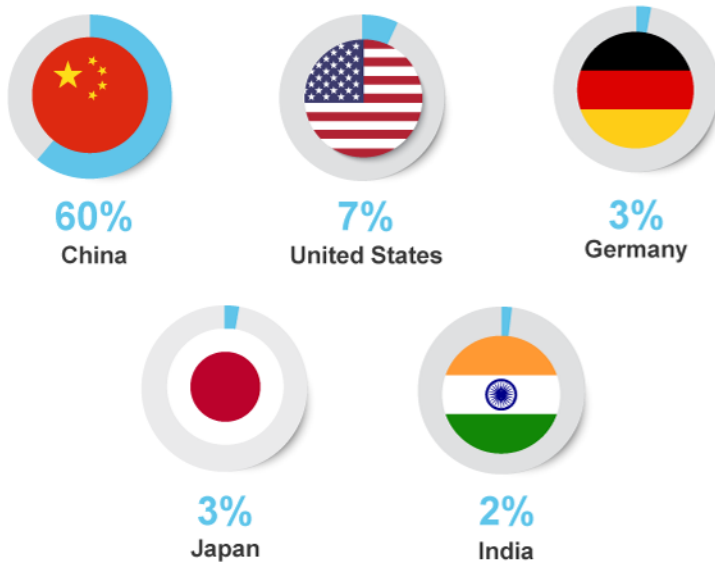


Aluminium

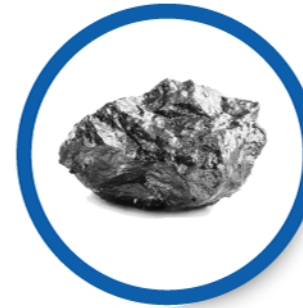
Major Australian bauxite deposits, Gt



Key consumer markets for primary aluminium, 2021



Aluminium



Bauxite ore is refined to recover alumina, smelted to make aluminium



2-3 tonnes of bauxite is required to produce one tonne of alumina



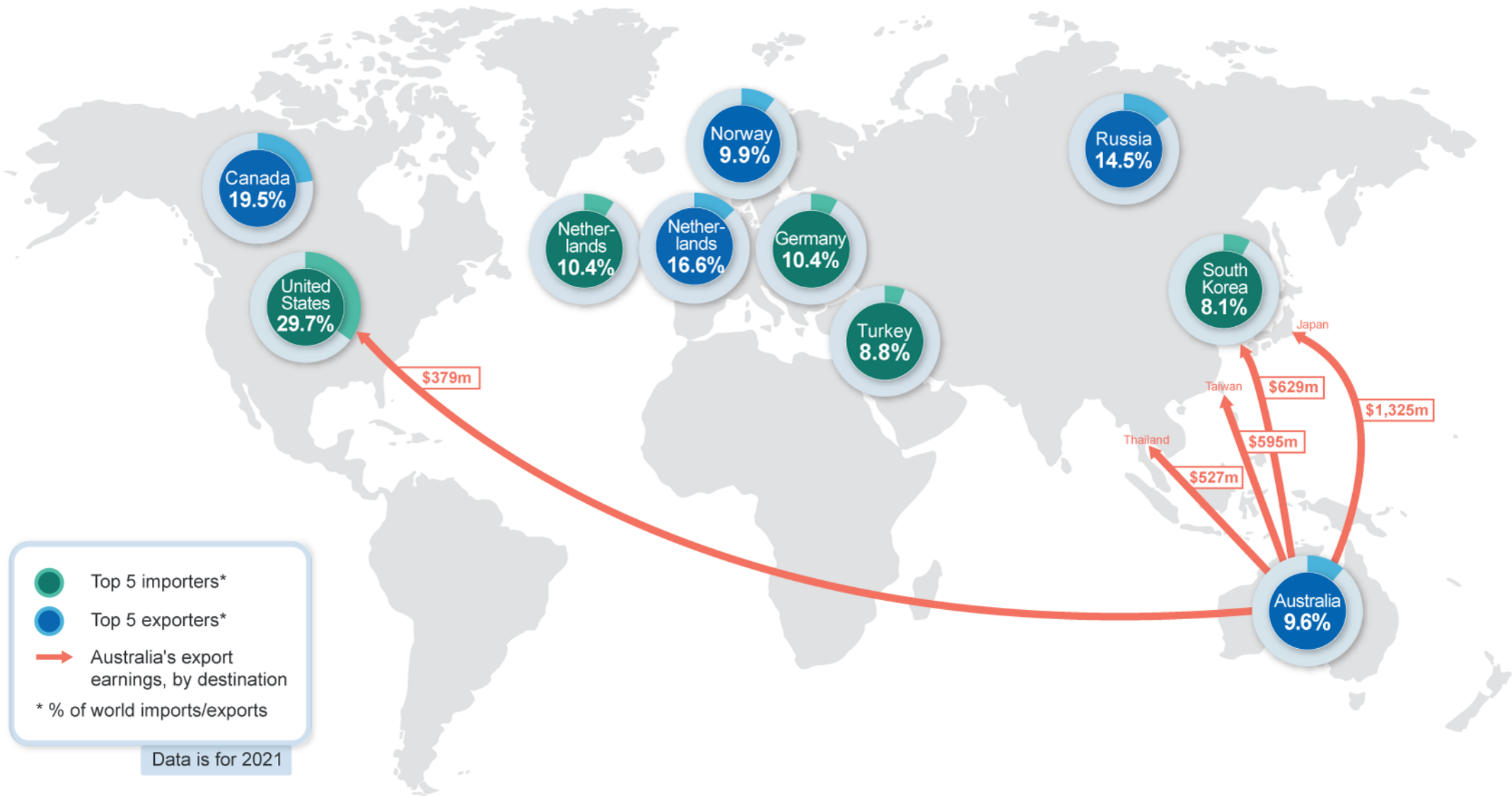
China is the **largest producer and consumer** of primary aluminium



Each electric vehicle contains **0.25 tonne** of aluminium

Australia's aluminium





11.1 Summary

- The fallout from the Russian invasion of Ukraine is expected to keep primary aluminium prices at high levels in 2022, averaging US\$3,100 a tonne. While prices are forecast to drift down from current highs through the rest of the forecast period, averaging US\$2,815 a tonne in 2024, prices will be supported by growing demand for new, energy-efficient cars and technologies.
- Annual Australian output is expected to be broadly steady over the outlook period, remaining at around 1.6 million tonnes of primary aluminium and 21 million tonnes of alumina (see [Australia section](#)).
- Australia's aluminium, alumina and bauxite export earnings are estimated to increase by 31% to \$16 billion in 2021–22 and remain at this level by the end of the outlook period.

11.2 World consumption

China led lower aluminium consumption in the March quarter 2022

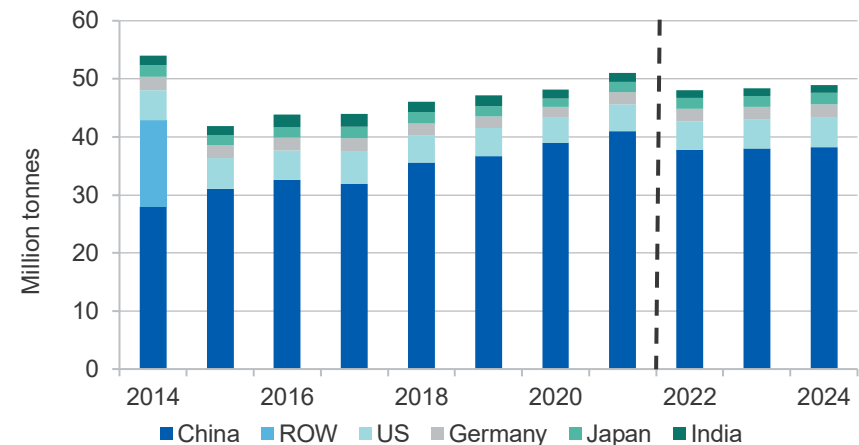
Global primary aluminium consumption fell by 4.3% year-on-year to 16 million tonnes in the March quarter 2022, due to a 6.7% year-on-year fall in aluminium consumption in China — the world's largest aluminium consuming nation.

Weaker Chinese demand was mainly due to strict COVID-19 containment measures in several key manufacturing hubs such as Shanghai, Guangdong and Jilin in lockdown. These cities are among China's top car producing hubs, accounting for more than 30% of China's automotive production. Chinese automotive sales fell by 51% year-on-year in April 2022 to around 1.2 million units — the lowest level in over a decade.

Primary aluminium consumption fell in many parts of the world in the March quarter 2022, as high primary aluminium prices and supply constraints reduced construction and automotive demand. Aluminium consumption in Germany dropped by 7.2% year-on-year, Spain (down by 22% year-on-year), and Brazil (down by 38% year-on-year).

World alumina usage increased by 2.7% year-on-year in the March quarter 2022 to nearly 34 million tonnes, driven by higher global aluminium

Figure 11.1: World primary aluminium consumption



Source: World Bureau of Metals Statistics (2022); Macquarie (2022); Department of Industry, Science and Resources (2022)

production, which was up by 1.7% year-on-year in the same period. China remains the world's largest alumina consuming country, accounting for 57% of global alumina consumption. In the March quarter 2022, a 1.0% rise in Chinese primary aluminium production drove a 2.7% rise in global alumina consumption.

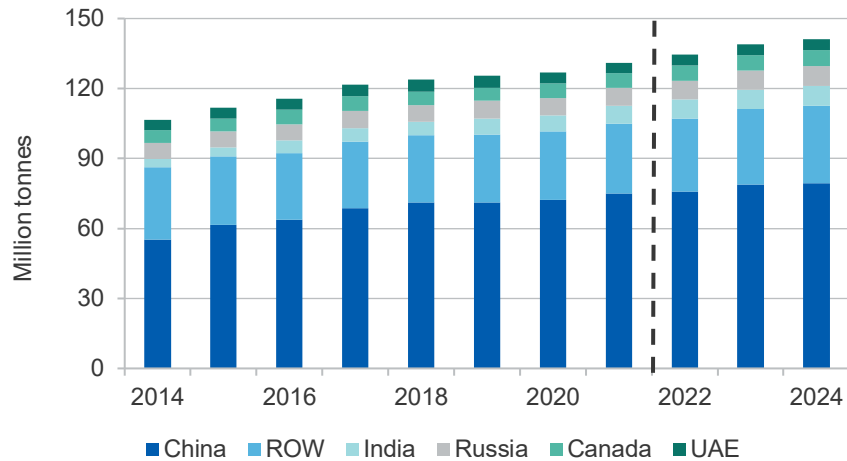
Outside of China, alumina consumption in India and the UAE rose by 7.1% and 7.2%, to reach 2.0 and 1.2 million tonnes in the March quarter 2022, respectively.

World bauxite usage fell by 0.3% year-on-year in the March quarter 2022 to 88 million tonnes due to a fall in global alumina production (down 0.2% in the March quarter 2022). China remained the world's largest bauxite consuming country, accounting for 51% of global bauxite consumption.

COVID-19 lockdowns in China slow global primary aluminium consumption

Slowing global economic growth and China's COVID-19 containment measures are likely to affect world primary aluminium consumption in the second half of 2022.

Figure 11.2: World alumina consumption



Notes: ROW: Rest of the world

Source: Department of Industry, Science and Resources (2022)

In China, aluminium demand in the consumer goods sector has been affected by the lockdowns, with Chinese consumers becoming more cautious in their spending. The Chinese construction sector is expected to remain subdued, despite the Chinese Government's relaxation of house resale constraints, home buying restrictions and reduction in down payment ratios. However, the RMB 60 billion tax cut on passenger car purchases announced on 23 May 2022 is likely to provide some support for the Chinese automotive industry.

Outside of China, the European automotive industry is feeling the impacts of supply chain problems. German car production fell by 12% year-on-year in the March quarter 2022. The German Automotive Industry Association has downgraded its car production growth forecast for 2022 from 13% to just 7.0% (or 3.3 million vehicles).

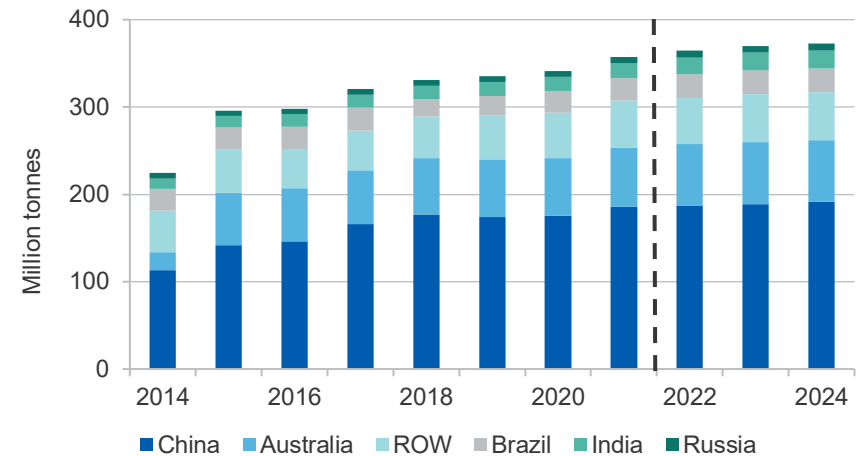
The US economy continues to face supply chain problems and labour shortages. There are growing signs that a slowdown in the construction activity in the US is likely in the second half of 2022.

Global primary aluminium consumption is estimated to decrease by 3.5% in 2022, to 66 million tonnes (Figure 11.1).

World alumina usage is estimated to increase by 2.8% in 2022 to nearly 135 million tonnes (Figure 11.2). An expected 1.8% rise in global primary aluminium production in 2022 is likely to lift global alumina demand. China is expected to contribute strongly to the growth in global alumina demand, with an estimated 1.8% rise in primary aluminium production in 2022.

World bauxite usage is estimated to grow by 1.7% in 2022 to 364 million tonnes (Figure 11.3). The gains are expected to be driven by higher alumina output from Australia, India and Jamaica.

Figure 11.3: World bauxite consumption



Notes: ROW: Rest of the world

Source: Department of Industry, Science and Resources (2022)

Beyond 2022, world primary aluminium consumption is forecast to grow at an annual average rate of 1.6%, to reach 68 million tonnes by 2024 (Figure 11.1). A significant driver of aluminium demand is expected to come from cars, particularly energy-efficient vehicles and electric vehicles (EVs) — which contain a higher proportion of aluminium. It is estimated that EV sales will rise from 6.6 million units in 2021 to 16.2 million units in

2024. With an estimated average aluminium content of 250 kilograms per electric vehicle, aluminium usage in EVs is forecast to increase from 1.6 million tonnes in 2021 to about 4.1 million tonnes in 2024.

World alumina usage is forecast to rise at an average annual rate of 2.5% over the outlook period, reaching 141 million tonnes by 2024 (Figure 11.2). Alumina demand is driven by primary aluminium production, which is forecast to lift by an average of 3.0% a year between 2023 and 2024.

World bauxite usage is forecast to grow at an average annual rate of 0.9% over the outlook period to 370 million tonnes in 2024 (Figure 11.3). The gains are expected to be largely driven by higher alumina output from existing refinery capacities in China and India.

11.3 World production

Aluminium and bauxite output grew, but March quarter alumina output fell

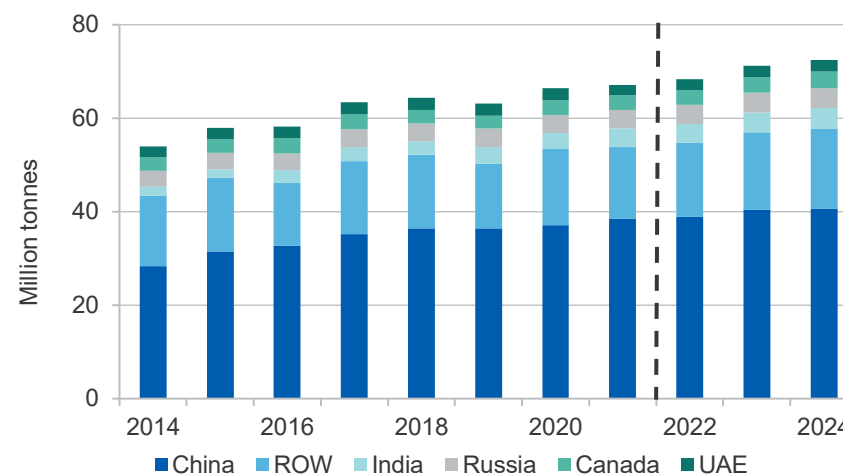
World primary aluminium production increased by 1.7% year-on-year to 17 million tonnes in the March quarter 2022, propelled by higher output in China — the world’s largest aluminium producer. China produced nearly 9.9 million tonnes of primary aluminium in the March quarter 2022, up by 1.0% year-on-year, driven by higher aluminium prices and a removal of restrictions on power consumption.

Primary aluminium production in Canada grew by 2.0% year-on-year to 818,000 tonnes in the March quarter 2022. The growth was driven by the ramp up of production at the Alouette aluminium smelter (600,000 tonnes a year).

World primary aluminium output is estimated to grow by 1.8% year-on-year to 68 million tonnes in 2022 (Figure 11.4). The gain is expected to be driven by higher output from China, India and Australia.

China’s primary aluminium output is forecast to reach 39 million tonnes in 2022, up 1.0% year-on-year, driven by improved power availability. Most aluminium smelters in Yunnan province have resumed their capacity following the power restrictions in 2021.

Figure 11.4: World primary aluminium production



Notes: ROW: Rest of the world

Source: World Bureau of Metals Statistics (2022); Macquarie (2022); Department of Industry, Science and Resources (2022)

Yunnan Aluminium’s 500,000 tonnes a year Wenshan aluminium smelter has resumed operation (at 450,000 tonnes a year) in April 2022, and is expected to reach full capacity in May 2022. The 1.0 million tonnes a year Yunnan Hongtai aluminium smelter reached 600,000 tonnes a year capacity in April 2022, and is expected to reach full capacity in the second half of 2022. Baise Mining’s 300,000 tonnes a year Xinshan and 200,000 tonnes a year Suyuan aluminium smelters are expected to resume full operations by September 2022 following COVID-19 related closures in February 2022.

Outside of China, primary aluminium production in India is forecast to increase by 2.0% year-on-year to reach 4.0 million tonnes in 2022.

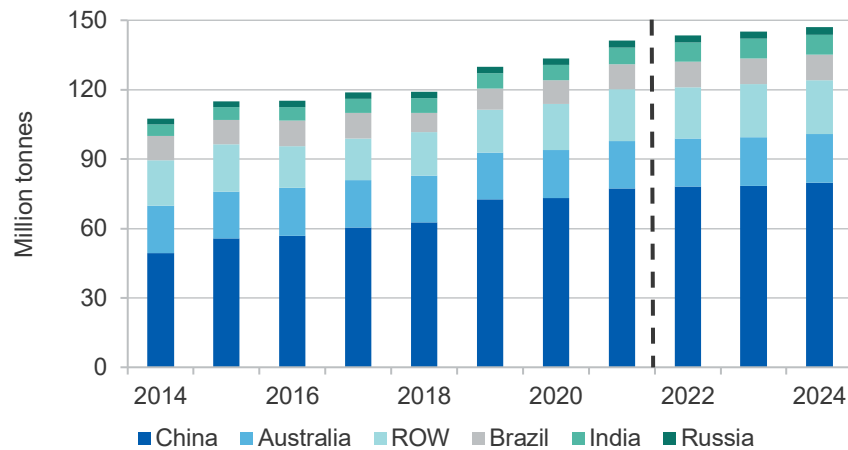
In Australia, Alcoa Corporation is scheduled to restart idled capacity at its 35,000 tonnes a year Portland Aluminium smelter in Victoria from the September quarter 2022. The reactivated capacity is expected to raise Australian primary aluminium output to 1.6 million tonnes a year.

World alumina supply fell by 0.2% year-on-year in the March quarter 2022 to nearly 35 million tonnes, as China's COVID-19 containment measures affected that nation's alumina refinery output. Over this period, production in China — the world's largest alumina producer — fell by 3.2% year-on-year to nearly 19 million tonnes.

World alumina output is estimated to grow by 1.4% year-on-year to 143 million tonnes in 2022, driven by rising output from the restart of existing refineries in Jamaica and India (Figure 11.5).

Production at General Alumina Jamaica and Noble's 1.4 million tonnes a year Mt Jamalco refinery in Jamaica is expected to restart in late 2022, after a fire incident in August 2021 caused extensive damage.

Figure 11.5: World alumina production

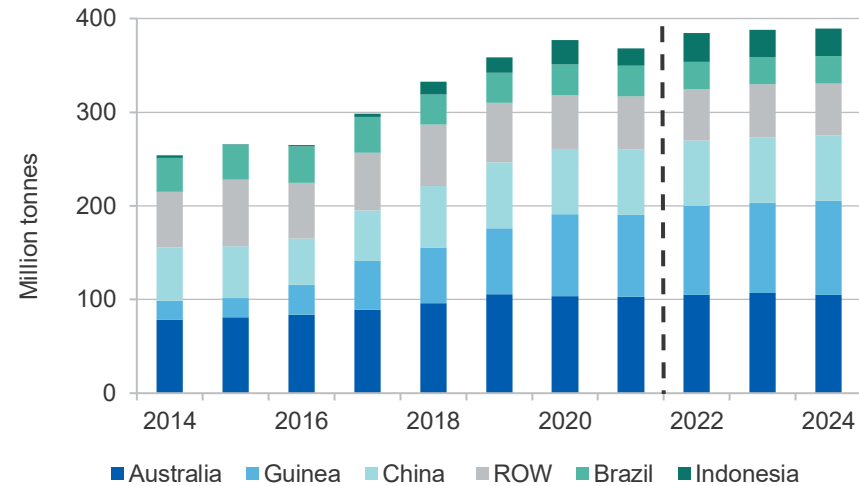


Notes: ROW: Rest of the world

Source: World Bureau of Metals Statistics (2022); Macquarie (2022); Department of Industry, Science and Resources (2022)

India's alumina output is forecast to rise by 18% year-on-year to 8.2 million tonnes in 2022. Hindalco's Utkal Alumina Refinery has fully ramped up its production to 2.1 million tonnes a year in the March quarter 2022, with an additional 350,000 tonnes expansion underway via debottlenecking.

Figure 11.6: World bauxite production



Notes: ROW: Rest of the world

Source: World Bureau of Metals Statistics (2022); Department of Industry, Science and Resources (2022)

World bauxite supply increased by 8.8% year-on-year in the March quarter 2022, to nearly 99 million tonnes, driven by higher output in Australia and Guinea — the world's two largest bauxite producing countries. Over this period, production in Australia rose by 0.9% year-on-year to 25 million tonnes, propelled by higher output at the Northern Territory's Gove mine.

Over this period, bauxite production in Guinea increased by 14% year-on-year to 27 million tonnes, as the ramp up of production continued.

World bauxite supply is estimated to rise by 4.2% to 384 million tonnes in 2022, driven by higher production in Guinea (up 9.1% to 95 million tonnes) (Figure 11.6).

In Guinea, the Compagnie des Bauxites de Guinée mine is due to expand further to 28 million tonnes by the end of 2022, after expanding from 13 to 18 million tonnes a year in 2019. Emirates Global Aluminium is also ramping up output at its 12 million tonnes a year bauxite mine in Guinea.

Aluminium, alumina and bauxite output set to rise over the outlook period

World primary aluminium production is forecast to increase at an average annual rate of 3.0% in 2023 and 2024, to reach 72 million tonnes by 2024 (Figure 11.4). The gains are expected to be driven by increased aluminium output from China and Indonesia. After a 1.0% gain in 2022, China's primary aluminium output is forecast to expand by 4.0% in 2023 to over 40 million tonnes, followed by a further 0.5% growth in 2024.

In Indonesia, the first phase (500,000 tonnes) of the 1 million tonnes a year Huaqing aluminium project in the Qingshan Industrial Park on Sulawesi Island is expected to come online by the end of 2022. The completion date of the 500,000 tonnes a year second phase is uncertain.

World alumina output is forecast to increase by 1.4% a year over the outlook period, reaching 147 million tonnes by 2024 (Figure 11.5). The gains are forecast to be driven by China, Australia, India, Indonesia, and other small alumina refining nations.

China Aluminium Company and the Indonesian joint-venture partners' 2 million tonnes a year Mempawah alumina refinery in Indonesia is expected to come online in 2024.

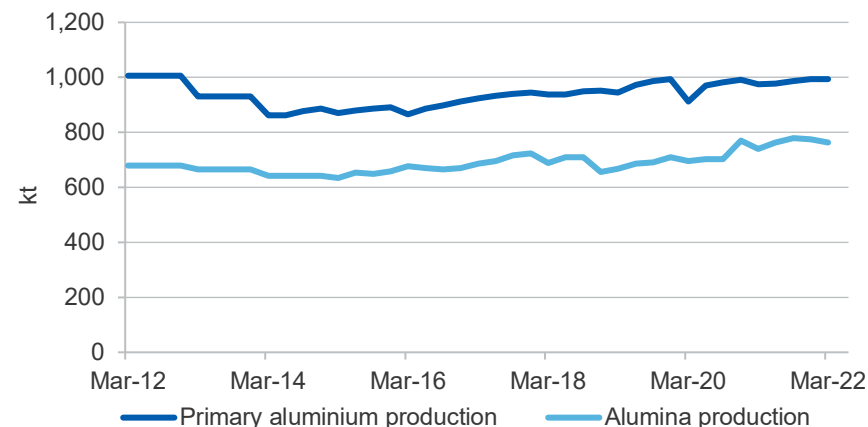
After 2022, world bauxite production is forecast to increase by 0.7% a year over the outlook period, reaching 389 million tonnes by 2024 (Figure 11.6). Australia and Guinea are expected to contribute most to this rise.

Russian aluminium and alumina production rose in the March quarter 2022

In the March quarter 2022, Russian primary aluminium and alumina output rose by 2.0% and 3.1% year-on-year to 994,000 and 763,000 tonnes, respectively (Figure 11.7). The gradual commissioning of Rusal's 429,000 tonnes a year Taishet aluminium smelter was the driver of the increased aluminium production.

Chinese alumina traders ramped up sales of alumina to Russia in the June quarter 2022. Around 30,000 tonnes of alumina were shipped from China to Russia in March, and sales could reach as much as 200,000 tonnes of alumina for April and May.

Figure 11.7: Russian aluminium and alumina output



Source: World Bureau of Metals Statistics (2022)

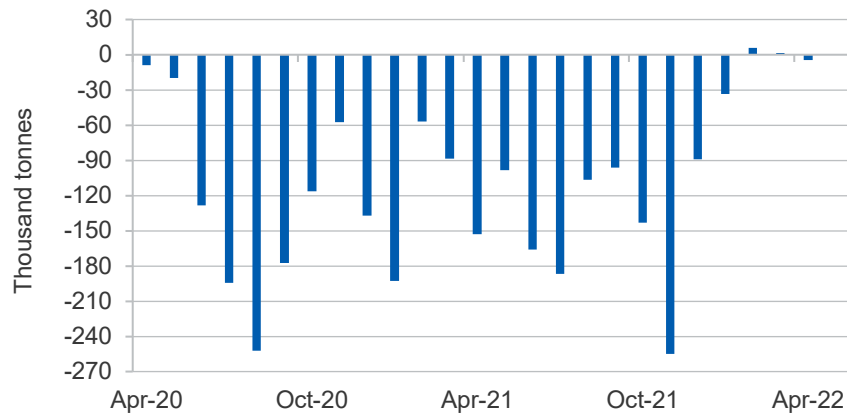
China has become a net exporter of primary aluminium

International sanctions against Russia and COVID-19 containment measures in China, appear to have changed China's status from being a net importer to a net exporter of primary aluminium. In February and March 2022, China's net exports of primary aluminium were 5,665 and 1,343 tonnes, respectively (Figure 11.8).

With China's domestic primary aluminium demand taking a hit — due to COVID-19 containment measures in major cities — the nation's surplus aluminium was exported into a tight world market (Figure 11.9). This included increased shipments to Europe, where primary aluminium production has been adversely impacted by high power prices — with many aluminium smelters operating at reduced capacity. In April 2022, China exported 2,720 tonnes of primary aluminium to the Netherlands.

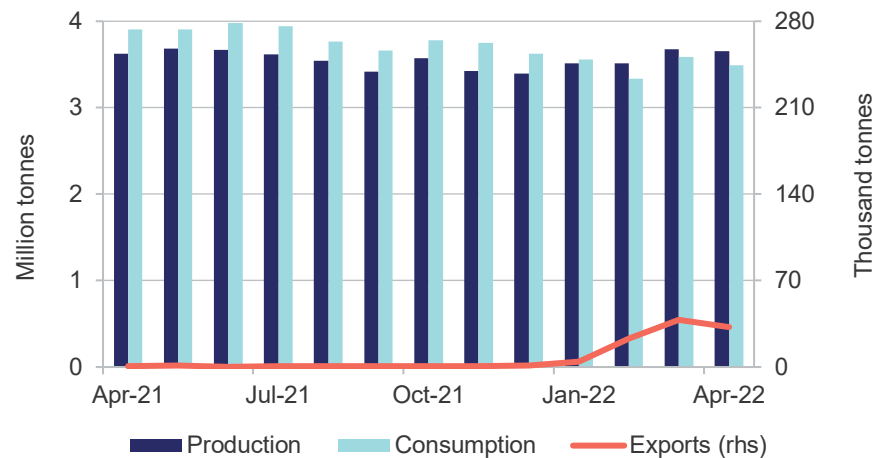
In March 2022, China exported 38,203 tonnes of primary aluminium to the world, of which 18,860 tonnes (49%) were exported to the Netherlands. In February 2022, China exported 17,926 tonnes of primary aluminium to Montenegro and 3,791 tonnes of primary aluminium to Italy.

Figure 11.8: China's net imports/exports of primary aluminium



Notes: Monthly data. Negative means net imports. Positive means net exports.
Source: China Customs (2022); Department of Industry, Science and Resources (2022).

Figure 11.9: China's primary aluminium production, consumption and exports



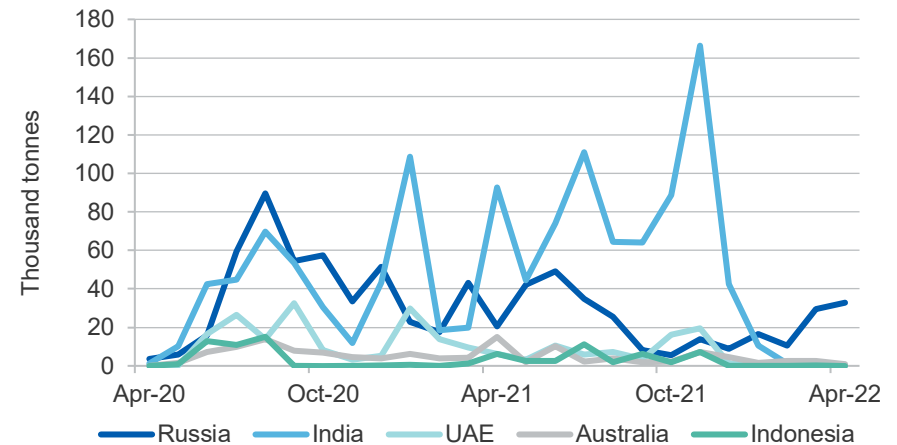
Notes: Monthly data
Source: China Customs (2022); World Bureau of Metals Statistics (2022); Department of Industry, Science and Resources (2022).

China traditionally imports primary aluminium from over 30 countries to meet its domestic primary aluminium demand. Russia, India, the UAE, Australia and Indonesia are the major suppliers of primary aluminium to China.

In the first four months of 2022, China imported 13,004 tonnes of primary aluminium from India — compared to 361,693 tonnes in the last four months of 2021. China imported 7,741 tonnes of primary aluminium from Australia — compared to 15,669 tonnes in the last four months of 2021. Over this period, primary aluminium imports from the UAE and Indonesia also fell sharply (Figure 11.10).

China's imports of Russian primary aluminium have increased significantly so far in 2022: from 36,800 tonnes in the last four months of 2021, imports rose to 89,369 tonnes in the first four months of 2022 (Figure 11.10). The imports are likely to rise further over the forecast period, as the OECD ceases buying Russian aluminium.

Figure 11.10: China's primary aluminium import sources



Notes: Monthly data
Source: China Customs (2022); Department of Industry, Science and Resources (2022)

11.4 Prices

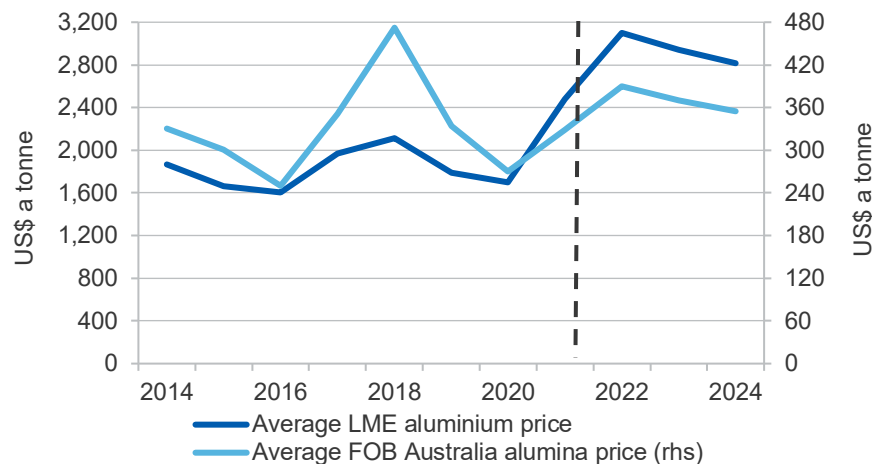
Russia's invasion of Ukraine pushed aluminium prices to a 34-year high

The London Metal Exchange (LME) spot price for primary aluminium reached a 34-year high of US\$3,985 a tonne on 7 March 2022, as the market reacted to the Russian invasion of Ukraine. Russia is the world's third largest primary aluminium producer and the world's third largest primary aluminium exporter.

The price has since fallen sharply due to growing concerns about the impacts of China's ongoing COVID-19 containment measures. China is the world's largest consumer of primary aluminium. At US\$2,520 a tonne on 21 June 2022, the LME aluminium spot price has decreased by 11% so far in 2022, compared to an average of US\$2,705 a tonne in H2 2021.

LME stocks reached a 24-year low in May 2022, at 458,875 tonnes, and remained low at 395,575 tonnes in June 2022. Shanghai Futures Exchange stocks fell to a 5-month low in May 2022, at 285,567 tonnes, and remained low at 267,337 tonnes in June 2022 (Figure 11.12).

Figure 11.11: World primary aluminium and alumina prices



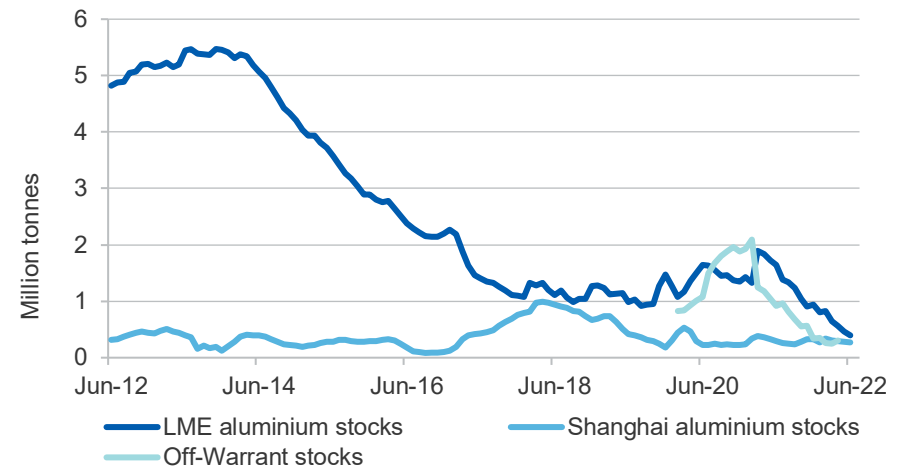
Source: LME (2022); Bloomberg (2022); Department of Industry, Science and Resources

In March 2022, LME off-warrant stocks fell to their lowest level since the data was first released in early 2020, at just 247,756 tonnes (Figure 11.12).

In 2022, the LME aluminium spot price is estimated to average US\$3,100 a tonne, a rise of 25% year-on-year (Figure 11.10). Russia's decision to halt gas supplies to Poland and Bulgaria in April 2022 has fuelled fresh concerns that the supply cut will be applied to other European countries. This would create risks of further cuts to European aluminium smelting production and push up primary aluminium prices.

China's demand for primary aluminium is expected to rise in the second half of 2022, on the back of an expected easing of COVID-19 restrictions. On 29 April 2022, in a meeting of the Communist Party's Politburo, the Chinese Government pledged to deliver more economic stimulus with a CNY 4.0 trillion infrastructure program. The Chinese Government has also relaxed regulations on the housing market and lowered interest rates for first home buyers. These decisions are likely to provide support to primary aluminium prices.

Figure 11.12: Exchange aluminium stocks



Source: London Metal Exchange (2022); Bloomberg (2022)

Inflation, rising interest rates and weakening global economic growth remain risks to aluminium prices over the outlook period. Higher inflation rates have forced central banks around the world to increase interest rates, which are likely to have dampened effects on economic activities.

The free on board (FOB) Australian alumina price has increased 5.8% so far in 2022, at US\$365 a tonne on 22 June 2022 — compared to an average of US\$367 a tonne in the second half of 2021. The rise in alumina prices has been driven by higher demand in China. In southern China, the commissioning of a new aluminium smelting capacity in Yunnan province has led to strong demand for alumina.

The FOB Australian alumina price is estimated to increase by 19% year-on-year to average US\$390 a tonne in 2022, driven by increased aluminium production in China (Figure 11.10).

Primary aluminium and alumina prices to fall in 2023 and 2024

After 2022, the LME aluminium price is forecast to drift down to an average of US\$2,940 and US\$2,815 a tonne in 2023 and 2024, respectively (Figure 11.10). Despite this fall, primary aluminium prices are expected to remain at relatively high levels, as growing demand for new, energy-efficient cars and technologies supports aluminium usage. As a result, the FOB Australian alumina price is forecast to fall to US\$355 a tonne in 2024 (Figure 11.10).

11.5 Australia’s exports and production

Higher aluminium prices drove exports in the March quarter 2022

Australia’s aluminium, alumina and bauxite (AAB) exports increased by 33% year-on-year in the March quarter 2022 to \$3.8 billion, driven by higher primary aluminium prices. A 56% year-on-year rise in the LME aluminium price in the March quarter 2022 helped boost Australian primary aluminium export values by 60% year-on-year to \$1.4 billion in the March quarter 2022. Over this period, primary aluminium exports to Japan and South Korea rose by 79% and 122% year-on-year to \$409 million and \$295 million, respectively, as more energy efficient car models require higher aluminium content.

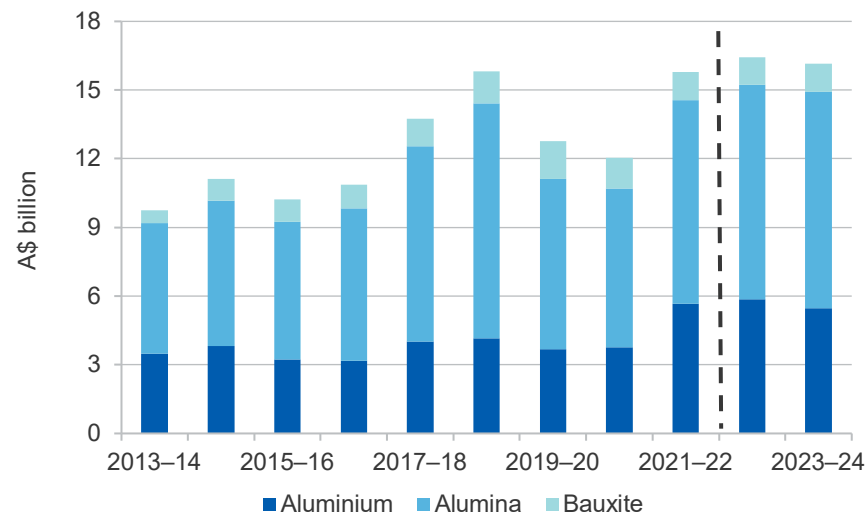
Australian alumina export values rose by 29% year-on-year to nearly \$2.2 billion in the March quarter 2022, driven by a 33% year-on-year rise in alumina prices in the March quarter 2022. Alumina export volumes were down by 5.9% year-on-year to 4.1 million tonnes in the March quarter 2022.

Australian bauxite export values decreased by 18% year-on-year to \$253 million in the March quarter 2022, despite a 4.9% year-on-year rise in bauxite export volumes.

A strong earning year for Australia’s AAB exports in 2021–22

An expected gain in average aluminium and alumina prices in 2022 is likely to provide additional earnings for Australian aluminium smelters, alumina refiners and bauxite miners. Australia’s AAB exports are estimated to have increased by 31% in 2021–22 to nearly \$16 billion (Figure 11.13).

Figure 11.13: Australian aluminium/alumina/bauxite exports



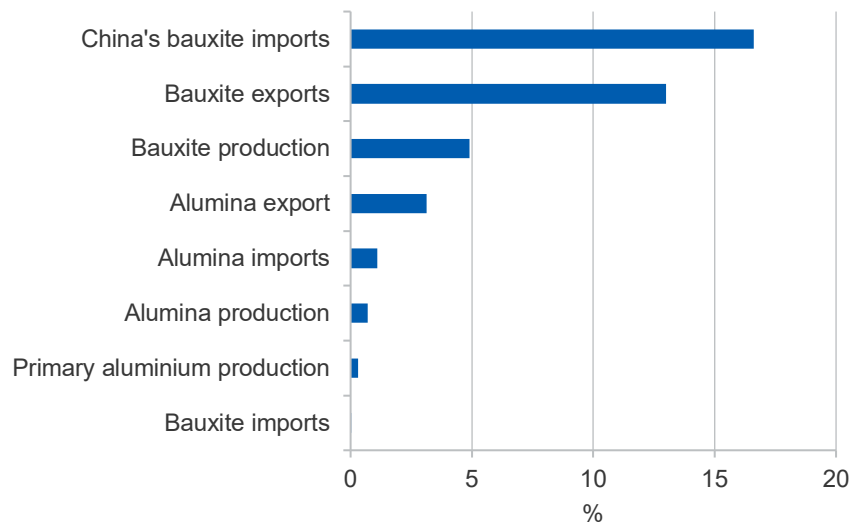
Source: ABS (2022) International Trade in Goods and Services, 5368.0; Department of Industry, Science and Resources.

Steady alumina, aluminium and bauxite export earnings after 2021–22

Over the outlook period, Australia's AAB exports are forecast to be steady, at \$16 billion a year, with the prices of primary aluminium forecast to remain relatively high over the outlook period (Figure 11.14).

The Indonesian Government has indicated that its bauxite export ban will commence in the second half of 2022 — though the exact timing of this is unknown. The move is likely to provide Australian bauxite exporters with greater opportunities to fill the gap in the Chinese bauxite market, with Indonesia being China's third largest bauxite import source, accounting for nearly 17% of China's total bauxite imports (Figure 11.14).

Figure 11.14: Indonesia's share of global primary aluminium, alumina and bauxite production, exports and imports



Notes: Indonesia's primary aluminium exports and imports are not available.

Source: World Bureau of Metals Statistics (2022); Bloomberg (2022)

Australia's alumina/aluminium/bauxite production fell in the March quarter

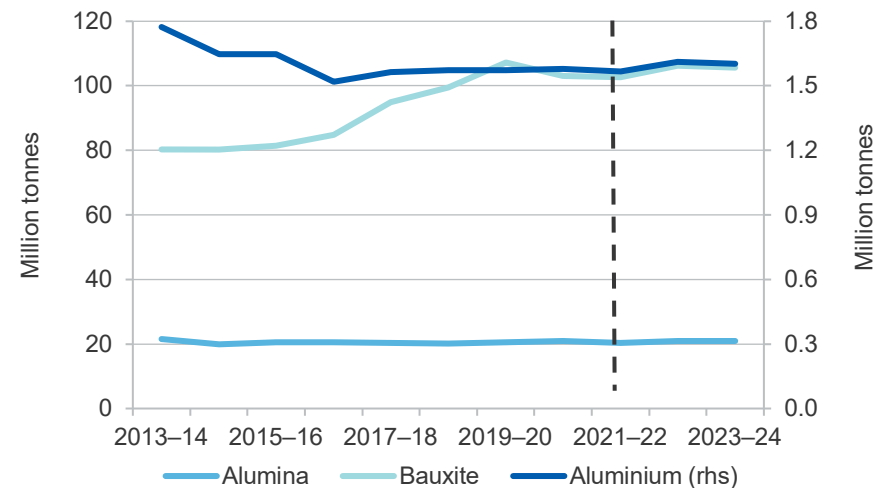
Australia's primary aluminium production fell by 2.0% year-on-year in the March quarter 2022 to 381,000 tonnes, due to lower production at Portland Aluminium. Australia's alumina output fell by 3.1% year-on-year in the March quarter 2022 to 4.9 million tonnes. The fall was due to the unplanned outages at Rio Tinto's refining operations in Queensland.

Australia's bauxite production fell by 0.4% year-on-year in the March quarter 2022 to 25 million tonnes due to lower production at Boddington bauxite mine in WA and Weipa bauxite mine in Queensland.

Steady aluminium, alumina and bauxite output over the outlook period

On 7 November 2021, Alcoa announced a restart of 35,000 tonnes a year idled capacity at its Portland Aluminium smelter in Victoria. The reactivated capacity is expected to come online in the September quarter 2022, and will bring Australia's primary aluminium output to 1.6 million tonnes a year from 2022–23 and beyond (Figure 11.15).

Figure 11.15: Australian alumina/aluminium/bauxite output



Source: Department of Industry, Science and Resources (2022)

No expansions or major disruptions are expected at existing alumina operations in Australia over the outlook period. Australia's alumina output is forecast to remain at about 21 million tonnes a year over this time. Australia's bauxite output is forecast to increase at 1.0% a year between 2022–23 and 2023–24, reaching 106 million tonnes in 2023–24 (Figure 11.15).

High levels of rainfall over the rest of 2022 pose some downside risk to forecast AAB volumes. In its March 2022 quarterly report, Rio Tinto advised that the bauxite production remains subject to severe weather conditions.

On 20 February 2022, Rio Tinto entered into a partnership with the Tasmanian Government to progress an initiative to accelerate the decarbonisation of its Bell Bay aluminium smelter in Tasmania.

On 9 June 2022, Rio Tinto called for proposals to develop large scale wind and solar power in central and southern Queensland to power its Boyne aluminium smelter, Yarwun alumina refinery and Queensland alumina refinery. Despite it being early in the process, the initiative is likely to help Rio Tinto to meet its climate change commitments.

It was announced in March 2021 that Mitsubishi would buy a 30% stake in Glencore's Aurukun bauxite project in Queensland. The project has long been postponed after initially receiving mining rights in the 1970s. A final investment decision to develop the project is expected to be made in the second half of 2022.

Revisions to the outlook

The forecast for Australia's AAB export earnings has been revised down from the March 2022 *Resources and Energy Quarterly* — by \$653 million in 2021–22. The revision reflects larger than expected impacts of China's COVID-19 containment measures on Australian primary aluminium and bauxite exports in the March quarter 2022. We now expect 2022–23 earnings to be \$16.4 billion, compared to \$16.6 billion in the March 2022 *Resources and Energy Quarterly*. The change is due to lower AAB export earnings.

Table 11.1: Aluminium, alumina and bauxite outlook

World	Unit	2021	2022 ^f	2023 ^f	2024 ^f	Annual percentage change		
						2022 ^f	2023 ^f	2024 ^f
Primary aluminium								
Production	kt	67,126	68,309	71,190	72,415	1.8	4.2	1.7
Consumption	kt	68,387	65,969	66,891	68,038	-3.5	1.4	1.7
Prices aluminium^c								
- nominal	US\$/t	2,477	3,100	2,940	2,815	25.2	-5.2	-4.3
- real ^d	US\$/t	2,669	3,100	2,858	2,676	16.2	-7.8	-6.4
Prices alumina spot								
- nominal	US\$/t	328	390	370	355	18.8	-5.0	-4.2
- real ^d	US\$/t	354	390	360	337	10.2	-7.6	-6.3
Australia	Unit	2020–21	2021–22^s	2022–23^f	2023–24^f	2021–22^s	2022–23^f	2023–24^f
Production								
Primary aluminium	kt	1,579	1,565	1,610	1,603	-0.9	2.9	-0.4
Alumina	kt	20,949	20,364	20,906	21,011	-2.8	2.7	0.5
Bauxite	Mt	103.0	102.6	106.2	105.7	-0.4	3.5	-0.4
Consumption								
Primary aluminium	kt	284	255	209	208	-9.9	-18.2	-0.3
Exports								
Primary aluminium	kt	1,357	1,385	1,449	1,443	2.0	4.7	-0.4
- nominal value	A\$m	3,763	5,672	5,872	5,470	50.7	3.5	-6.8
- real value ^e	A\$m	3,926	5,672	5,609	5,059	44.5	-1.1	-9.8
Alumina	kt	18,600	17,792	18,188	18,280	-4.3	2.2	0.5
- nominal value	A\$m	6,948	8,893	9,356	9,450	28.0	5.2	1.0
- real value ^e	A\$m	7,249	8,893	8,938	8,739	22.7	0.5	-2.2
Bauxite	kt	35,782	35,627	35,128	34,971	-0.4	-1.4	-0.4
- nominal value	A\$m	1,339	1,212	1,211	1,219	-9.5	0.0	0.6
- real value ^e	A\$m	1,397	1,212	1,157	1,127	-13.3	-4.5	-2.6
Total value								
- nominal value	A\$m	12,050	15,777	16,440	16,139	30.9	4.2	-1.8
- real value ^e	A\$m	12,573	15,777	15,704	14,925	25.5	-0.5	-5.0

Notes: **c** LME cash prices for primary aluminium; **d** In 2022 calendar year US dollars; **e** In 2021–22 financial year Australian dollars; **f** Forecast; **s** Estimate
Source: ABS (2022) International Trade in Goods and Services, 5464.0; LME (2022); Department of Industry, Science and Resources (2022); World Bureau of Metal Statistics (2022).