy developments could cut Indonesia's nickel emissions.

12.4 Prices

The benchmark nickel price has experienced strong volatility through the second half of 2024, rising from a low of US\$15,503 a tonne in late July, to a high of \$18,244 a tonne in early October. The surge in prices reflected weaker Indonesian supply, as well as positive demand-side factors such as cuts to US interest rates and a US\$3.2 billion investment package for US battery projects. Policy measures announced by the Chinese government in October also improved market sentiment on the outlook for Chinese demand.

However, nickel prices have again fallen in recent months, dropping to \$15,725 a tonne by the end of October (Figure 12.5). Rising inventories continue to reflect an oversupply in the global nickel market, compounded by recent weak demand from stainless steel and battery markets. The LME benchmark nickel price is expected to average around \$17,000 in 2024.

Figure 12.5: Nickel spot price and stock at exchanges



Sources: Department of Industry, Science and Resources (2024); LME (2024).

Oversupply remains dominant factor in 2025, but upside risks emerging

While the global oversupply in nickel is expected to persist over the outlook period, upside risks continue heading into 2025. The potential for restricted ore permits in Indonesia could limit mine and subsequent downstream output and reduce the global nickel surplus expected in 2025.

Moreover, large European producers, most notably the Eramet SLN and Doniambo smelter in France, may close should the price of nickel remain depressed. In addition, severe weather may impact production, as heavy rains did in Indonesia over 2024. Given the 2025 surplus is already expected to be smaller than 2024's (105kt as compared to 270kt in 2024), these supply risks could put upward pressure on prices in 2025.

Whilst these factors are challenges for global supply in 2025, an increased volume of supply is forecast to re-enter the market in 2026 (227kt as compared to 105kt in 2025). As such, the LME nickel price is forecast to average around US\$17,400 a tonne in 2025, and around US\$17,750 a tonne in 2026 — a small downward adjustment from the prior REQ. Nonetheless, nickel prices are expected to remain volatile due to short term mismatches in supply and demand.

12.5 Australia

Nickel facility closures in 2024 are expected to impact Australia's mined and refined nickel production over the outlook period.

Australian nickel producers continue to face challenging conditions through 2024, with lower prices prompting several major Australian producers to curtail output in 2024. Notable closures have included First Quantum Minerals Ravensthorpe and Wyloo Kambalda mines which ceased production on 31 May 2024. BHP's Nickel West facility also suspended operations on Oct 1 2024.

Overall, the closure of these Australian operations has resulted in a fall in Australian mined nickel output of approximately 59kt, and a fall in refined output of approximately 41kt. This represents a 44% fall in mined output, and a 45% fall of refined output in 2024. Going forward, it is expected that

reduced export volumes will persist through to the end of the outlook period (Figure 12.6). While there are a number of prospective new nickel projects in the development pipeline, these new mines are expected to reach production beyond the outlook period.

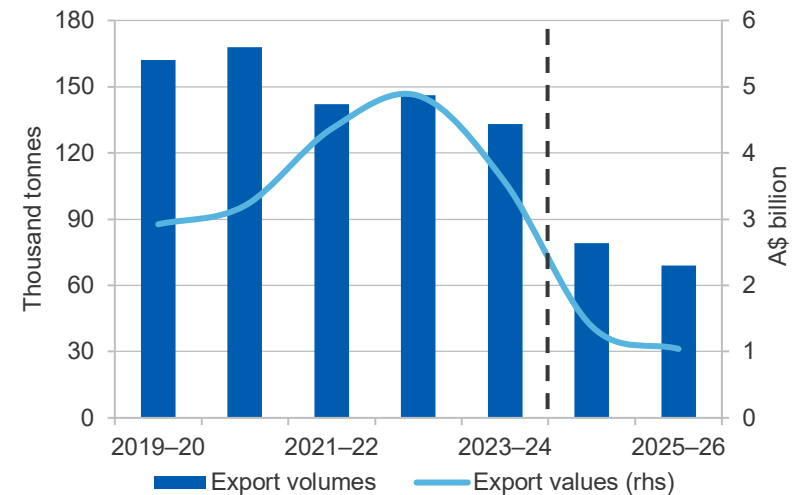
Export earnings to be impacted by falling nickel prices and production cuts

Australia's total export earnings in 2024–25 are forecast to drop to \$1.4 billion — a fall of 60% compared to the previous year — as weaker prices and lower export volumes impact the sector. Export earnings in 2025–26 are expected to fall further to \$1.0 billion, as the full impacts of BHP's Nickel West closure are felt.

Exploration expenditure in 2024 lower on weaker nickel price

Nickel and cobalt exploration expenditure in Australia for the June quarter 2024 was \$58 million — around 31% lower than the comparable period in 2023. Exploration expenditure in the last 12 months to the June quarter 2024 was also 19% lower year-on-year, highlighting the ongoing impact of low nickel prices for Australian producers.

12.6: Nickel export volumes and values



Sources: ABS (2024); Department of Industry, Science and Resources (2024).

Table 12.1: Nickel outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Production								
– mine	kt	3,677	3,898	4,143	4,374	6.0	6.3	5.7
– refined	kt	3,361	3,486	3,664	3,820	3.7	5.1	4.3
Consumption	kt	3,192	3,478	3,530	3,734	9.0	1.5	5.8
Global balance		169	7	134	86			
Closing stocks	kt	856	996	1 257	1 463	16	26	16
– weeks of consumption		14	15	19	20	7	24	10
Prices LME								
– nominal	US\$/t	21,470	17,066	17,400	17,750	-21	2.0	2.0
	USc/lb	974	774	789	805	-21	2.0	2.0
– real ^b	US\$/t	22,104	17,066	17,078	17,079	-23	0.0	0.0
	USc/lb	1,003	774	775	775	-23	0.0	0.0
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production								
– mine ^c	kt	153	134	75	68	-13	-44	-9.3
– refined	kt	97	91	50	39	-6.2	-45	-20
– intermediate		38	42	5	0	11	-87	-100
Export volume ^{dg}	kt	146	133	79	69	-9.0	-41	-13
Export value ^g								
– nominal value	A\$m	4863	3555	1,381	1,041	-27	-61	-25
– real value ^e	A\$m	5201	3649	1,380	1,007	-32	-62	-27

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; **s** Estimate.
Source: ABS (2024); Department of Industry, Science and Resources (2024); LME (2024); World Bureau of Metal Statistics (2024).

Zinc



Australia's Zinc sector



About 1/3
ores & concentrate
production **refined**
domestically

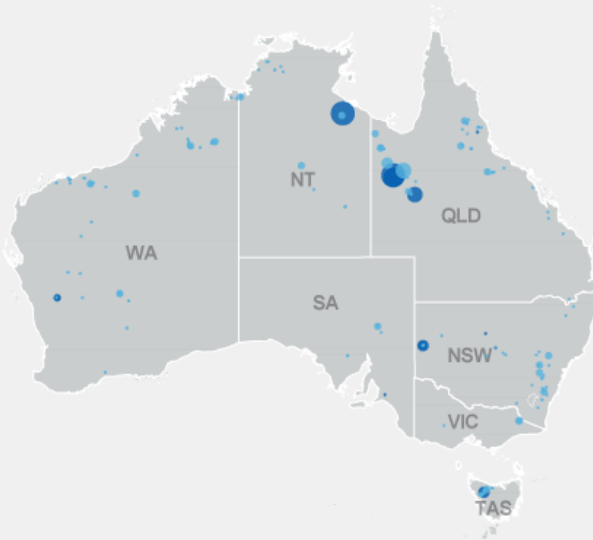


31%
of the world's known
zinc resources



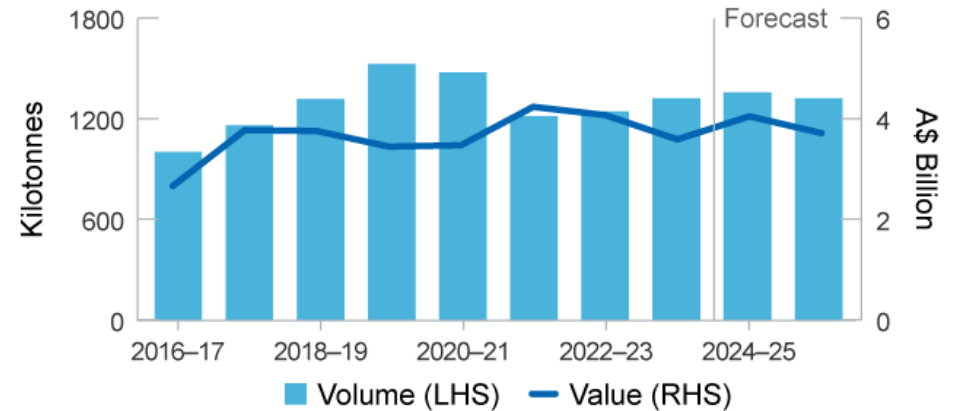
3rd largest
zinc producer
globally in 2023

- Deposit
- Operating mine
- <0.01
- 0.02–0.03
- 0.04–0.09
- 0.10–0.20
- 0.21–0.44
- >0.45



**Major zinc
deposits, Mt**

Australian zinc exports



Outlook



Zinc prices rose
through 2024, due to
tighter market
conditions



Future earnings to
remain stable



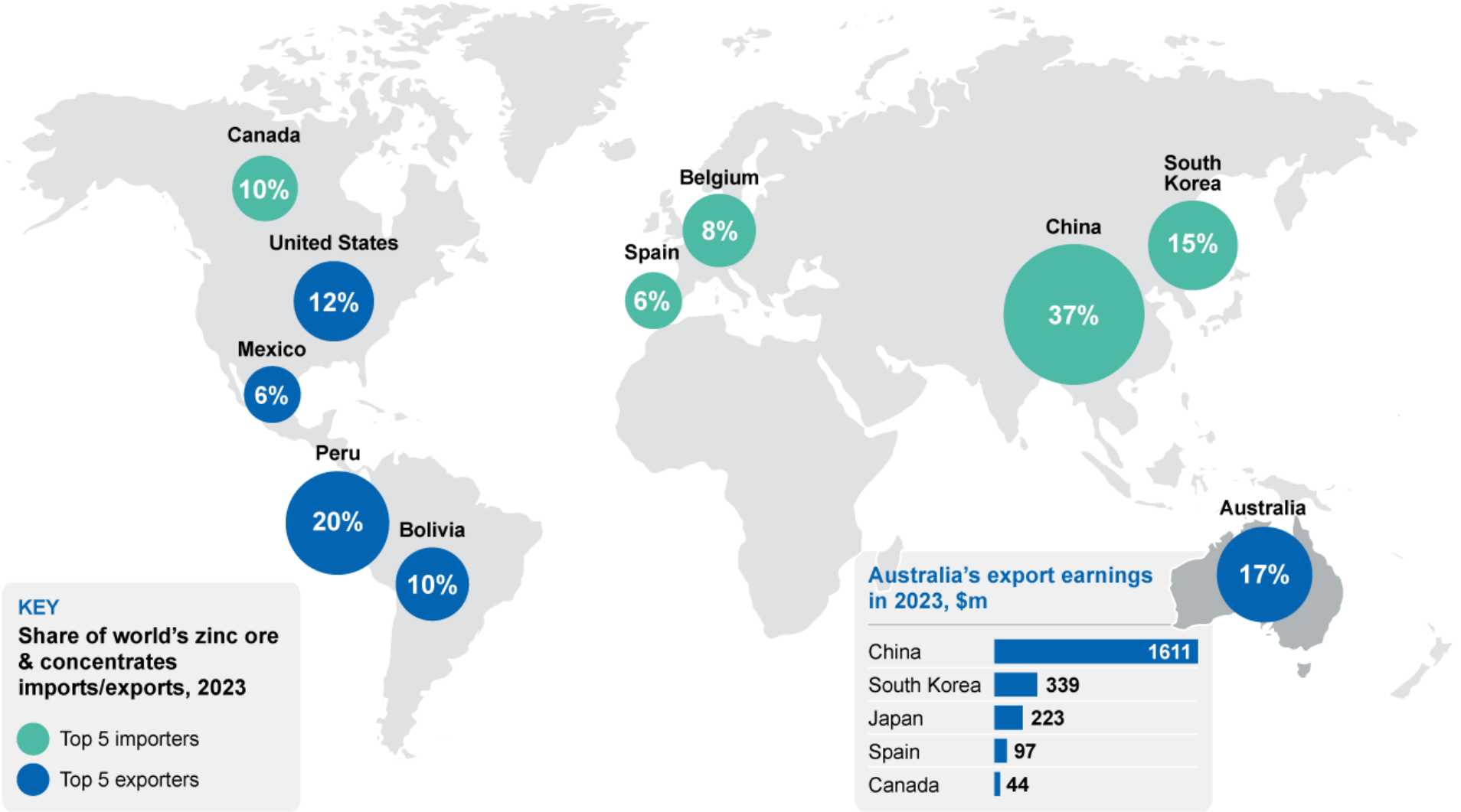
Australian **production**
outlook expected to
remain stable over the
outlook



Zinc exploration
expenditure **fell in**
September quarter

SOURCE: GA; DISR; OCE

Zinc TRADE MAP



SOURCE: ILZSG; ABS

13.1 Summary

- Zinc demand is expected to grow moderately in 2025, following the large falls in 2023. The anticipated growth will be largely driven by galvanised steel usage in the manufacturing, construction and automotive industry.
- 2025 prices are expected to be little changed from 2024 at about US\$2,770 a tonne, before dipping slightly to US\$2,710 a tonne in 2026.
- Australian refined zinc output is expected to boost export earnings to \$4.3 billion in 2024–25, then ease to \$3.9 billion in 2025–26 due to lower forecast price.

13.2 World demand

Global demand driven by Asian manufacturing and construction

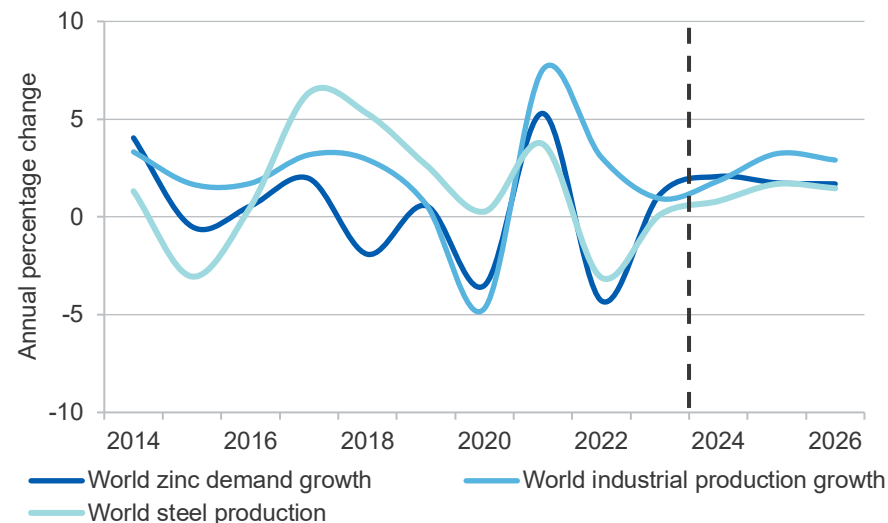
In the first nine months of 2024, global refined zinc demand rose to 10.2 million tonnes (Mt), up 1.7% compared to the same period in 2023. Asia saw a 3.8% rise due to manufacturing growth. Zinc demand has declined by 4.3% in the EU, 1.0% in the Americas, and 0.3% in Africa, due to reduced activity in manufacturing and construction.

Global refined zinc demand is estimated to rise by 2.1% reaching 13.8 Mt in 2024, driven by its role in galvanising steel (Figure 13.1). This gain is mostly due to higher activity in the manufacturing (mainly automotives) and construction sectors, notably in China, the US and the EU.

China — which accounts for around half of global zinc demand — has experienced only modest growth in the first 10 months of 2024. The Manufacturing Purchasing Managers Index (PMI) has been stuck around the border of expansion and contraction, while vehicle sales in October were up 3% to 17.9 million, and fixed asset investment was up 3.4%.

Zinc demand in the EU fell by 2.9% in the first nine months of 2024. Growth in France, Poland, and Norway was offset by declines in Germany, Italy, and the Netherlands.

Figure 13.1: Zinc demand vs industrial and steel production



Sources: CPB Netherlands Bureau for Economic Policy Analysis (2024); Department of Industry, Science and Resources (2024); International Lead Zinc Study Group (2024).

In the first nine months of 2024, zinc demand rose by 12% in Mexico and by 15% in Brazil. Conversely, the US and Canada experienced declines of around 5%. However, US demand is expected to improve, supported by signs of growth in the construction and manufacturing sectors. For instance, private construction has grown by 6.4% year-on-year, suggesting a potential recovery in zinc demand by the end of 2024.

Global zinc demand is projected to grow modestly at 1.7% over the outlook period, reaching 14.1 Mt in 2025 and 14.4 Mt in 2026. In China, a slowdown in galvanised steel production will be partly offset by the response of the Chinese industrial sector to recent policy announcements. 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 reduce demand, as automakers shift to lighter materials like aluminium and composites to enhance battery efficiency.

13.3 World production

The closure of mines in 2023 led to a decline in output in 2024

Global mine output reached 8.6 Mt in the first nine months of 2024, down 4.0% from the same period in 2023. The output fall was a result of numerous project delays and mine suspensions during 2023. China — which accounts for about 32% of global zinc mine output — saw a 2.9% fall in output. In the EU, price-induced mine closures in 2023, including Ireland’s Tara and Portugal’s Aljustrel operations, led to a 17% drop in output. In the Americas, output fell by 2.3%, mainly driven by operational changes at Peru’s Antamina mine in H1 2024, which saw a 54% fall in output. Despite this, mine output lifted in the US by 4.4% and 10.2% in Mexico over the same period.

The world’s largest zinc producers have collectively reduced production guidance for 2024 by about 105kt. For example, Kipushi mine in the Democratic Republic of Congo (DRC) revised its forecast by 50% (to 50–70kt) due to a slower output ramp-up. Vedanta in South Africa lowered its guidance by 15kt, and Lundin in Canada by 11kt, due to overburden issues in H1 and additional development and rehabilitation.

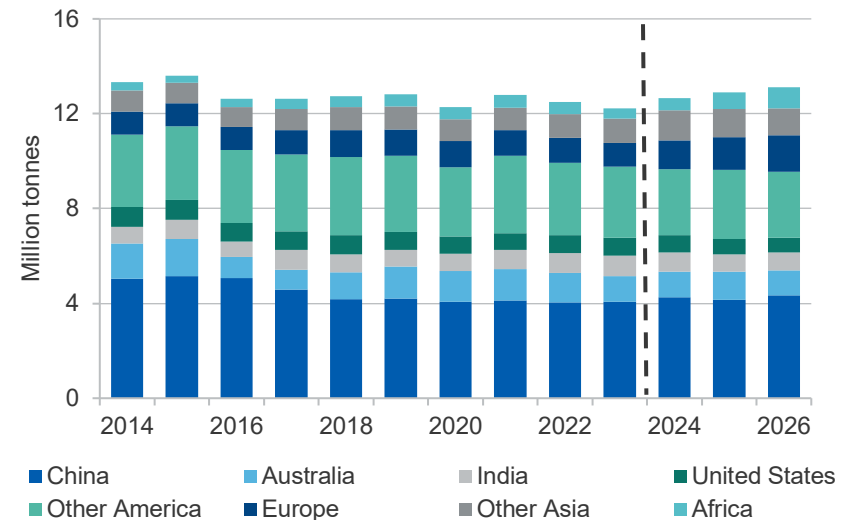
Stable prices to support mine output recovery over the outlook period

Global zinc mine output is expected to grow by 2.2% annually, reaching 12.9 Mt in 2025 and 13.2 Mt in 2026 (Figure 13.2). Recent mine closures due to price weakness have reduced global output. However, production is anticipated to recover as higher prices encourage mine re-openings. Notably, the Kipushi mine in the DRC reopened in May 2024 after 31 years, with an expected annual output of 278kt in its first five years.

Refined zinc output declined due to limited availability of concentrates

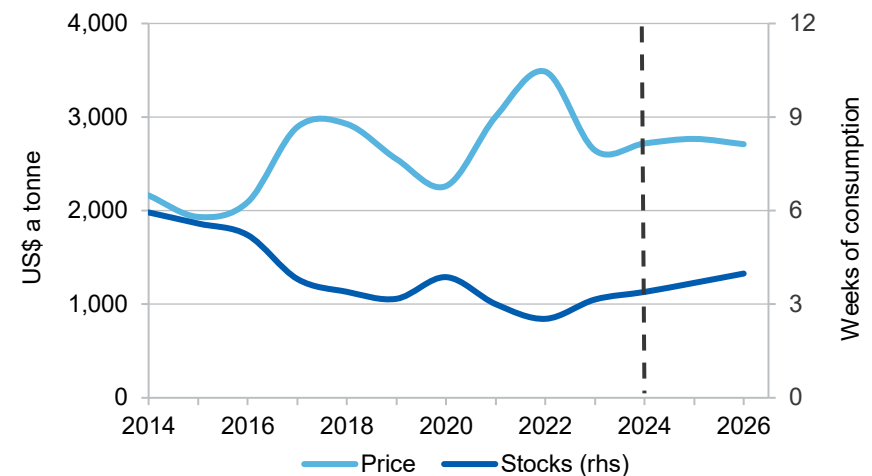
Global refined zinc output fell by 1.2% to 10.4 Mt in the first nine months of 2024, driven from limited availability of concentrates due to mine suspensions during 2023. Refined output is forecast to recover by around 2.0% to reach 14.2Mt in 2025 and 14.5Mt in 2026. Fewer mine closures and re-opening of mines due to stable prices will support the recovery.

Figure 13.2: Zinc mine production by country, metallic content



Sources: Department of Industry, Science and Resources (2024); International Lead Zinc Study Group (2024).

Figure 13.3: Zinc prices and stocks



Sources: Department of Industry, Science and Resources (2024); LME (2024); International Lead Zinc Study Group (2024).

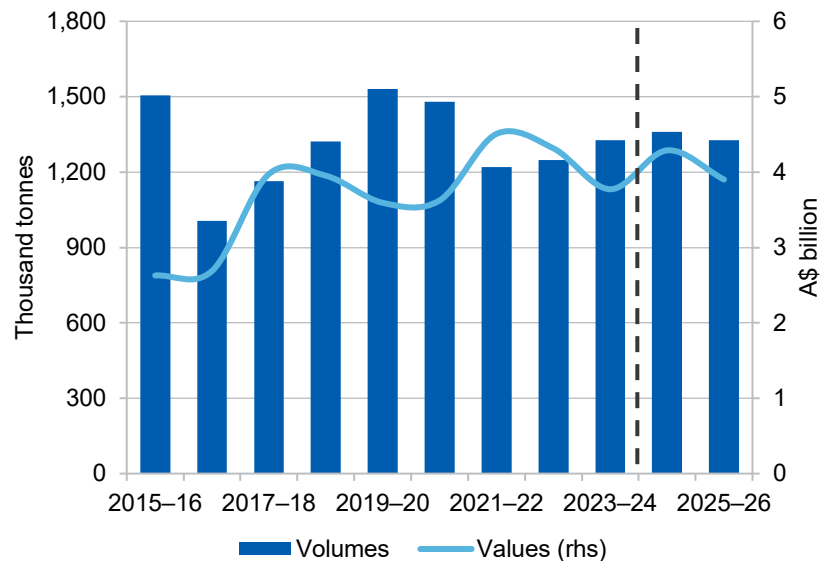
13.4 Prices

Prices rebound from 2023 low due to tighter markets conditions

The London Metal Exchange (LME) spot zinc prices declined modestly in November 2024 to average \$2,900, after exceeding US\$3,000 a tonne as the September quarter ended. Like other base metal prices, confidence in the zinc market has been underwhelmed by Chinese policy measures and hurt by the rising US dollar. However, prices remain above the mid-2023 low of under US\$2,350 a tonne, when demand was weak.

The zinc price is expected to average approximately US\$2,700 a tonne in 2024. Prices are anticipated to stabilise at US\$2,770 a tonne in 2025 and US\$2,710 a tonne in 2026 (Figure 13.3). Stable zinc prices over the outlook period are expected to help reduce the likelihood of further price-induced mine closures.

Figure 13.4: Australia's zinc exports, metallic content



Sources: ABS (2024); Department of Industry, Science and Resources (2024).

13.5 Australia's exports and production

Higher refined zinc output to boost Australian export earnings

Australia's export volumes are forecast to reach 1,361 kt in 2024–25, an upward revision of 10% from the September REQ forecast. Higher export volumes are expected to drive export earnings to around \$4.3 billion in 2024–25, up 13.7% from 2023–24. Earnings are expected to fall slightly to around \$3.9 billion in 2025–26 due to a fall in the zinc price (Figure 13.4).

Australian mine output is forecast to reach 1,134 kt in 2024–25, up 1.6% from 2023–24 before falling in 2025–26. The decline is expected due to the Lady Loretta zinc mine closure, driven by exhausted reserves. Refined output is expected to grow by 9.4% annually, driven by increased output at Sun Metals' Townsville refinery. Following its 2021 expansion, the refinery aims to produce 270ktpa by 2025 and move towards 300ktpa capacity.

Mine closures in Australia are reducing output. Aeris's Jaguar and Aurora Metal's King Vol mines ceased production in 2023, due to operational challenges, cost inflation and price decline and are now in care and maintenance. Glencore's Lady Loretta mine in Mount Isa will shut down in 2025 due to depleted mineral reserves. However, George Fisher zinc mine, in Mount Isa, is expected to remain operational until at least 2036.

Exploration expenditure down in September quarter

Zinc/lead/silver exploration expenditure fell by 36% in September quarter compared to the June quarter to be down 12% year-on-year. In the year to the September quarter 2024 exploration spending was \$63 million.

Revisions to the outlook

Since the September 2024 *Resources and Energy Quarterly*, zinc export earnings for 2024–25 have been revised up 9.0% (\$0.3 billion) and for 2025–26 by 6.0% (\$0.2 billion), driven by expected growth in refined export volumes and stable prices. However, Australia's mine production forecast has been revised down by 2.0% in 2025–26 due to scheduled closures and the lowering of the output guidance for some zinc mines.

Table 13.1: Zinc outlook

World	Unit	2023	2024 ^s	2025 ^s	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Production								
– mine	kt	12,233	12,683	12,960	13,152	3.7	2.2	1.5
– refined ^a	kt	13,921	13,942	14,242	14,463	0.1	2.2	1.5
Consumption	kt	13,602	13,883	14,125	14,364	2.1	1.7	1.7
Closing stocks	kt	822	881	998	1,097	7.14	13	10.0
– weeks of consumption		3.1	3.3	3.7	4.0	5.0	11	8.1
Price								
– nominal	US\$/t	2,644	2,719	2,767	2,710	2.8	1.8	-2.0
	USc/lb	120	123	125	123	2.8	1.8	-2.0
– real ^b	US\$/t	2,722	2,719	2,715	2,608	-0.1	-0.1	-4.0
	USc/lb	123	123	123	118	-0.1	-0.1	-4.0
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Mine output	kt	1,151	1,116	1,134	1,114	-3.1	1.6	-1.7
Refined output	kt	401	434	497	525	8.4	14.3	5.7
Export volume								
– ore and concentrate ^c	kt	1,886	1,908	1,906	1,776	1.2	-0.1	-6.8
– refined	kt	388	433	481	506	11.5	11.1	5.2
– total metallic content	kt	1,247	1,327	1,361	1,326	6.4	2.5	-2.6
Export value								
– nominal	A\$m	4,315	3,772	4,288	3,900	-12.6	13.7	-9.0
– real ^d	A\$m	4,615	3,871	4,288	3,774	-16.1	10.8	-12.0

Notes: **a** Includes secondary refined zinc; **b** In 2024 US dollars; **c** Quantities refer to the gross weight of all ores and concentrates; **d** In 2024–25 Australian dollars; **f** Forecast; **s** Estimate.

Source: ABS (2024); Company reports; Department of Industry, Science and Resources (2024); International Lead Zinc Study Group (2024); Wood Mackenzie (2024); LME (2024).

Lithium



Australia's lithium sector



86%

of the value of spodumene (lithium ore) was **exported to China** in September quarter 2024



39%

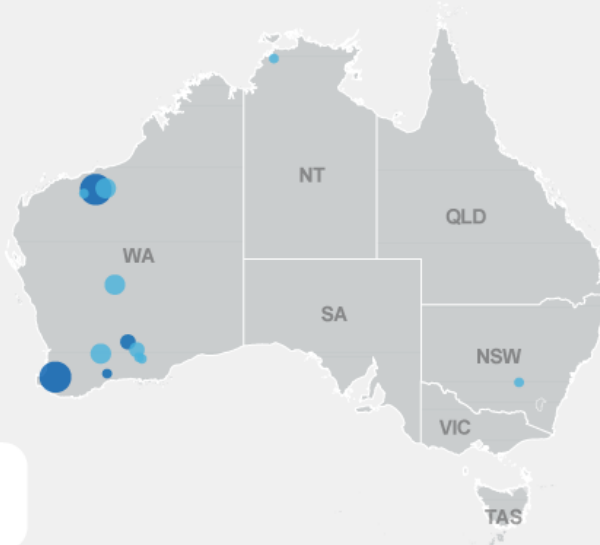
of global lithium **extraction** in 2023



14%

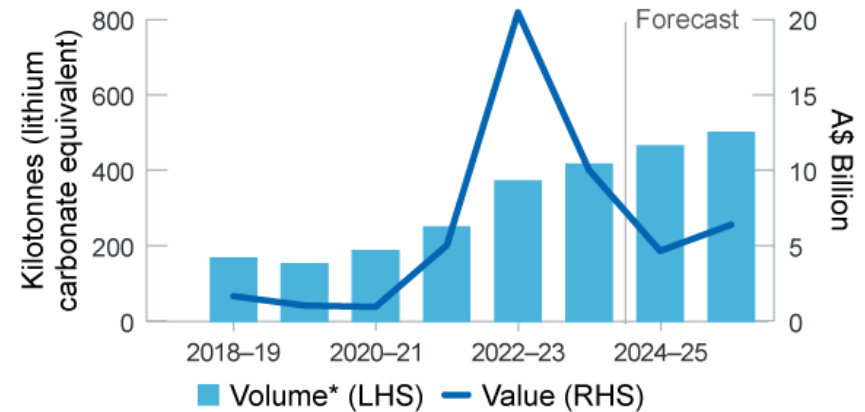
of lithium mined in Australia to be **domestically refined** by 2026

- Deposit
- Producing mine
 - 0-100
 - 100-500
 - 500-1500
 - >1500



Major lithium deposits, Kt

Australian lithium exports



Outlook



Australian export earnings **projected to fall** due to low prices



Almost half of passenger vehicles sold in China in the last quarter were EVs



Total Australian mine production **growing** despite some mines curtailing production



Low prices trigger production curtailments at higher cost mines worldwide

SOURCE: ABS; GA; Wood Mackenzie; WA DMIRS; DISR; OCE

*Volume in this chart reflects lithium content export in products including spodumene concentrates and lithium hydroxide

14.1 Summary

- Australia's lithium export earnings are forecast to fall from \$9.9 billion in 2023–24 to \$6.5 billion in 2025–26 compared to September 2024 forecast of 8.2 billion in 2025–26. The fall will be driven by a weaker lithium price, with Australian mine output expected to average 9% annual growth over the outlook period (even incorporating recent production curtailments at some mines).
- Global lithium demand is forecast to rise by 22% a year to 2026, driven by rising electric vehicle (EV) adoption. In 2024, strong sales in China have continued to offset weakness in the US and EU markets.
- The current surplus in global lithium markets is expected to narrow following suspension of some production across higher cost hard rock mining operations around the world, including China, Zimbabwe and Australia.

14.2 World Demand

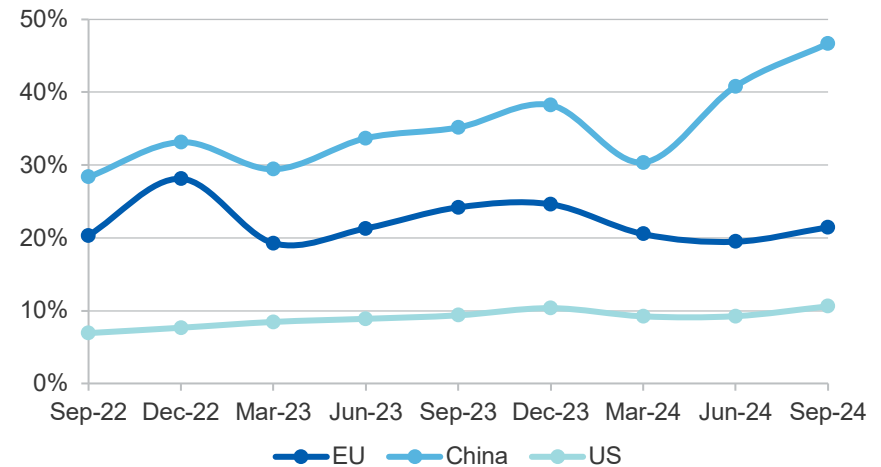
EV penetration in US and European markets improved in recent months, but is still trailing China

EV penetration strengthened in major vehicle markets in the September quarter 2024, following a weak H1 2024 (Figure 14.1). In China, EV penetration increased by 5.9 percentage points quarter-on-quarter to reach nearly 50% of passenger vehicles sold during the period. In the EU, EV penetration rose during the September quarter 2024 but remained below its 2023 peak of 25%. EV penetration for light duty vehicles in the US rose by 1.3 percentage points quarter-on-quarter to reach a record high of 10.6%.

In China, EVs continue to improve their price competitiveness. The IEA estimates 65% of EVs sold in China were cheaper than comparable internal combustion engine vehicles (ICEV) in 2023, up from 55% in 2022. EV sales were also supported by the introduction of a government trade-in program offering a subsidy when replacing an eligible older vehicle.

In the US, favourable treatment of leased EVs under Inflation Reduction Act (IRA) tax credits has helped to offset some of the impact of tightened

Figure 14.1: EV penetration rate in major vehicle markets



Notes: Data presented for the EU and China are for the passenger vehicle market, while data presented for the US is for the light duty vehicle market. EVs include both battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV).

Sources: Argonne National Laboratory (2024); China Association of Automobile Manufacturers (2024); European Automobile Manufacturers Association (2024).

eligibility requirements relating to the use of EV components and critical minerals from China. Under the IRA, a leased EV is categorised as a commercial vehicle, which are exempt from some of these restrictions. A report by TransUnion found that nearly half of all new EVs in the US in June quarter 2024 were leased.

Import duties on Chinese battery electric vehicles were approved by the European Commission in October 2024, following a vote amongst EU members which failed to veto the measure. Around 20% of BEVs sold in the EU in 2023 were imported from China, according to the European Federation for Transport and Environment.

Global EV sales rise driven by strong sales in China

Global EV sales growth is expected to moderate to 22% in 2024 from the 46% average annual growth between 2018 and 2023 (Figure 14.2). This represents an upward revision from 17% growth forecast in the September

2024 Resources and Energy Quarterly (REQ), driven by strength in Chinese EV sales over the June and September quarters of 2024.

EV sales growth is forecast to average 25% annually in 2025 and 2026, with growth heavily dependent on China maintaining its current trend. In the US and the EU, EV adoption continues to face challenges from rising trade barriers and supply chain concerns. Sales growth is likely to remain slow as the ongoing reorientation in supply chains slows EV cost declines.

Supporting the long run trend in EV sales growth is the falling cost of batteries. Costs per kWh for lithium-ion batteries fell by an average of 16% a year between 2013 and 2023, and technical performance has also improved. Bloomberg New Energy Finance (BNEF) forecast average battery prices will decrease from an average of US\$139/kWh in 2023 to \$80/kWh in 2030.

Strong EV sales (particularly in China) expected to drive increased global lithium demand through to 2026

Lithium demand growth is expected pick up slightly faster than forecast in the September 2024 REQ, as EV sales growth recovers from a period of weakness. In lithium carbonate equivalent (LCE) terms, global lithium demand is expected to rise 19% per year in 2024, before speeding up to average 22% a year in 2025 and 2026 (Figure 14.3).

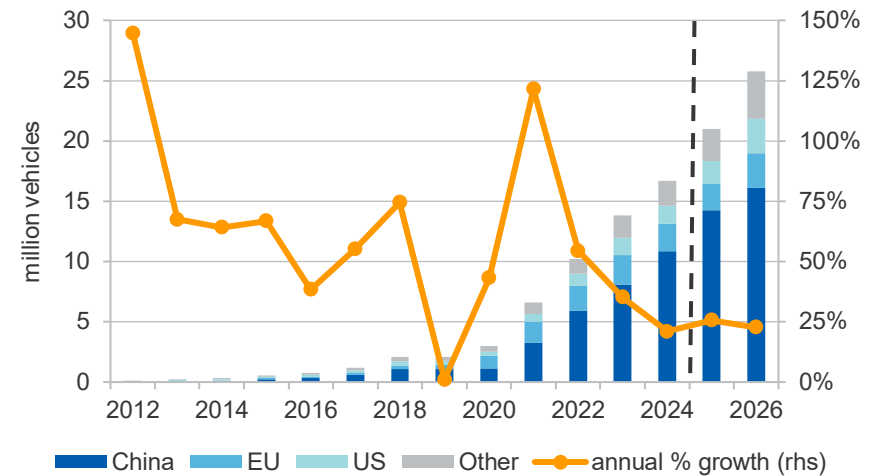
Energy storage system represents a small but rapidly growing end use for lithium. It grew 37% between 2023 and 2024 and now represents around 10% of total end use.

14.3 World production

Supply rises rapidly despite production suspension at some mines

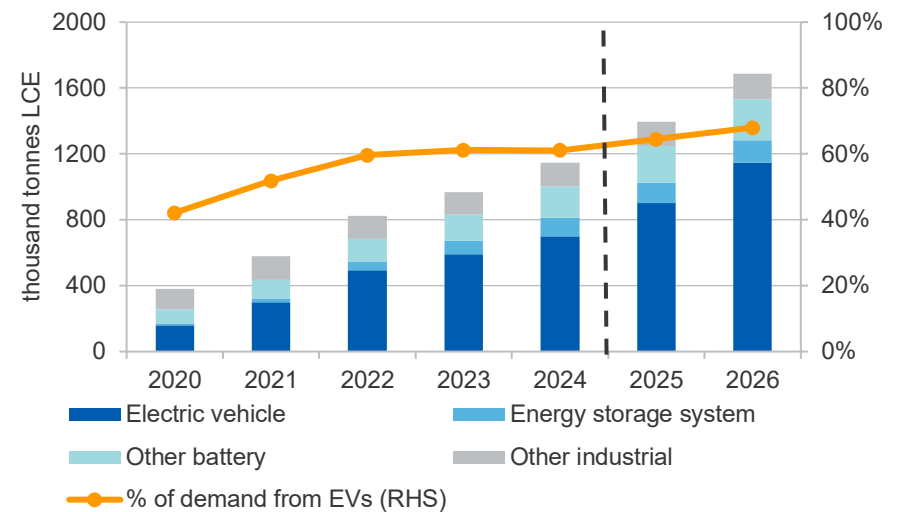
Global lithium extraction is forecast to rise by 19% in 2024, slightly reduced from the September 2024 REQ due to announced production cuts in Chinese and African mines. Lithium extraction is forecast to increase 20% annually over the outlook period to reach 1.8 Mt LCE by 2026 (Figure 14.4). Most of the new supply will be added in China, Australia and Argentina, with China forecast to add the most volume over the period.

Figure 14.2: Global passenger EV sale volumes and growth



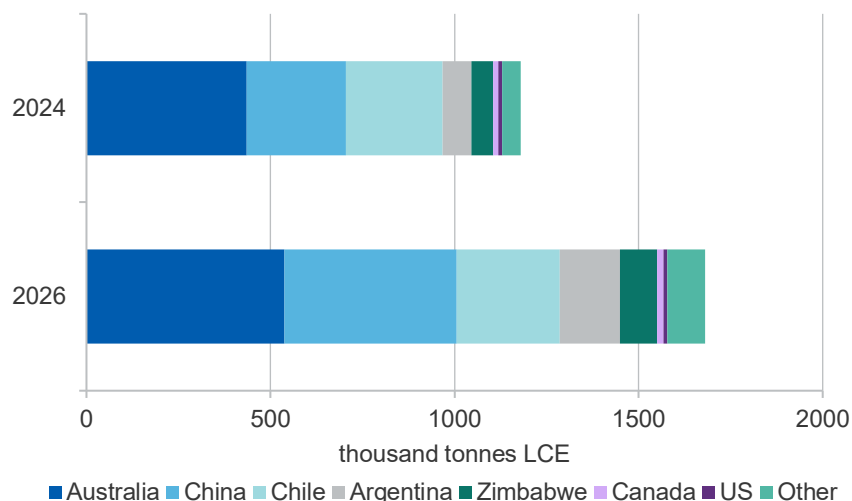
Source: IEA (2024), Department of Industry, Science and Resources (2024)

Figure 14.3: World lithium consumption, by demand source



Notes: Projections are based on DISR analysis of Wood Mackenzie data.
Source: Department of Industry, Science and Resources (2024), Wood Mackenzie (2024)

Figure 14.4: Primary lithium extraction, 2024 vs 2026



Notes: Measured on a recoverable lithium basis. Brines do not have to be further processed at refineries. Projections are based on DISR analysis of Wood Mackenzie data.
 Source: Department of Industry, Science and Resources (2024), Wood Mackenzie (2024)

Australia’s share of global lithium extraction is forecast to fall from 37% in 2024 to 32% by 2026, despite a 24% increase in Australian lithium extraction over the period. This rate of increase in Australian lithium mine production is slower than in the past, with several mines recently reducing production due to low prices (see [Australia](#) section).

China’s share of global extraction is set to rise from 24% in 2024 to 27% by 2026, through a combination of new brine and mining projects. Production is expected to rise despite the reported suspension of some Chinese lepidolite production. In September 2024, it was reported that Contemporary Amperex Technology Co. Limited (CATL) took an internal decision to suspend production at a major lithium lepidolite mine in China.

Argentina’s lithium extraction is expected to rise to about 10% of global extraction by 2026, as a series of large brine operations come online. Low prices over 2024 have reduced spending for development of new projects, with tight cash flows resulting in several companies with Argentinian

lithium assets scaling back or suspending new developments.

Zimbabwe’s lithium extraction is expected to rise to 6% of global extraction by 2026, aided by Chinese ownership and investment. Sinomine Resources Group told Zimbabwe legislators in October that it had cut production and laid off mine workers due to low prices and higher than anticipated costs — due to insufficient power and transport infrastructure.

While Chile’s lithium extraction is set to rise in level terms, growth in extraction is expected to lag other lithium producing countries. This is expected to see its share of global extraction fall from 23% in 2024 to 16% by 2026. Chile’s government is moving to take more control over the country’s lithium industry. SQM, the country’s largest lithium producer, agreed to transfer the company’s Chilean brine assets to a joint venture with majority stake owned by state-owned Codelco from 2025.

Weak prices slow diversification of battery-grade lithium production

Global primary lithium hydroxide production is forecast to rise by 20% a year to reach 0.7 Mt LCE by 2026 (Figure 14.5). China’s share of global production for lithium hydroxide is forecast to fall from 87% in 2024 to 70% by 2026, due to investments in lithium refinery capacity outside of China — particularly in Australia and the US. However, progress on investment plans have slowed due to weak lithium prices over 2024.

Global primary lithium carbonate production is forecast to rise by 18% a year to 1.1 Mt LCE by 2026. China’s share of global lithium carbonate production is forecast to rise from 58% to 60%. There is currently no substantial investment in facilities refining hard-rock lithium into lithium carbonate outside of China.

14.4 Prices

Prices expected to recover from lift in demand and ongoing impact of production suspensions

Lithium prices remained weak in 2024 as EV sales growth slowed over the period, while additional production — from projects incentivised by high prices in 2022 — came online. In October, spodumene prices averaged

US\$857 a tonne, while lithium hydroxide price averaged US\$10,790 a tonne (Figure 14.6).

The price forecast has been downgraded from the September 2024 REQ, due to the larger than anticipated decline in prices in the second half of 2024. Prices are forecast to recover at a slower pace, with the recovery driven by mine production suspensions and an anticipated recovery in global EV sales growth.

The benchmark China lithium spodumene price is forecast to pick up to US\$1,000 a tonne over 2025, and further recover to US\$1,125 a tonne by 2026. China's lithium hydroxide price is forecast to pick up to US\$12,125 a tonne in 2025, and further recover to US\$13,750 a tonne by 2026. However, weaker than anticipated EV sales growth remains a risk for lithium prices.

14.5 Australia

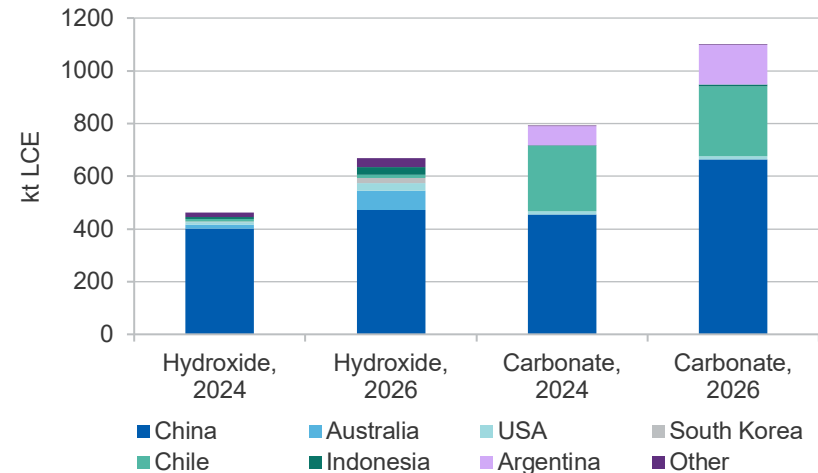
Australian production and exports set to grow as production from new mines outweighs production curtailments

Australia's lithium spodumene export earnings fell 69% year-on-year in the September quarter 2024 to \$1.2 billion. This was due to lower prices. Export volumes rose 23% over the period. In value terms, 86% of spodumene exported from Australia in the September quarter 2024 was sent to China.

Australian lithium mine output is estimated to have risen 14% year-on-year to 119 kt LCE on a recoverable lithium basis in the September quarter 2024. Bald Hill and Greenbushes mines increased production, while Kathleen Valley started concentrate production in the September quarter. Two mines, Finniss and Bald Hill, were placed in care and maintenance in 2024, in early July and mid-November respectively.

Production ramp up at Australian lithium refineries has been slower than expected since the completion of train 1 of the Tianqi Kwinana and Kemerton refineries due to ongoing technical challenges. Output of lithium hydroxide at the Tianqi Kwinana refinery rose to 1.5 kt over the September

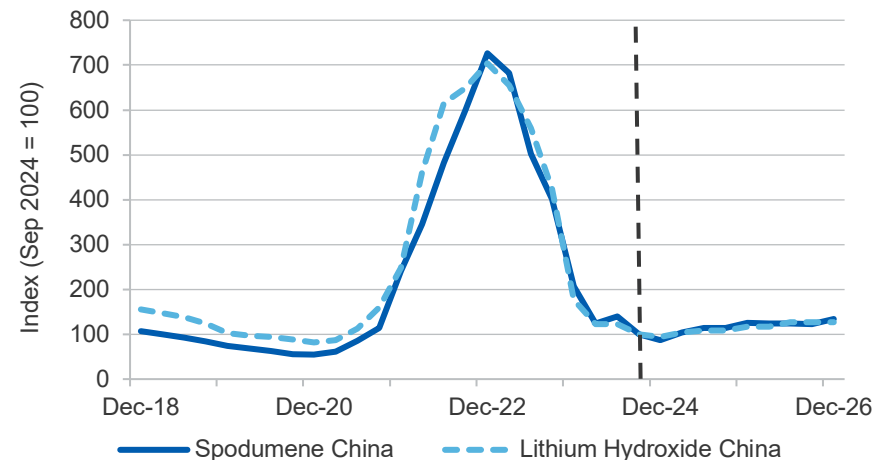
Figure 14.5: Primary lithium chemical supply, 2024 vs 2026



Notes: Includes supply from refineries and from brines, and therefore partially overlap with supply shown under lithium extraction. Lithium carbonate may be used as feedstock to produce lithium hydroxide. Excludes supply from recycling.

Source: Department of Industry, Science and Resources (2024), Wood Mackenzie (2024)

Figure 14.6: China lithium price index, quarterly



Notes: The spodumene price is CIF (cost including freight), with an average grade of 5-6%. The lithium hydroxide price is FOB (free on board).

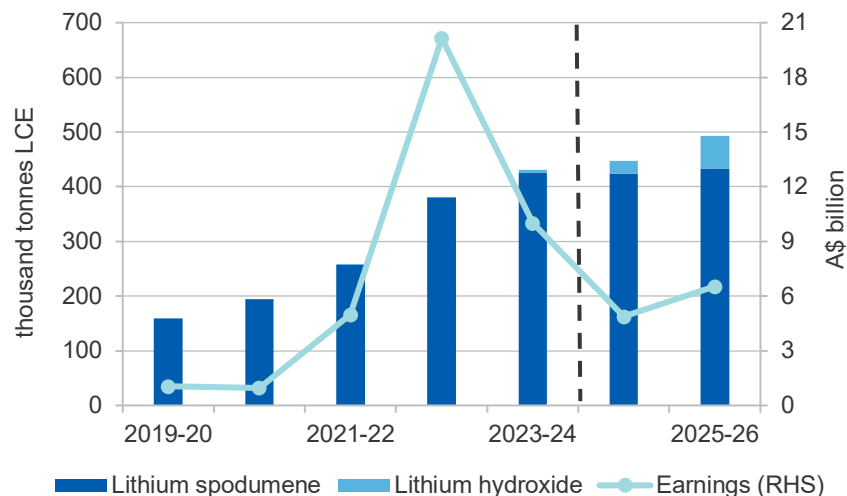
Source: Bloomberg (2024); Department of Industry, Science and Resources (2024)

quarter 2024, up 16% quarter on quarter, and represents a utilisation rate of 25%. Train 1 of Albemarle’s Kemerton refinery was reported to have achieved a 50% operating rate milestone in the March quarter. In early August, Albemarle announced train 2 was put in care and maintenance. At the same time, the company stopped the construction of train 3.

Lithium export earnings are expected to fall from \$9.9 billion in 2023–24 to \$6.5 billion a year in 2025–26 (Figure 14.7), with prices not expected to return to the highs of 2022 and 2023.

Mine production is expected to rise by about 8.7% a year from 2023–24 to 2025–26 in LCE terms. Three projects have been completed so far in 2024: Mt Holland achieved first ore in February 2024 and Kathleen Valley and the Pilgangoora P680 expansion both achieved first ore in July. Pilgangoora P1000 expansion remains under construction and on schedule to be completed in 2025, despite Pilbara Minerals’ announcement on 30 October it was putting its Ngungaju facility (part of

Figure 14.7: Australia lithium export volumes and earnings



Notes: Lithium volumes measured on a recoverable lithium basis.
Source: Department of Industry, Science and Resources (2024)

Pilgangoora) in care and maintenance from 1 December 2024. Greenbushes CGP3 is also expected to start production in 2025.

Weak market conditions have resulted in the curtailment of some mine production. Benchmark Mineral Intelligence’s Australian FOB price for SC6 averaged US\$800 a tonne in November 2024, around the operating costs of some Australian mines. On 13 November 2024, Mineral Resources announced it was putting its Bald Hill mine in care and maintenance effective immediately. This follows a pause in the ramp up of Wodgina’s third train in February, and the announcement of Arcadium in September transitioning its Mt Cattlin mine to care and maintenance by mid-2025.

Australian output of lithium hydroxide is forecast to reach 60 kt in LCE terms by 2025–26, implying 14% of Australia’s lithium spodumene production will be refined domestically. Production ramp-ups at train 1 of Tianqi Kwinana and Kemerton refineries are expected to continue. Construction at the Covalent Kwinana refinery is ongoing, and the facility is expected to begin production in H1 2025.

The IGO/Tianqi joint venture is reviewing train 2 of the partially constructed Tianqi Kwinana refinery and conducting additional front-end engineering and design, which will inform a potential FID to re-commence construction.

Revisions to the outlook

Since the September 2024 *Resources and Energy Quarterly*, the forecast for Australia’s lithium earnings has been revised down from \$8.2 billion to \$6.5 billion for 2025–26. This is due to a lower price forecast for lithium spodumene (see [Prices](#) section). Forecasts of Australia’s lithium hydroxide production have also been revised down, with only train 1 of the Kemerton refinery in operation. A higher forecast for Australian spodumene production partially offsets decreases in earnings.

Table 14.1: Lithium outlook

World	Unit	2023	2024 ^s	2025 ^f	2026 ^f	Annual percentage change		
						2024 ^s	2025 ^f	2026 ^f
Production ^b	LCE ^a kt	1,041	1,237	1,535	1,789	18.8	24.1	16.5
Demand	LCE ^a kt	966	1,147	1,395	1,686	18.7	21.7	20.9
Spodumene price								
– nominal	US\$/t	3,730	964	1,000	1,125	-74.2	3.7	12.5
– real ^c	US\$/t	3,840	964	981	1,082	-74.9	1.8	10.3
Lithium hydroxide price								
– nominal	US\$/t	50,288	12,167	12,125	13,750	-75.8	-0.3	13.4
– real ^c	US\$/t	51,772	12,167	11,900	13,230	-76.5	-2.2	11.2
Australia	Unit	2022–23	2023–24	2024–25 ^f	2025–26 ^f	2023–24	2024–25 ^f	2025–26 ^f
Production								
– Mine (spodumene)	LCE ^a kt	345	418	442	493	21.2	5.9	11.5
Export volume								
– Ore and concentrate (spodumene)	SC6 ^e eq. kt	2,962	3,344	3,318	3,384	12.9	-0.8	2.0
– Ore and concentrate (spodumene)	LCE ^a kt	381	426	424	433	11.7	-0.4	2.2
– Refined (lithium hydroxide)	LCE ^a kt	-	6	23	60	n/a	305.8	159.1
– Total lithium exports	LCE ^a kt	381	431	447	493	13.2	3.6	10.3
Export value								
– Total (nominal) ^d	A\$m	20,149	9,887	4,549	6,529	-50.9	-54.0	33.6
– Total (real) ^{d,h}	A\$m	21,547	10,146	4,549	6,318	-52.9	-55.2	29.3

Notes: **a** Lithium carbonate equivalent measured on a recoverable lithium content basis; **b** Refined lithium products include lithium hydroxide and lithium carbonate; **c** In 2024 US dollars; **d** Revenue from spodumene concentrate, lithium hydroxide and other lithium products; **e** equivalent in lithium content to spodumene concentrate with 6% lithium oxide; **h** In 2024–25 financial year Australian dollars; **f** Forecast; **s** Estimate.

Source: ABS (2024); Bloomberg (2024); Company reports; Department of Industry, Science and Resources (2024); Wood Mackenzie (2024)



Principal markets for Australia's resource and energy exports

Table 15.1: 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	166,915	40%
Japan	\$m	45,539	34,223	75,941	98,881	66,681	16%
Other Asia ^a	\$m	29,546	33,491	46,261	51,439	55,803	13%
Korea, Rep. of	\$m	21,423	23,042	43,210	45,141	39,591	10%
India	\$m	9,449	11,612	26,418	21,265	21,285	5%
EU28	\$m	18,633	15,546	13,711	14,086	13,792	3%
Other ^b	\$m	38,304	41,793	66,612	70,439	50,782	12%
Total	\$m	289,489	308,494	421,691	466,293	414,848	-

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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.2: 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	116,286
Japan	\$m	7,038	9,080	10,257	8,073	8,192
Korea, Rep. of	\$m	6,222	9,033	8,293	6,932	7,705
Taiwan	\$m	1,876	3,070	2,793	1,974	2,234
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	2,900
Total	\$m	102,861	152,975	132,489	124,131	137,854

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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.3: 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 (2024) International Trade in Goods and Services, 5368.0; International Trade Centre (2024); Department of Industry, Science and Resources (2024).

Table 15.4: 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	2,310
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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.5: 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	6,834
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	54,181

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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.6: 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	3,053
India	\$m	66	1,474	1,928	1,508	2,812
Korea, Rep. of	\$m	192	841	1,446	428	2,021
Other ^a	\$m	5,841	8,485	4,951	5,853	5,204
Total	\$m	24,394	26,105	23,200	24,406	32,929

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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.7: 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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.8: 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	687
Other ^a	\$m	3,656	5,544	6,173	6,450	5,329
Total	\$m	10,208	11,440	12,128	12,262	11,370

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 (2024) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources (2024).

Table 15.9: 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 (2024) International Trade in Goods and Services, 5368.0; International Trade Centre (2024); Department of Industry, Science and Resources (2024).

Table 15.10: 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 (2024) International Trade in Goods and Services, 5368.0; International Trade Centre (2024); Department of Industry, Science and Resources (2024).



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 two 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

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 two year outlook
FEED	Front end engineering design
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.
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
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 3.00pm 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
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 five 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 6 December 2024.