Aluminium, alumina, bauxite (AAB)

Australia's AAB sector

9.2%

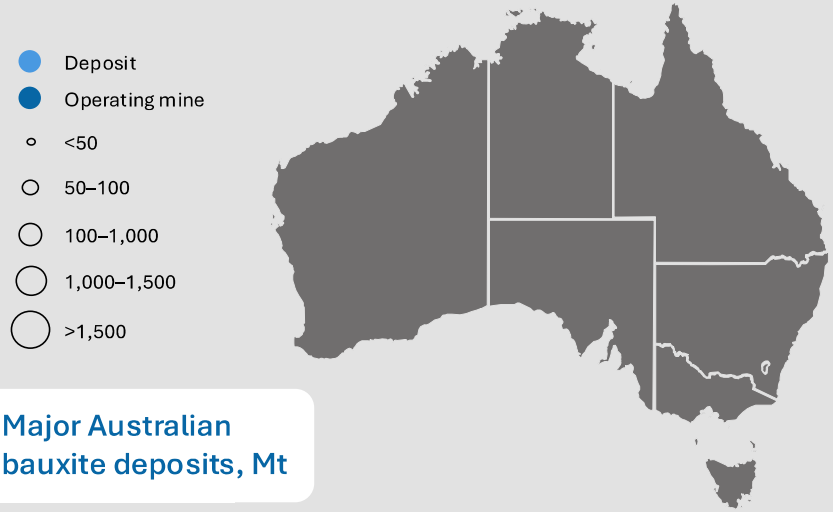
of global primary aluminium exports are Australian

$23 billion

of AAB exported in 2024–25

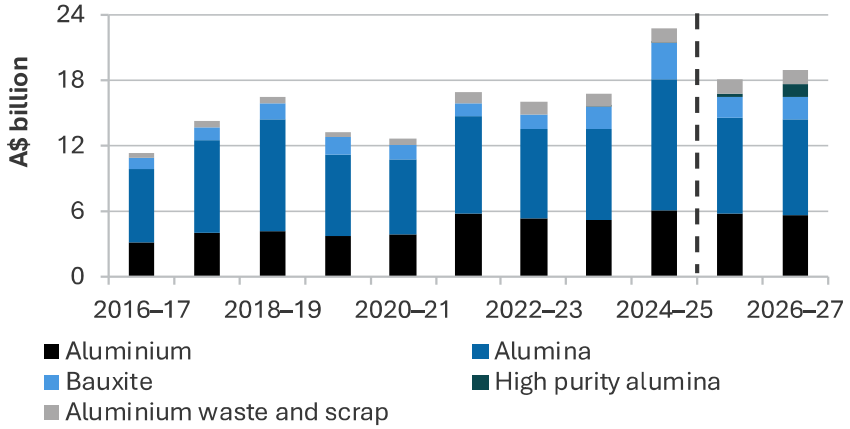
Over 98%

of Australian bauxite is exported to China



Major Australian bauxite deposits, Mt

Australian AAB exports

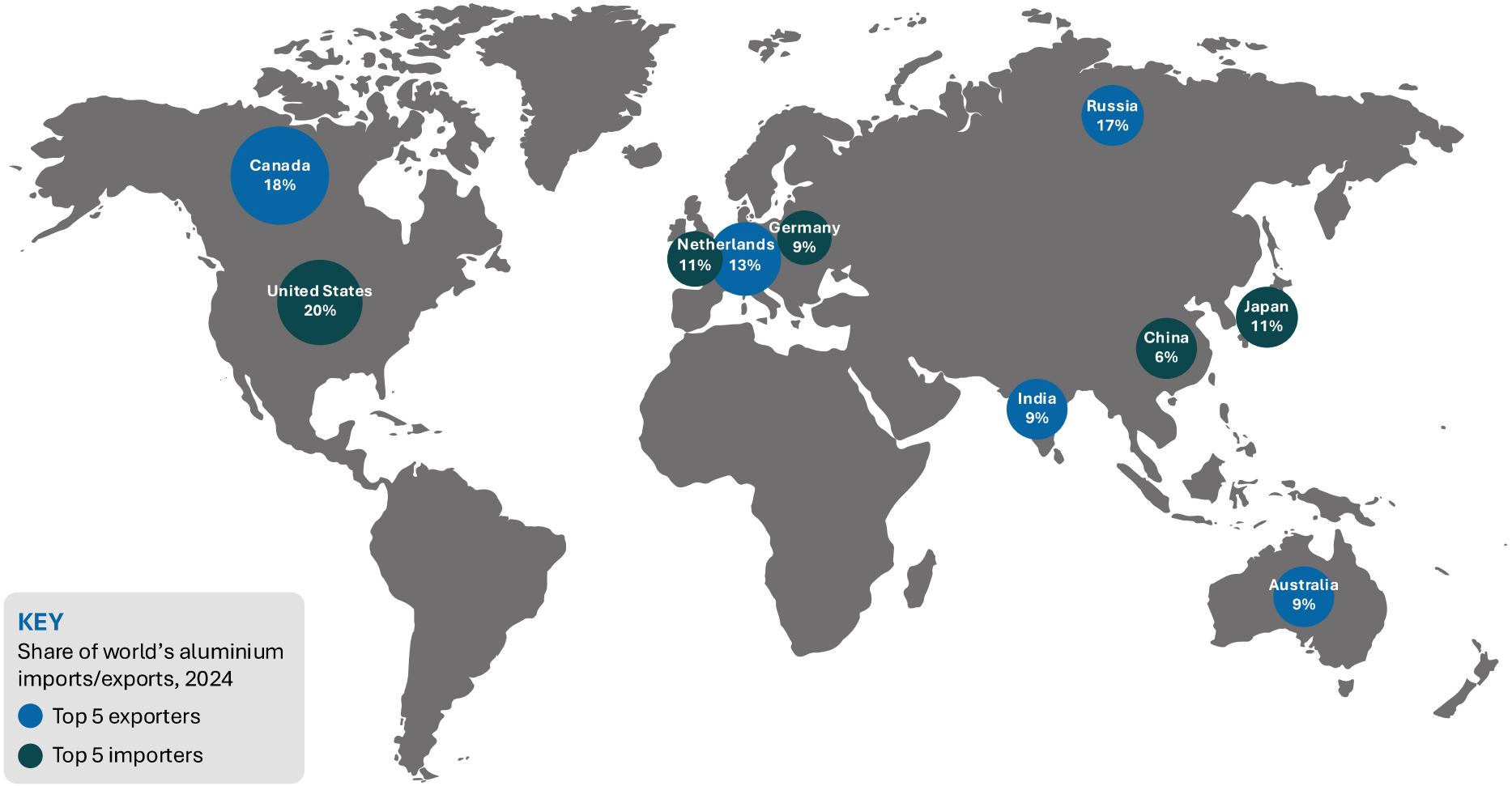


Outlook

- Bauxite exports to reach record of 44 million tonnes in 2026–27
- Australian alumina output to reach 18 million tonnes per annum
- Bauxite output sets to reach a record of 104 million tonnes in 2026–27
- Aluminium prices expected to remain elevated

Source: DISR, OCE

Aluminium trade map



Source: WBMS, ABS

10.1 Summary

- The demand for, and prices of, aluminium, alumina and bauxite (AAB) are expected to remain volatile in the short term. The rise in aluminium supply is expected to exceed the rise in global demand over the outlook period, notwithstanding strong demand for aluminium for energy-efficient cars and technologies. The demand for, and supply of, green aluminium is expected to rise, driven by the need to reduce carbon emissions. The alumina price is expected to fall over the outlook period as global supply recovers.
- Australia's annual primary aluminium output is expected to be stable at 1.6 million tonnes (Mt) over the outlook period. Increased production at South32's Worsley alumina refinery is expected to lift Australian output to 18 Mt in 2026–27. New projects and sustained output in existing mines are expected to lift Australian bauxite output to 104 Mt in 2026–27.
- After surging on a spike in the alumina price in 2024–25, Australia's AAB export earnings are forecast to fall from $23 billion to around $18 billion a year over the outlook period, as alumina prices fall.

10.2 World demand

Renewable energy infrastructure boosted aluminium demand in the first half (H1) 2025

China's rapid buildup of renewable energy infrastructure (solar and wind power installation activities) – an aluminium-intensive energy transition sector – drove global primary aluminium demand up by 3.1% year-on-year in H1 2025 to 37 Mt. Over this period, primary aluminium demand in China increased by 3.8% year-on-year to 24 Mt. Between January and May 2025, China added 198 gigawatts (GW) of solar and 46 GW of wind (enough to generate enough electricity for the fourth largest population in the world – Indonesia).

Cost-cutting efforts by automotive makers have led to greater use of recycled aluminium and helped to push secondary aluminium demand up by 3.9% in the first half of 2025 to 13 Mt.

Higher global primary aluminium production boosted the demand for alumina (as an input to aluminium production) by 4.2% year-on-year in H1 2025 to 72 Mt. Demand in China and India rose by 5.8% and 0.9%, respectively, as Chinese and Indian aluminium smelters required more alumina to increase primary aluminium production.

Higher alumina production in China increased global bauxite demand by 6.0% year-on-year in H1 2025 to 188 Mt – compared to a 4.1% year-on-year rise in H2 2024.

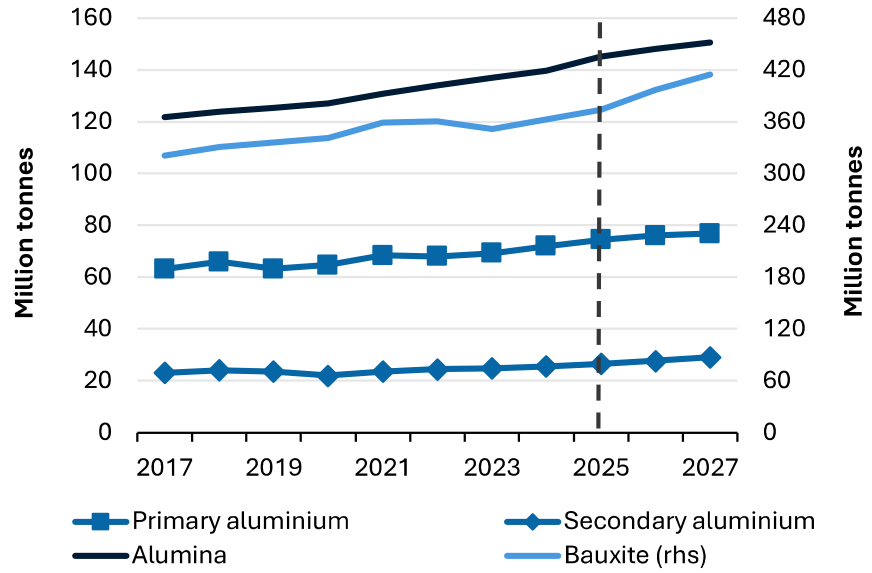
Ongoing demand from the energy transition sectors to drive aluminium demand further

Strong demand from the EV manufacturing and other low emission technology sectors is expected to boost global aluminium demand from 74 Mt in 2025 to 77 Mt in 2027 (Figure 10.1).

India's US$1.5 trillion green energy plan is likely to boost global demand for primary aluminium. India's government has a target of 500 GW of renewable energy capacity and 30% EV penetration by 2030 to help achieve net-zero by 2070. India's demand for primary aluminium demand in the renewable sector (including gridlines, wind and solar) is estimated to rise from 661,000 tonnes in 2024 to 1.3 Mt in 2030 (Bloomberg NEF

estimates). From 169,000 tonnes in 2024, India's EV producers are projected to require 948,000 tonnes of primary aluminium in 2030 (Bloomberg NEF estimates).

Figure 10.1: World primary aluminium, alumina and bauxite demand



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

Rising primary aluminium prices and demand for low-carbon aluminium are expected to boost recycled aluminium demand over the outlook period. Recycled aluminium demand is forecast to rise from 27 Mt in 2025 to 29 Mt in 2027, with the International Aluminium Institute noting that recycling aluminium uses 95% less energy than primary aluminium.

In China, demand for recycled aluminium is expected to grow at a faster pace over the outlook period. The need to decarbonise and the primary aluminium production capacity cap of 45 Mt a year set by the Chinese Government in 2017 are likely to reduce domestic primary aluminium availability. Outside of China, the need to lower a nation's carbon footprint is likely to accelerate the use of secondary aluminium.

An expected rise in global primary aluminium production will drive higher demand for alumina over the outlook period. World alumina demand is forecast to increase from 145 Mt in 2025 to 151 Mt in 2027 (Figure 10.1).

An expected rise in Chinese, Indian and Indonesian alumina production is likely to lift global bauxite demand over the outlook period; usage should rise from 373 Mt in 2025 to 414 Mt by 2027 (Figure 10.1).

10.3 World supply

China pushed global aluminium and alumina output higher in H1 2025

A rise in Chinese supply contributed to a 4.2% year-on-year rise in global primary aluminium output in H1 2025 to 37 Mt. Over this period, China produced 22 Mt of primary aluminium (up 5.8% year-on-year), with producers reacting lowering alumina prices and energy costs, and rising aluminium demand from increased infrastructure spending.

Driven by the increased demand for recycled aluminium, global recycled aluminium output rose by 7.7% year-on-year to 20 Mt in H1 2025. The US accounted for most of this increase, with recycled aluminium output increasing by 8.9% year-on-year.

Higher alumina output in China offset the fall in Australia – the world's second largest alumina producer – which saw global alumina output in H1 2025 rise by 4.5% year-on-year.

Higher bauxite output from Guinea and Australia boosted global bauxite output by 9.7% year-on-year in H1 2025.

Ex-China producers set to drive up global AAB output

Greenfield projects and expansions in ex-China regions are expected to lift global primary aluminium output over the outlook period. It is forecast that global primary aluminium supply will increase from 74 Mt in 2025 to 77 Mt in 2027 (Figure 10.2). Indonesia will contribute most to this rise. Primary aluminium supply in Indonesia is forecast to rise from 0.7 Mt in 2025 to nearly 1.4 Mt in 2027. Indian primary aluminium output is forecast to rise from 4.2 Mt in 2025 to 4.7 Mt in 2027.

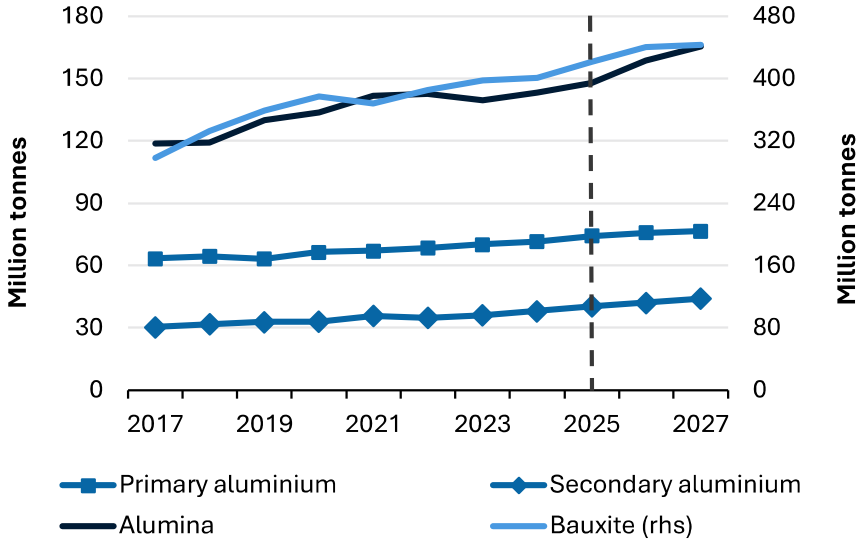
In China, the government-imposed production cap of 45 Mt primary aluminium a year is likely to restrict further output expansion. It is forecast China's primary aluminium output will reach 44.4 Mt by the end of 2027.

In the US, Emirates Global Aluminium (EGA) from the United Arab Emirates (UAE) will invest US$4 billion to build a 600,000 tonne a year primary aluminium smelter in Oklahoma (subject to a feasibility study), as part of US$200 billion worth of new commercial deals proposed between the US and the UAE. The project would be one of the only a handful of new aluminium smelters built in the US in the past five decades. The smelter would nearly double US primary aluminium production once completed in 2029.

In July 2025, Alcoa announced the restart of its 228,000 tonnes a year primary aluminium San Ciprian aluminium smelter in Spain. San Ciprian smelter was severely affected by the power outage on 28 April 2025. The restart is expected to be completed by mid-2026.

The operations of South32's 355,000 tonnes a year Mozal Aluminium Smelter in Mozambique are likely to be placed on care and maintenance after March 2026. On 24 August 2025, South32 made the announcement following unsuccessful efforts to secure affordable electricity supply.

Figure 10.2: World primary aluminium, alumina and bauxite supply



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

Driven by higher output from China, the US and Europe, global recycled aluminium output is forecast to increase from 40 Mt in 2025 to 44 Mt in 2027.

New refineries and production ramp-ups in China and ex-China regions are expected to increase global alumina output over the outlook period. It is forecast that global alumina supply will increase from 148 Mt in 2025 to 164 Mt in 2027 (Figure 10.2).

China's alumina output is forecast to hit nearly 98 Mt by 2027, driven by new greenfield projects and expansions in the coastal regions.

Outside of China, Indonesia's alumina output is forecast to rise from 4.8 Mt in 2025 to 7.6 Mt in 2027. India's alumina output is forecast to rise from 7.8 Mt in 2025 to 12 Mt in 2027.

Higher production from Australia, Indonesia and India is expected to increase global bauxite output from 422 Mt in 2025 to 443 Mt in 2027. In Australia, bauxite mine production is expected to continue to grow, but at a slower pace. Mine depletion and grade deterioration are likely to outpace the impact of mine expansions. In Indonesia and India, new refinery projects are likely to drive bauxite supply growth until 2027.

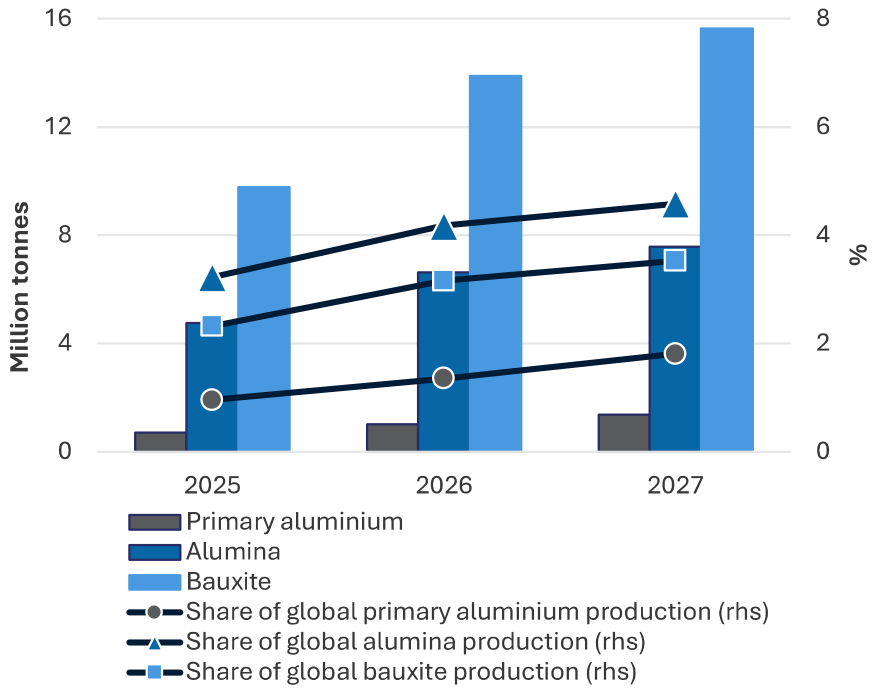
Following a decade of uninterrupted year-on-year growth, Guinea's bauxite output is expected to plateau from 2026 onwards. On 22 August 2025, EGA ceased the mining operations of its subsidiary, Guinea Alumina Corporation (GAC). The termination came after the Guinean Government terminated GAC's mining agreement in July 2025. GAC owned and operated a 14 Mt a year Sangaredi bauxite mine in the Guinean state of Boke.

Indonesia set to ramp up production

Indonesia has ramped up its investments in the aluminium sector to strengthen its position as a major player in the global supply chain. Despite the project increase, Indonesia's market share would remain relatively small.

Indonesia is expected to ramp up production substantially over the next 2 years. Primary aluminium production is expected to rise from 0.7 Mt in 2025 to nearly 1.4 Mt by 2027.

Figure 10.3: Indonesia's production* outlook for primary aluminium, alumina and bauxite



Note: *Base case production (excluding probable and possible projects).

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

Alumina production is expected to rise from 4.8 Mt in 2025 to 7.6 Mt by 2027. Bauxite production is expected to rise from 9.8 Mt in 2025 to nearly 16 Mt by 2027 (Figure 10.3). The production ramp-up will drive a rise in Indonesia's shares of global production. Indonesia's share of global primary production will rise from 1.0% in 2025 to 1.8% by 2027. Indonesia's share of global alumina rises from 3.2% in 2025 to 4.6% by 2027. Indonesia's share of global bauxite rises from 2.3% in 2025 to 3.5% by 2027 (Figure 10.3).

Strategic moves beyond aluminium

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

In August 2025, Alcoa of Australia announced an agreement for a joint development with Japan Australia Gallium Associates Pty Ltd to explore gallium recovery at one of its alumina refineries in Western Australia (WA). If the project comes to fruition, it will be one of the few gallium ex-China sources.

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

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

Recycling to lead a circular, low carbon global economy

In China, primary aluminium production has been capped at 45 Mt a year – a policy introduced by the Chinese Government in 2017. In 2020, China made a reclassification that allowed scrap aluminium to be imported as recycled aluminium, rather than under the more restricted waste category. The reclassification has lifted scrap imports and provided crucial feeding to secondary aluminium smelters. China is the world's largest producer of recycled aluminium, producing over 11 Mt in 2024.

Driven by trade protection, climate commitments and resource constraints, there has been an increasing shift towards circularity and low carbon growth. Traditional primary aluminium producers such as Rio Tinto, EGA, Hydro and a few others have entered the secondary aluminium market.

In Australia, Rio Tinto, Capral and Sims Metals have collaborated to build a closed-loop aluminium recycling plant in Queensland. Under this collaboration, post-production aluminium scrap will be taken from Capral's Bremer Park facility, processed and sorted by Sims Metals, and delivered to Rio Tinto's Boyne Aluminium Smelter in Gladstone for remelting. Around 1,000 tonnes of aluminium with a minimum 20% recycled content are expected to be produced every year. The 20% recycled content aluminium is sent back to Capral's Bremer Park facility for extrusion operations.

Samsung's selection of recycled aluminium for its Galaxy S25 smartphones' frames is a demonstration of the company's commitment to enhancing circularity and lowering the carbon footprint associated with the device's production. Google has also integrated recycled aluminium into the production of its Pixel smartphone series. Apple is expected to use recycled aluminium for its upcoming iPhone 17 series.

AI set to revolutionise the way aluminium is produced

Artificial Intelligence (AI) is set to revolutionise the way aluminium is produced by optimising production, improving quality control and enhancing sustainability.

AI can uncover hidden inefficiencies, detect performance anomalies, and provide actionable insights. Real time data gathered from sensors and monitoring systems across the production line is continuously analysed by AI. With technical interfaces, AI can generate alerts when there is a possibility of a breakdown or the aluminium production line needs repairing. AI can also recommend workflow adjustments to maximise throughput by identifying process issues in resource utilisation. The result is an agile production process that minimises material waste, reduces the industry's carbon footprint, and enhances product quality and the operation productivity.

Large global aluminium companies such as Rio Tinto, Norsk Hydro, EGA, China Hongqiao, Novelis and few other smaller producers have leveraged AI for their production line optimisation. Some successes in the application of AI have been made, with a boost of 10–15% to overall productivity or a reduction of 15–18% in energy usage.

10.4 World trade

China drove up global alumina and bauxite exports in H1 2025

Rising trade barriers contributed to lower global primary aluminium exports of 28% year-on-year in H1 2025 to 6.1 Mt. Over this period, Canada, the largest supplier of primary aluminium to the US, recorded an 12% fall in primary aluminium exports. Australia's primary aluminium exports fell by 0.3% year-on-year in H1 2025 to 714,000 tonnes.

Trade actions reduced global secondary aluminium exports by 15% year-on-year in H1 2025 to 1.6 Mt. Secondary aluminium exports from Canada and the Netherlands – the world's two largest secondary aluminium exporters – fell by 6.6% and 30% year-on-year in H1 2025, respectively.

Strong alumina exports from China boosted global alumina exports by 6.3% year-on-year in H1 2025 to 21 Mt. Over this period, China exported 1.6 Mt of alumina, up 65% year-on-year. Australia – the world's largest alumina exporter – exported 7.4 Mt of alumina in H1 2025, down by 3.3% year-on-year.

Strong demand from China drove global bauxite exports up by 25% year-on-year in the first half of 2025 to 111 Mt. Guinea recorded a very strong rise in bauxite exports in H1 2025, up 32% year-on-year.

Rising demand from China drove higher global bauxite imports in H1 2025

Uncertainty over trade actions reduced global primary aluminium imports by 5.8% year-on-year in H1 2025. Primary aluminium imports into the US fell by 0.8% in H1 2025, as traders reduced purchases from April 2025 (the US increased aluminium import tariffs from 10% to 25% in April 2025).

A surge in China's imports led to a 1.3% year-on-year rise global secondary aluminium imports in H1 2025 to 2.8 Mt. Over this period, China imported over 1 Mt of secondary aluminium, up 6.9% year-on-year.

Lower imports from China reduced global alumina imports by 15% year-on-year to 16 Mt in H1 2025. China was able to reduce alumina imports due to increased alumina output from its domestic alumina refineries.

Higher imports from China led to a 25% year-on-year rise in global bauxite imports in H12025. Over this period, China imported 102 Mt of bauxite, up 32% year-on-year.

EU CBAM likely to have minimal impacts on Australia's primary aluminium exports

The European Union (EU) Carbon Border Adjustment Mechanism (CBAM) is expected to commence on 1 January 2026. The CBAM – the world's first carbon tax on imports – applies to EU imports of iron ore, steel, aluminium, cement, fertiliser, electricity and hydrogen. The EU CBAM will penalise penalize imports of high carbon aluminium in favour of secondary aluminium imports with low carbon footprints.

The CBAM is likely to have only minimal impacts on Australia's primary aluminium exports. The EU accounted for just $35 million (0.6%) of Australia's total primary aluminium exports in 2024–25.

Under the new trade agreement between the EU and the US, US aluminium imports from the EU face tariffs of 50%, whereas aluminium scrap faces a lower tariff of 15%. This has already led to an increase in outflows of aluminium scrap from the EU to the US. If the outflows of aluminium scrap were to continue in the medium to long term, it would have some implications to the objective of the CBAM. More high carbon aluminium would be imported into the EU to compensate for the loss of secondary aluminium imports.

10.5 Prices

Better global manufacturing activity lifting price in 2025

Improving global manufacturing activity, a massive buildup of renewable energy infrastructure in China, and new US-China and US-EU trade deals have provided recent support to aluminium prices. The LME primary aluminium spot price has risen by 4.2% so far in 2025, to US$2,643 a tonne on 26 September 2025 – compared to an average US$2,478 a tonne in H2 2024. The LME aluminium price is forecast to average around US$2,530 a tonne in 2025 (Figure 10.4).

LME aluminium inventories rose from 413,575 tonnes in May 2025 to 517,700 tonnes in September 2025 (Figure 10.5). The rise was driven by a surge in Indian-origin aluminium entering the LME warehouses. The ongoing Russia-Ukraine conflict and resulting Western sanctions have disrupted Russian primary aluminium supplies to the LME.

A recovery of global alumina supply – driven by a large increase in Chinese production – has pushed the Free On Board (FOB) WA alumina price down by 52% so far in 2025. On 26 September 2025, prices were US$323 a tonne – compared to an average of US$602 a tonne in H2 2024. The WA alumina price is forecast to remain under end-2024 levels, averaging US$420 a tonne in 2025 (Figure 10.4).

Growing global demand for low emission technology to support the aluminium price over the outlook period

Growing global demand for new, energy-efficient cars and technologies and increased electrification efforts are expected to lift aluminium demand over the medium term. Aluminium is a key component in renewable technologies, including solar power systems, wind turbines and hydroelectric plants. However, primary and secondary aluminium supply is expected to rise faster than total demand. The LME primary aluminium price is forecast to average US$2,590 a tonne in 2027 (Figure 10.4). The FOB WA alumina price is forecast to average US$383 a tonne in 2027, as supply is expected to outpace demand (Figure 10.4).

10.6 Australian exports and production

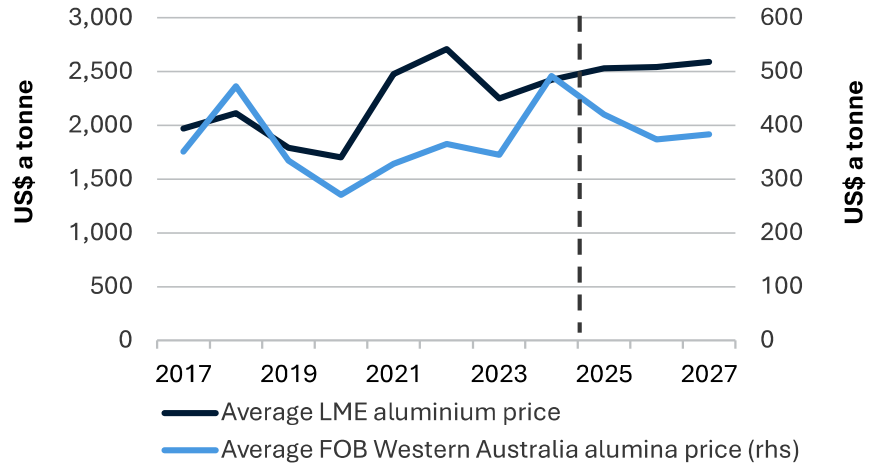
Higher prices and bauxite export volumes lifted export earnings in 2024–25

Higher alumina and aluminium prices, and increased bauxite export volumes and values, lifted Australia's AAB exports by 36% year-on-year in 2024–25 to $23 billion. Australia's primary aluminium, alumina and bauxite export earnings reached record highs of $6.0 billion, $12 billion and $3.3 billion, respectively, in 2024–25 (Figure 10.6).

Falling alumina price set to lower AAB export earnings

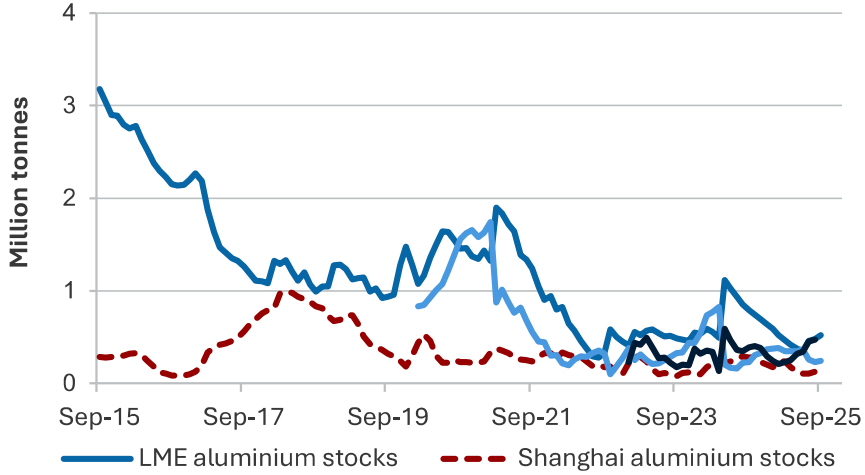
Australia's AAB exports are likely to be steady at about $18 billion over the outlook period (Figure 10.6), reflecting stable export volumes. On average, Australia will export 1.5 Mt of primary aluminium, 16 Mt of alumina and 43 Mt of bauxite every financial year.

Figure 10.4: Primary aluminium and alumina prices



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

Figure 10.5: Exchange aluminium stocks



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

Australian bauxite producers responded to supply issues

Australian bauxite producers have lifted production in response to export bans from Indonesia and Guinea. Australia's bauxite output rose by 1.7% year-on-year to 102 Mt in 2024–25. Production at Rio Tinto's Weipa bauxite mine in Queensland and Gove bauxite mine in the Northern Territory increased by 5.3% and 1.8% year-on-year in 2024–25.

In 2024–25, a slight increase in Portland's aluminium output drove a minor lift in Australia's primary aluminium output (up 0.3% year-on-year).

A delay in approving South32's Worsley Mine Development Project (WMDP) and a production curtailment at the Kwinana alumina refinery in WA – due to rising costs, ageing plant and grade challenges – reduced Australia's alumina output by 7.7% year-on-year in 2024–25.

New bauxite mines to sustain Australia's refinery output

South32 commenced mining new bauxite areas under the Worsley Mine Development Project (WMDP) (approved by the Commonwealth and WA Governments in the March quarter 2025) in the June quarter 2025. The approvals will enable South32 to access bauxite to sustain production at Worsley Alumina until at least 2036. As a result, Australian alumina output is forecast to rise from under 17 Mt in 2024–25 to over 18 Mt in 2026–27.

New bauxite projects and sustained output in existing mines are expected to lift Australian bauxite output from 102 Mt in 2024–25 to 104 Mt in 2026–27.

In August 2025, Rio Tinto approved investment of $180 million and commenced work on the Norman Creek project at its Amrun bauxite mine in Queensland. First production from Norman Creek is targeted for 2027. Construction is expected to be completed in 2028.

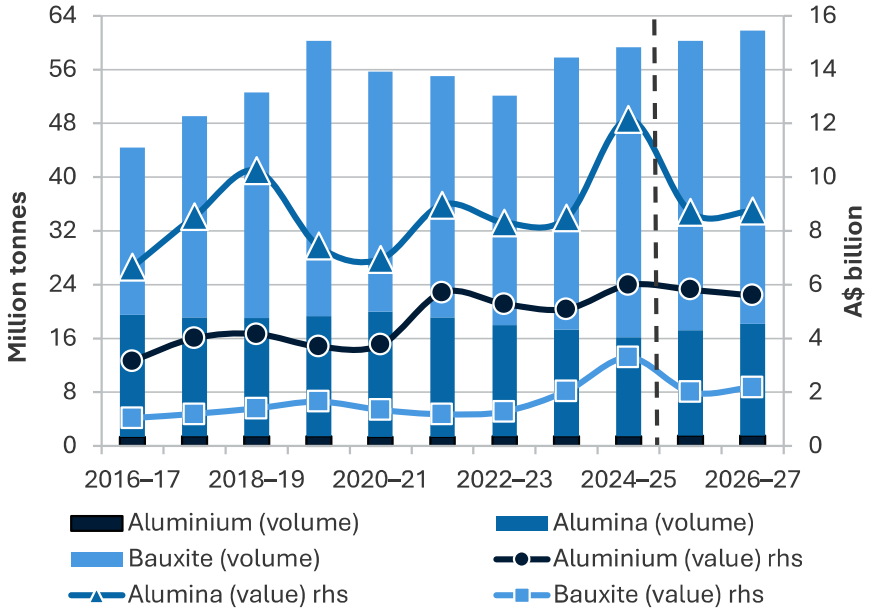
In September 2025, Alcoa announced the permanent closure of its Kwinana alumina refinery in WA. The Kwinana alumina refinery has been under production curtailment since the June quarter 2024.

Alcoa Australia is seeking an environmental approval from the WA Environmental Protection Authority to transition its bauxite mining at Huntly mine from North Dandalup to Myara North and Holyoake mine regions. The Huntly Mine Transition is essential for the continued operation of the Huntly mine and the planned 5% increase in production at the Pinjarra alumina refinery.

No expansions or major disruptions are expected at existing aluminium smelters in Australia over the outlook period.

Australia's primary aluminium output is projected to be around 1.6 Mt a year.

Figure 10.6: Australian aluminium/alumina/bauxite exports



Note: Excluding high purity alumina and aluminium waste and scrap exports.

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

Revisions to the outlook

The forecast for Australia's AAB export earnings in 2025–26 has been revised down since the June 2025 *Resources and Energy Quarterly* (REQ). Exports are now forecast at $18.1 billion, down by $101 million. The downward revision reflects a lower price forecast for alumina exports. Earnings forecasts for 2026–27 have been revised down to $18.9 billion from $19.1 billion in the June 2025 REQ. This reflects the impact of forecast lower alumina export earnings.

Table 10.1: Aluminium, alumina and bauxite outlook

						Annual percentage change		
World	Unit	2024	2025[f]	2026[f]	2027[f]	2025[f]	2026[f]	2027[f]
Primary aluminium								
Supply	kt	71,572	74,332	75,821	76,540	3.9	2.0	0.9
Demand	kt	71,963	74,498	76,102	76,831	3.5	2.2	1.0
Prices aluminium [c]								
- nominal	US$/t	2,419	2,530	2,540	2,590	4.6	0.4	2.0
- real [d]	US$/t	2,490	2,530	2,477	2,474	1.6	-2.1	-0.1
Prices alumina								
- nominal	US$/t	492	420	374	383	-14.7	-10.9	2.3
- real [d]	US$/t	506	420	365	365	-17.2	-13.1	0.2
Australia	**Unit**	**2023–24**	**2024–25**	**2025–26[f]**	**2026–27[f]**	**2024–25**	**2025–26[f]**	**2026–27[f]**
Supply								
Primary aluminium	kt	1,568	1,573	1,631	1,634	0.3	3.7	0.2
Alumina	kt	18,255	16,851	17,400	18,480	-7.7	3.3	6.2
Bauxite	Mt	100.2	101.9	102.6	107.9	1.7	0.7	5.2
Demand								
Primary aluminium	kt	186	163	130	130	-12.6	-20.4	0.1
Exports								
Primary aluminium	kt	1,432	1,460	1,549	1,552	2.0	6.1	0.2
- nominal value	A$m	5,092	5,983	5,811	5,598	17.5	-2.9	-3.7
- real value [e]	A$m	5,367	6,157	5,811	5,449	14.7	-5.6	-6.2
Alumina	kt	15,877	14,718	15,660	16,632	-7.3	6.4	6.2
- nominal value	A$m	8,486	12,155	8,700	8,740	43.2	-28.4	0.5
- real value [e]	A$m	8,944	12,507	8,700	8,506	39.8	-30.4	-2.2
Bauxite	kt	40,497	43,178	43,098	43,651	6.6	-0.2	1.3
- nominal value	A$m	2,039	3,291	2,004	2,188	61.4	-39.1	9.2
- real value [e]	A$m	2,149	3,387	2,004	2,130	57.6	-40.8	6.3
Total value								
- nominal value	A$m	16,799	22,813	18,075	18,945	35.8	-20.8	4.8
- real value [e]	A$m	17,705	23,475	18,075	18,439	32.6	-23.0	2.0

Notes: **c** LME cash prices for primary aluminium; **d** In 2025 calendar year US dollars; **e** In 2025–26 financial year Australian dollars; **f** Forecast.

Sources: ABS (2025) International Trade in Goods and Services, 5368.0; Bloomberg (2025); London Metal Exchange (2025); Department of Industry, Science and Resources (2025); World Bureau of Metal Statistics (2025); Wood Mackenzie (2025).