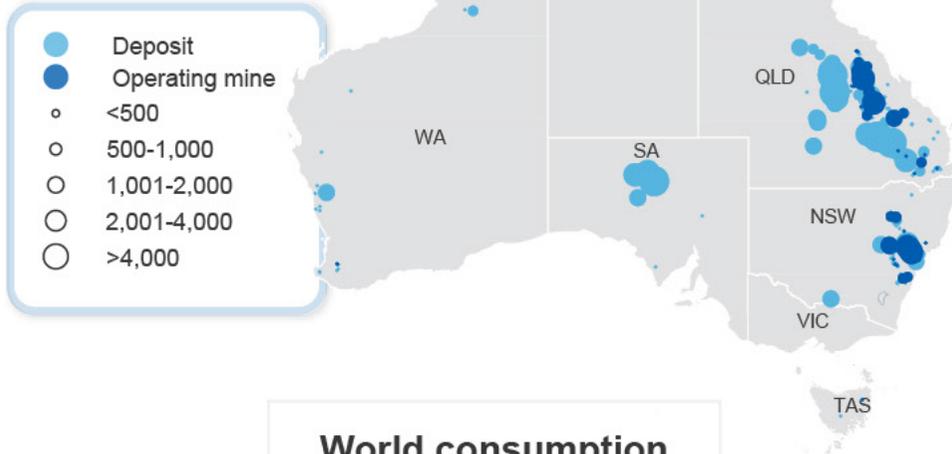
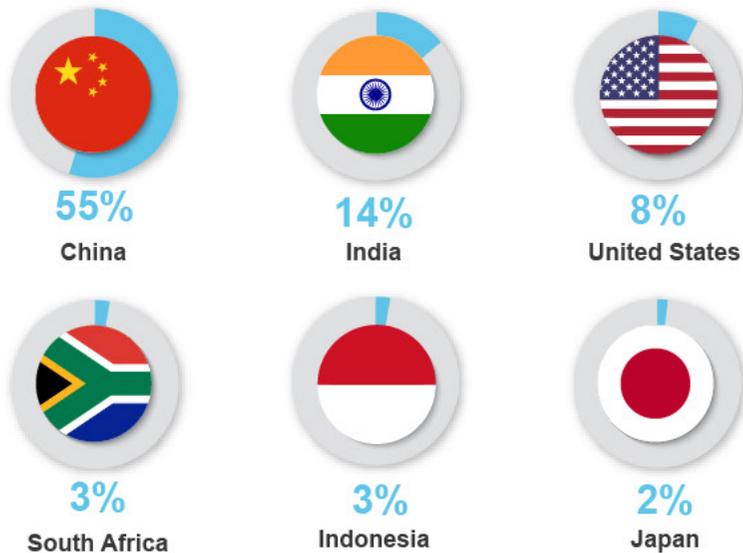


Thermal coal

Major Australian coal deposits (Mt)



World consumption



Thermal coal



Thermal coal is primarily used in electricity generation

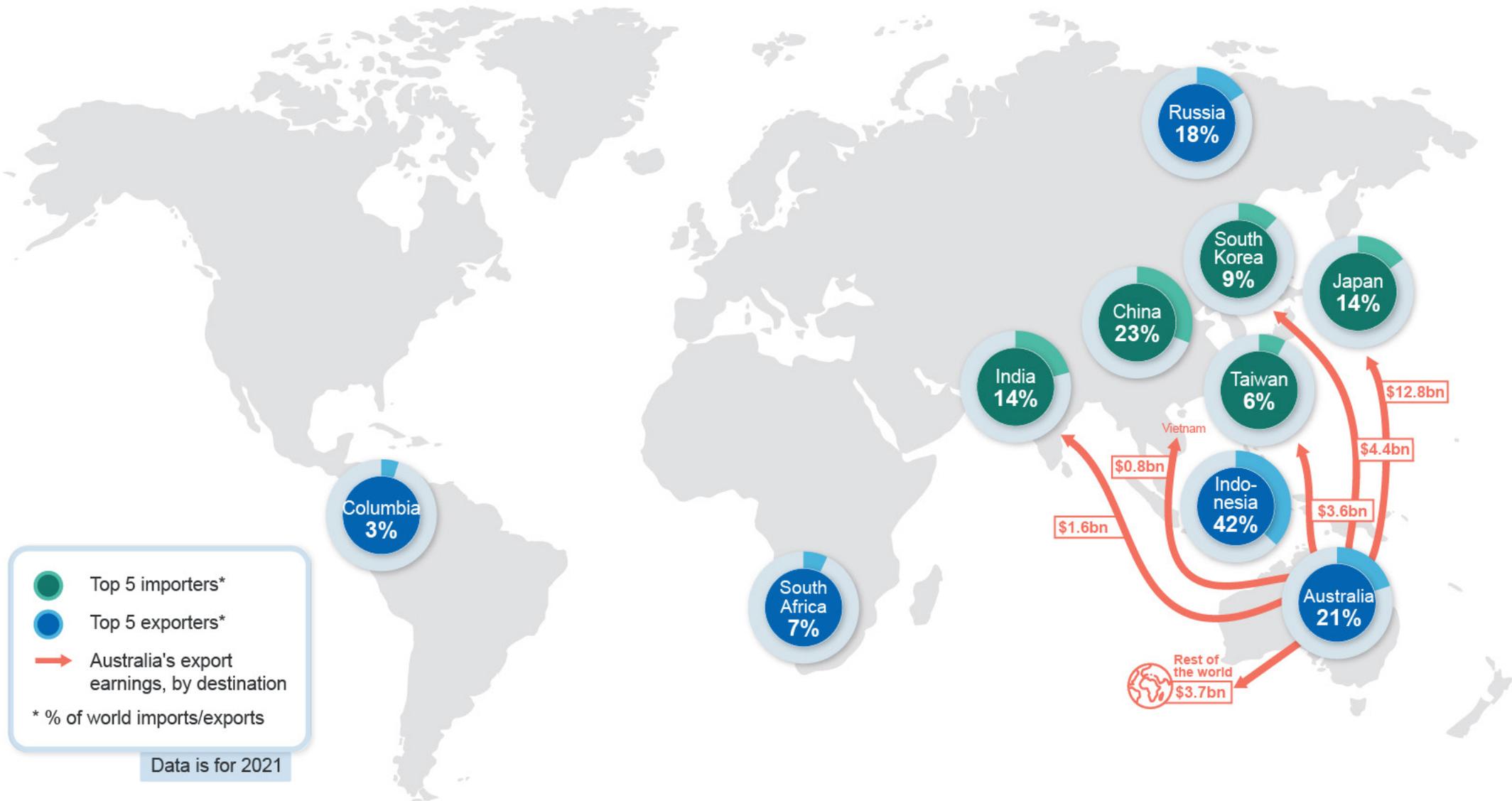
Coal supplies over one-third of global electricity generation

Mines are open cut or underground depending on the geology of the deposit

Coal formation began 290-360 million years ago

Australia's thermal coal





6.1 Summary

- Global thermal coal spot prices have spiked, as increasing Chinese demand coincides with weather disruptions, supply impacts from COVID-19 outages, and the fallout from the Russian invasion of Ukraine. As more normal conditions return, the Newcastle benchmark price is forecast to ease from a peak of US\$184 a tonne in 2022 to around US\$60 a tonne by 2027 (in real terms).
- Australian thermal coal exports declined from 213 million tonnes in 2019–20 to 192 million tonnes in 2020–21, but are expected to recover back to a 204–207 million tonne range over the forecast period.
- Surging prices are expected to push export values to a peak of \$45 billion in 2021–22, with a gradual (price-driven) easing to a more typical level of around \$15 billion (in real terms) by 2026–27.

6.2 World trade

Thermal coal markets are undergoing a complex transition. Prices have surged in recent months as demand outpaced supply, which remains disrupted among a range of major exporters. The long-term shift in demand sources away from OECD nations and towards Asia is accelerating, forcing markets to adjust. The global drive towards low-carbon energy sources and a sharp decline in the coal plant construction pipeline has changed incentives for investors and miners, deterring long term investment in coal despite the recent surge in prices.

The shift in coal demand away from OECD countries has gathered pace on a range on fronts. In the US, coal generation is declining at an accelerating rate amidst growing domestic competition from gas generation. Coal generation (currently around 210 GW) is expected to fall by more than 70GW over the outlook period, and by more than 130 GW by the early 2030s. More than 65 GW of coal plant retirements have already been announced.

Thermal coal imports to European nations are expected to decline particularly rapidly in the second half of the outlook period as coal plant retirements gather pace. Emissions levies and other government policies

have accelerated a pre-existing decline in coal use, leading numerous coal plants to close ahead of schedule.

Imports to Austria, Belgium and Sweden have fallen to virtually zero following the recent closure of the last power stations in each country. Denmark, Finland, Italy and Spain are expected to reduce imports to zero by the late 2020s, while the UK is on track to close its last coal power station in 2024. Germany closed 6GW of coal power in 2021, and current policy is likely to drive closure of another 2.5GW of coal power in the first half of the outlook period, with more to follow as the Government seeks to close all coal power by 2038.

In the short-term however, the Russian invasion of Ukraine is expected to delay some coal plant closures. Germany has closed nearly all of its domestic nuclear generation, making up the loss with imported Russian gas. The need to secure its energy supply is expected to lead to scheduled coal plant closures being delayed, and could even lead to some closed plants being temporarily re-opened.

However, broader conditions across the OECD remain difficult for coal, and these conditions are increasingly being mirrored among proximate countries subject to similar finance and investment pressures. In Egypt, construction of the massive (6.6 GW) Hamrawein coal plant has been placed on permanent hiatus, with coal imports now largely driven by the cement sector, which is seeking alternative power sources. In Israel, four of the six units of the Orot Rabin coal plant are scheduled to shut down in 2022, with the remaining two units expected to be substituted by gas generation from 2025. The Rutenberg coal plant is also on track to be replaced by gas generation from 2025. Coal imports to Israel are expected to fall to virtually zero by the end of the outlook period.

Turkey may prove to be an exception, with coal import demand likely to rise following completion of the Hunutlu coal plant in 2022. However, finance and investor pressure has resulted in delay and the potential cancellation of other potential coal plants, though the Turkish government has no official policy to phase out coal generation in the country. Coal imports to Turkey are expected to peak just beyond the outlook period.

Imports to Asia are expected to offset much of the decline elsewhere over the outlook period. The year 2030 looks to be a significant turning point, representing a coal power phase-out date for many OECD countries, but a peak demand date for a number of nations across Asia. The underpinning transition of energy sources across much of the world could lead to significant volatility in coal trade and coal prices in the interim.

High coal prices have not thus far prompted significant supply-side investment. The lack of investment in supply will make it harder for coal prices to correct, which may in turn reduce the competitiveness of coal and accelerate its structural decline. However, high coal prices should provide strong profits to existing coal producers and exporters, in turn benefiting regions which rely on them.

In volume terms, seaborne imports are estimated to have increased by 3% in 2021, with COVID-19 disruptions peaking late in the year. Thermal coal demand is expected to edge lower over the outlook period, with supply expected to largely track with demand after 2022 (Figure 6.1).

6.3 World imports

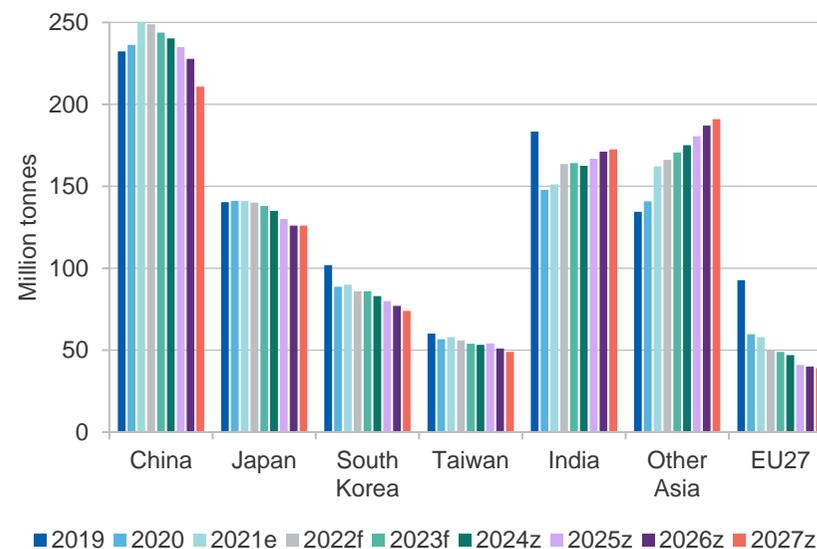
China's import price premium remains high as import restrictions persist

China's dominant share of global coal demand is expected to grow further over the coming years, with other South-East Asian countries cancelling a significant quantity of planned coal plant constructions at the COP26 conference. Subsequent agreements over the outlook period may lead to further reductions, though these would increasingly involve early closures of existing plants rather than cancellation of new ones.

Coal use in China is likely to remain strong, with the Government recently removing energy intensity goals from its energy targets. However, China also continues to seek ways to reduce its dependency on coal imports. This could come about through rising domestic production (China maintains a stronger investment climate for coal than many countries, and recorded solid growth in domestic output in January and February 2022). Recent measures also include expansion of 'coal by wire' proposals, which seek to convert a greater share of coal into electricity at mine sites,

enabling more efficient transmission through power grids. 'Blue skies' policies and commitments to attain net zero emissions by 2060 are also likely to drive more diversity into electricity markets, with efforts underway to substitute previously proposed coal expansions for nuclear- and LNG-fired power.

Figure 6.1: Thermal coal imports



Note: f Forecast; z Projection

Source: IHS (2022); IEA (2022) Coal Market Report; Department of Industry, Science, Energy and Resources (2022)

Some Chinese provinces have made additional commitments towards net zero targets. Hong Kong is converting its Lamma and Castle Peak coal plants to gas-fired plants, and may complete this process during (or shortly after) the outlook period. Coal imports to Hong Kong are expected to fall during the outlook period, ceasing entirely by the mid-2030s.

As 2021 turned, the Chinese Government permitted some Australian coal previously held in storage to enter its domestic supply chains. However, no cessation of present informal import restrictions is assumed during the

outlook period. With strong pressure now being applied to increase domestic coal output, Chinese imports are expected to decline from around 260 million tonnes in 2021 to 211 million tonnes by 2027. The Chinese Government remains committed to an emissions peak before 2030.

India's coal imports are expected to grow each year of the outlook period

Indian coal demand is expected to rise steadily over the outlook. However, the likely rate of growth has been revised down, with some coal plant proposals being recently shelved. Imports have picked up in recent months (Figure 6.2), and are expected to grow further over the outlook period — but at a lower rate than previously forecast.

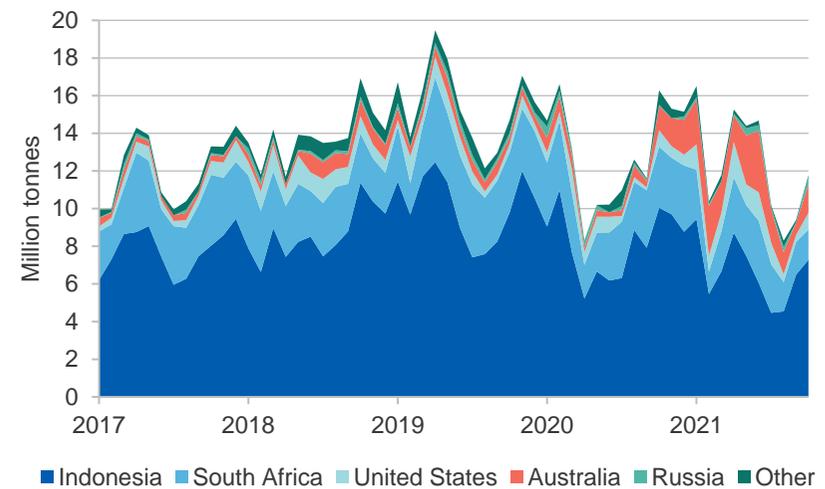
Part of the expected slowdown in import growth is a result of significant efforts by the Indian Government to expand domestic coal production. The Indian Government ran a series of auctions for coal blocks in 2021, with more than half of the 38 blocks being sold by the end of the year. Should work at the sites proceed on schedule, it is likely that new mines would begin to enter the domestic market from the mid-2020s.

Imports to India are projected to grow by around 20 million tonnes to 173 million tonnes by 2027, with growth slowing by the end of the outlook.

Japan's imports are expected to hold up for the next five years

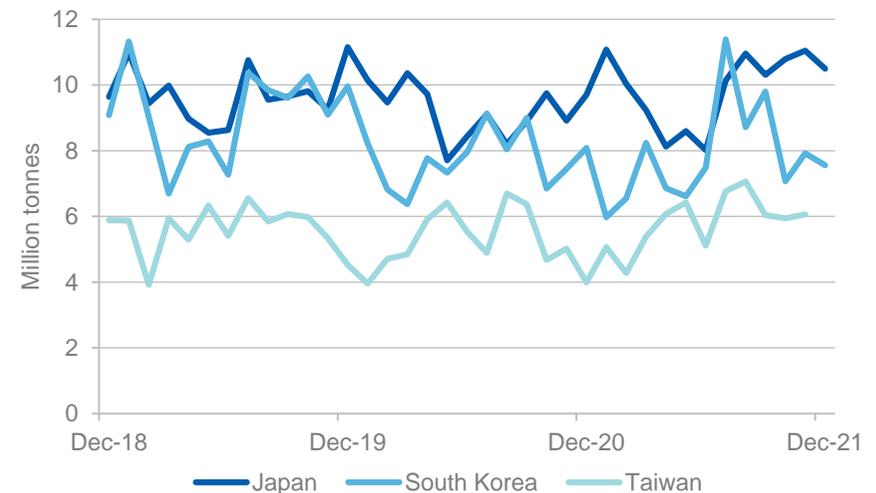
The Japanese government has committed to net zero emissions by 2050. This commitment is likely to lead to modest pressure on coal imports towards the end of the outlook period, though the country retains 14 coal plants under development. Japan has committed US\$70 billion over the next five years to assist regional countries accelerate their commitments to 'net zero', but this is not expected to affect its own import growth over the outlook period. Japan is also attempting to expand carbon capture and storage technology, which may enable a longer use of coal power consistent with net zero commitments.

Figure 6.2: India's thermal coal imports, monthly



Source: IHS (2022)

Figure 6.3: Japan, South Korea and Taiwan's thermal coal imports



Source: IHS (2022)

Japanese coal imports have levelled out in recent quarters (Figure 6.3) and are expected to ease slightly through the outlook period, with planned closures and new coal-fired power plant constructions largely offsetting each other. The slight shift down is expected to accelerate gradually over time as low-carbon energy generation picks up.

Reconnection of further nuclear plants represents a significant variable in the coal import outlook; the pace of connections remained relatively slow over 2021 due to additional safety requirements and political opposition. A continuation of this trend may help to support coal use through most, or all, of the outlook period.

South Korean coal imports will face growing pressure

In October 2021, the South Korean Government released a draft plan to reduce coal fired generation from around 42% of electricity generation (in 2018) to 22% (by 2030) and zero (by 2050). This builds on the existing Basic Energy Plan, which seeks to shut about half of the nation's 60 coal fired plants by 2034. Around half of this reduction in capacity is expected to be offset by new coal plants already under development. However, the greater efficiency of these plants should reduce import requirements over the course of the outlook period, with the scale of reduction picking up in the late 2020s.

Pressure may also come from South Korean gas plants. These plants have faced difficulty in recent years, due to being locked in to long-term high priced contracts for gas supply. By the second half of the outlook period, it is likely that these contracts will begin to reset, intensifying price competition with coal. Nuclear energy is not expected to expand its capacity significantly over the outlook period. However, the conclusion of scheduled maintenance at several nuclear plants in 2022 and 2023 may reduce some pressure on coal imports, as nuclear power is highly price competitive in South Korea.

Taiwan's imports are expected to start declining slowly

Taiwan has announced that it will cancel all coal plant construction, and reduce the coal share of its power generation from around 45% to 30% by

2025. The Taiwanese Government has also abandoned previous plans to upgrade its coal fleet — much of which was built 30-40 years ago — and to convert coal plants to use gas.

While Taiwan was excluded from participation in the COP26 summit, it has announced a recent Climate Change Response Act, which commits to carbon neutrality by 2050. Given the age of Taiwan's coal fleet, it is expected that coal imports will start to decline modestly during the outlook period, ahead of other countries in the region. However, this may be complicated by plans to downscale nuclear generation in Taiwan, which will add to the scale and difficulty of the energy transition required.

South East and South Asia imports are set to grow

Nations in South East and South Asia (excluding India) collectively import about 150 million tonnes of thermal coal each year. This sum is expected to rise over the next five years (Figure 6.4), with recent cuts in planned coal-fired power generation capacity not expected to have a measurable impact until the second half of the outlook period.

Malaysia has large and modern coal-fired power plants, which have managed to out compete gas-fired generation. These plants consolidated their advantage during the COVID-19 pandemic, as gas production was forced to cut back. Coal imports are expected to hold up and even grow slightly over the outlook period, peaking around 2030.

The Philippines is expected to require more coal over the outlook period, with significant coal fired capacity still under construction. Steady import growth is expected in every year of the outlook period. Around 10 coal plants face early closure risks, but the country retains a significant pipeline of coal constructions, and coal consumption is expected to peak (at double its current level) around 2030.

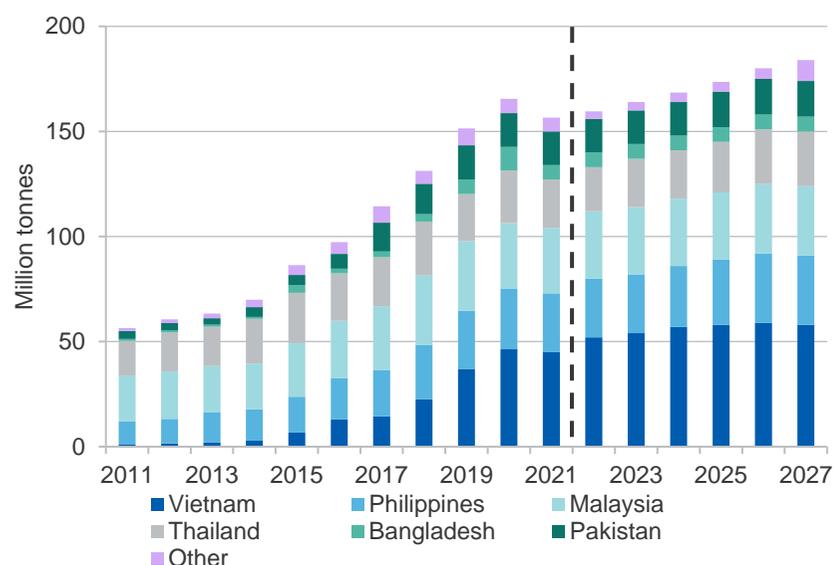
Coal imports to Thailand are rising in line with growing demand from the country's industrial sector, which has been led by rapid expansion in cement production. However, coal plant construction has largely come to a halt, with proposed plants cancelled in the Krabi and South Songkhla provinces. Coal power phase-outs are expected to start reducing imports

of coal by the end of the outlook period, with Thailand's latest Power Development Plan aiming to bring coal's share of power generation down by half (to 10%) by 2030.

Bangladesh has scaled back its coal plant proposals, with coal plant constructions pared down to 5 over the next 5 years. Like other countries in the region, Bangladesh is likely to see coal use peak close to 2030, with imports growing in the interim, albeit from a modest base.

The Pakistani Government has announced that no further coal plants will be developed, but how this declaration will apply to coal plants already approved (with some already construction) is not yet clear. Most coal plants under construction are expected to utilise domestic reserves, with only one proposed coal plant mooted to draw heavily on imports. Pakistani imports may, however, be supported by rising industrial activity.

Figure 6.4: South and South East Asia thermal coal imports



Source: IEA (2022) Coal Information; Department of Industry, Science, Energy and Resources (2022); IHS (2022)

Vietnam has scaled up coal imports over the last 10 years, as power demand lifts across the country. This demand has generally been met through imports from Indonesia, as Vietnamese deposits are mostly located under areas with dense population or intense rural activity, making access difficult.

Vietnam has introduced a range of environmental targets aimed at reducing carbon emissions, with the country targeting more deployment of renewable power firmed by gas. Coal plant constructions are expected to continue, though at a slower pace in the second half of the outlook period. Some coal plant constructions have fallen behind schedule due to constraints on global coal financing. However, power shortages are expected to add pressure, ensuring that the constructions continue. More than 7 GW of coal plants are expected to be built over the outlook period. Coal import growth is expected to continue, with some slowing from the mid-2020s and a peak around 2030.

6.4 World exports

Global supply chains have reorganised in the wake of Chinese informal import restrictions, with Australian product being fully redirected to other markets including India, Japan, South Korea, and Taiwan.

Indonesia, Russia and Australia remain dominant in global coal exports, with the former two nations being increasingly drawn to the Chinese market, filling the gap left by Australian supply.

Indonesia's exports are rising despite temporary disruptions

The Indonesian government temporarily banned coal exports in January 2022. This was done in response to supply shortages at domestic power plants, which had raised fears of possible blackouts. The decision coincided with rapid price rises, but the subsequent cessation of the ban has seen little correction. It thus appears that the overall market dynamic (of inadequate and disrupted global supply) remains largely unaltered by decisions in Indonesia. However, recent efforts by the Indonesian Government to contain exports could represent an ongoing upside risk to prices, as the country continues to require more coal for domestic use.

The rise in domestic coal use in Indonesia over time is likely to be significant. The country retains a large pipeline of proposed coal plants which, if fully constructed, would almost double domestic coal use from the current annual level of around 130 million metric tonnes.

Despite this, Indonesia has significant capacity to increase its exports. The country has large (albeit low quality) untapped deposits in the Kalimantan and Sumatra regions. Most of these deposits are easily accessible and close to infrastructure and ports. Commitments from the Indonesian Government at COP26 (which include scrapping future coal plant construction and potentially closing 5.5GW of existing coal plants) could also provide more space for exports. Exports picked up solidly in 2021, and are expected to hold steady over the rest of the outlook period, with production growth being diverted to meet rising domestic needs.

[Russia's exports face an uncertain time following the invasion of Ukraine](#)

Russian coal faces an uncertain outlook despite some recent recovery from weather disruptions and accidents in 2021. Russian coal is of high quality, but the placement of reserves in Southern Siberia makes it complex and costly to extract and ship. While Russian port capacity has expanded in recent years (from 36 million tonnes to 50 million tonnes annually), further growth in capacity is likely to be stymied by the invasion of Ukraine and the consequent sanctions, which have cut Russia off from imported equipment and reduced its purchasing power.

Demand-side impacts of the Russian invasion of Ukraine remain unclear. Some Russian rail shipments have been diverted to Poland, potentially delaying their transit or pushing them into the seaborne market. But overall trade is likely to continue given Russia's importance (supplying around 60 per cent of Europe's thermal coal imports). Coal has not yet been explicitly sanctioned, but the closure of ports to Russian vessels and a series of financial restrictions may affect shipment and trading indirectly. An expansion of sanctions from Europe could drive Russian coal to the Chinese market, likely with a price penalty. In the longer term, the high quality of Russian coal should provide a competitive advantage even as the global coal market shrinks from the mid-2020s.

[Colombian exports are not expected to recover fully](#)

Colombian exporters face particular difficulty in an environment of falling use among OECD nations, which has primarily affected the Atlantic market. Colombian producers have sought to expand into the Asian market in response, but falls in the closer Atlantic market are not expected to be fully substituted.

Significant mines, including La Jagua and Calenturitas, have been taken offline following falls in regional demand, and are not expected to return to full operation in the foreseeable future. The country's large Cerrejón and Drummond mines remain in operation, but the former continues to face disruptions — most recently to its export route — as a result of protests from indigenous communities and mine workers.

Exports fell sharply in 2020 (from 70 million tonnes to 29 million tonnes), and recovery is likely to prove difficult. A loss of traditional markets, and permanent closure of some mine sites, will likely prevent Colombian exports from ever returning to their pre-pandemic levels.

[US exports have picked up, but long-term cost challenges remain](#)

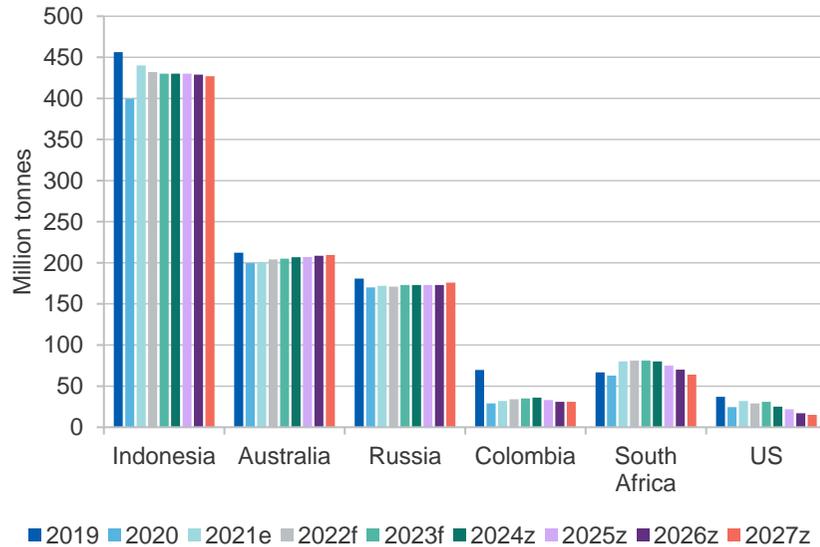
US coal exports face competitiveness issues due to long transportation distances (notably between Montana and export terminals in Vancouver, which requires rail shipment across the Canadian border). US coal also tends to be high in sulphur, requiring potential buyers to blend it or use it for industrial purposes. The Atlantic market, which is the main destination for most US coal, has faced steep demand falls in recent years.

Despite these challenges, strong rises in coal prices have improved the prospects for US coal producers, leading to some recent growth in output. Domestic demand and exports both rose following the recent surge in gas prices, and higher export volumes are expected to mostly hold up over the first half of the outlook period, with some easing in the second half.

In the longer term, the high-cost and marginal status of many US mines will likely oblige some producers to withdraw from the market as prices become weaker. Given the broader global trends, it is likely that mines

pushed out of the export market will close for good rather than remain in suspension. Falling domestic demand may also trigger further bankruptcies in the US coal sector, which has already faced significant closures and market exits over the past five years.

Figure 6.5: Thermal coal exports



Notes: e estimate f Forecast z Projection.

Source: IHS (2022); IEA (2022) Coal Information; ABS (2022); Department of Industry, Science, Energy and Resources (2022)

Conditions are likely to be slightly stronger for some smaller thermal coal exporting countries. South African exports, which are generally of high quality, are expected to hold up at current levels until after 2025. Exports from Canada are expected to lift from about 4 million tonnes annually to 6 million tonnes from the middle of the outlook period, supported by a ramp-up of output at the Vista mine, which began production in 2019. Longer term, Canadian exports are likely to decline in line with the Government's COP-26 pledge to ban thermal coal exports by 2030.

6.5 Prices

Prices are expected to stay volatile and high

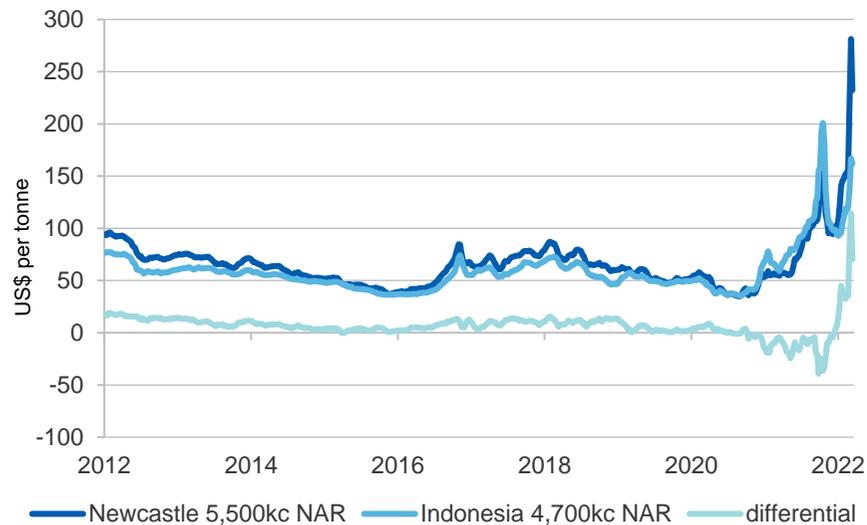
Thermal coal prices surged in January 2022, lifting by almost a third from (already high) December levels. Prices have been consistently elevated in recent months as rising demand ran up against successive disruptions to seaborne supply (Figure 6.6). These disruptions included labour shortages and slow loading at ports as a result of the COVID-19 pandemic. Difficult weather conditions (including intense wet weather in north-eastern Australia) have affected Australian supply in particular. Chinese informal import restrictions against Australia have added to the length and complexity of coal freight, adding especially to Chinese domestic prices.

A temporary export freeze by the Indonesian government, imposed in January 2022, provided a temporary lift to prices. However, the Russian invasion of Ukraine has had a more serious impact, and is expected to see thermal coal prices for Newcastle 6,000kcal product surge to US\$247 a tonne in the March quarter 2022.

As conditions gradually return to normal, prices are forecast at US\$128 a tonne in the March quarter 2023, ultimately easing to US\$60 by the end of the outlook period (in real terms). However, prices are likely to experience significant fluctuations along the way.

Price risks remain in both directions, but with a weighting to the upside. Short-term risks include further weather disruptions and a potential severing of coal shipments from Russia to Europe. Longer term risks include further potential outbreaks and new mutations of the COVID-19 pandemic, as well as uncertainties over the direction of Chinese government policy and its impact on global coal markets. Commitments by most nations to cut coal-fired power generation over time are likely to affect thermal coal prices in unpredictable ways over the projection period and beyond, with the potential impacts of global energy transition growing through the outlook period.

Figure 6.6: Thermal coal prices — Australian vs Indonesian



Source: IHS (2022). NAR = Net as received.

6.6 Australia

Australian thermal coal exporters face volatile conditions in 2022

Australian coal producers have faced increased uncertainty since the outbreak of the COVID-19 pandemic, and this is expected to persist. However, the recent surge in coal prices (Figure 6.7) has provided important benefits to coal producers, adding to revenue at the start of a potentially unstable 2022.

Rapid export redirection and surging prices swiftly offset the impact of China's informal import restrictions. Ultimately, restrictions have led to a more diverse coal export market and some insulation for Australian producers against further changes in Chinese Government policy.

Australian thermal coal exports finished 2021 on a relatively strong note, with volumes up by around 5% in December, and above 17 million tonnes. Values were over \$3 billion in the month. Volumes over 2021 were virtually unchanged from 2020, but earnings surged in line with growth in prices.

Volumes in 2022 face a more complex picture as floods have disrupted mines in New South Wales and Queensland, and led to a declaration of force majeure at the Port Kembla Coal Terminal. The current La Niña is likely past its peak, but could still foster unpredictable weather events over the first half of 2022.

Construction of a new \$60 million ship loader at the RG Tanna coal terminal in Queensland should provide some support to volumes over the longer term. The construction comes as part of a general upgrade of the port. Design activity linked to the new loader is set to begin in March 2022, with completion expected by mid-2024.

Coal provided to the Eraring power station has potential to be redirected to export markets upon its announced closure in 2025, though coal used in the station is typically of lower grade than most exported coal. The power station draws supply from the Hunter Valley Coal Chain, where mines have ready access to export infrastructure.

Market uncertainties still persist, however, with proposed coal projects facing longer and more costly legal challenges over recent years. These legal challenges have been particularly significant in the Hunter Valley region, where attempts to mark out land for coal mining have been met with counter-claims from the region's agriculture and tourism industries.

Faced with global and local pressures, some proposed thermal coal projects have been withdrawn or abandoned. These include mines at Bylong Valley, and New Acland, which continues to face legal challenges. The owners of New Acland have now closed the site and reduced its workforce to around twenty in response to the depletion of accessible resources. Shenhua's Watermark project has also been cancelled, with the NSW Government compensating the company \$100 million in exchange for forfeiting development rights at the site.

Partly offsetting this will be the ramp-up in output from Bravus' newly opened Carmichael mine in Queensland, where all approvals have been granted and expansions in output are proceeding.

Australian Pacific Coal's Dartbrook mine, which holds around 370 million tonnes of marketable reserves, has also been granted a five-year operating extension after years of legal disputes. The decision reverses a halt imposed by the NSW Independent Planning Commission in 2019.

Although global thermal coal conditions are likely to grow tougher towards the end of the outlook period, Australian coal retains key advantages over rival coal exporters. Australia retains many of the highest quality thermal coal reserves in the world, and an average export quality well above most competitors. Australian coal producers have geographic proximity to the Asian markets which account for virtually all future growth in coal demand. Coal miners in Australia also have strong infrastructure and high safety standards which make them a lower risk for global buyers.

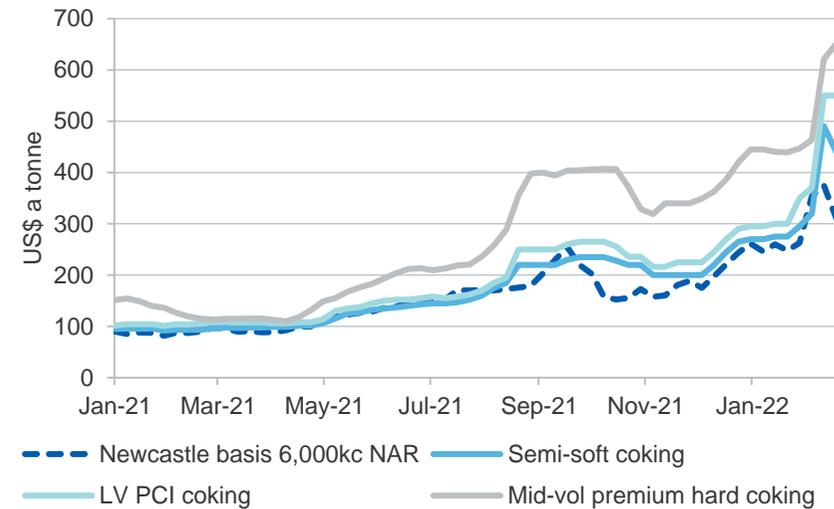
It is expected that reductions and expansions of mine output will remain broadly in balance over the outlook period, keeping export volumes mostly steady (Figure 6.8). However, prices will likely remain subject to significant volatility, with huge growth apparent following the Russian invasion of Ukraine. This is expected to see export values rise from \$16 billion in 2020–21 to over \$40 billion in 2021–22, before an easing to \$36 billion in 2022–23 (in real terms). As market conditions return to balance and prices shift back towards historical averages, export revenue is expected to ease further, to around US\$15 billion by 2026–27. However, potential price surges remain a prospect and could add significantly to export earnings at various points in time.

Volatility in prices and uncertainties around global coal markets are expected to persist through the outlook and beyond, but Australia's natural advantages should provide a measure of stability to coal producers.

Revisions to the outlook for Australian thermal coal exports

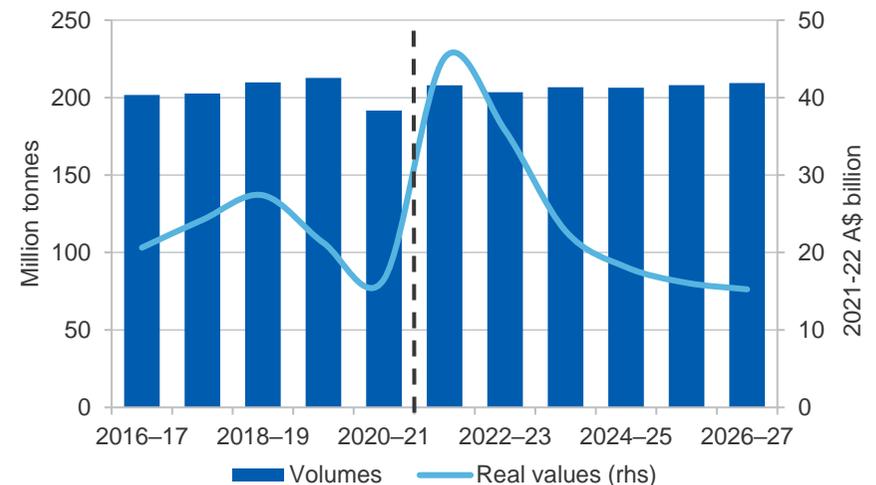
The forecast for export earnings has been revised up by \$9 billion (nominal terms) in 2021–22 and 2022–23, reflecting the impact of unusually severe weather disruptions and the Russian invasion of Ukraine. The forecast for earnings in 2025–26 remains largely unaltered from that of the March 2021 *Resources and Energy Quarterly*.

Figure 6.7: Prices for thermal and low-grade coking coals



Source: IHS Markit (2022)

Figure 6.8: Australia's thermal coal exports



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

Table 6.1: World trade in thermal coal

	Unit	2021 ^s	2022 ^f	2023 ^z	2024 ^z	2025 ^z	2026 ^z	2027 ^z	CAGR ^r
World trade	Mt	1,059	1,024	1,018	1,015	1,012	1,003	990	-1.1
Thermal coal imports									
Asia	Mt	865	861	857	849	847	840	823	-0.8
China	Mt	262	249	244	240	235	228	211	-3.6
India	Mt	151	164	164	163	167	171	173	2.2
Japan	Mt	141	140	138	135	130	126	126	-1.9
South Korea	Mt	90	86	86	83	80	77	74	-3.2
Thermal coal exports									
Indonesia	Mt	440	432	430	430	430	429	427	-0.5
Australia	Mt	199	204	205	207	207	209	209	0.9
Russia	Mt	172	171	173	173	173	173	176	0.4
Colombia	Mt	32	34	35	36	33	31	31	-0.5
South Africa	Mt	80	81	81	80	75	70	64	-3.7
United States	Mt	32	29	31	25	22	17	15	-11.9

Notes: **s** Estimate **z** Forecast **r** Projection

Source: International Energy Agency (2022); IHS Markit (2022); Department of Industry, Science, Energy and Resources (2022)

Table 6.2: Thermal coal outlook

World	Unit	2021 ^s	2022 ^f	2023 ^z	2024 ^z	2025 ^z	2026 ^z	2027 ^z	CAGR ^f
Contract prices ^b									
– nominal	US\$/t	110	145	104	91	82	77	75	-6.1
– real ^c	US\$/t	114	145	102	86	76	70	67	-8.5
Spot prices ^d									
– nominal	US\$/t	132	184	109	86	76	72	70	-10.1
– real ^e	US\$/t	136	184	106	81	70	65	61	-12.4
Australia	Unit	2020–21	2021–22 ^f	2022–23 ^z	2023–24 ^z	2024–25 ^z	2025–26 ^z	2026–27 ^z	CAGR ^f
Production	Mt	228	256	256	257	257	254	256	1.9
Export volume	Mt	192	206	204	207	206	208	209	1.5
– nominal value	A\$m	16,009	45,143	36,891	24,122	19,663	17,897	17,387	1.4
– real value ^h	A\$m	16,550	45,143	35,774	22,784	18,113	16,084	15,244	-1.4

Notes: **b** Japanese Fiscal Year (JFY), starting April 1, fob Australia basis. Australia–Japan average contract price assessment for steaming coal with a calorific value of 6700 kcal/kg gross air dried; **c** In current JFY US dollars; **d** fob Newcastle 6000 kcal net as received; **e** In 2022 US dollars; **f** Forecast; **h** In 2021–22 Australian dollars; **s** estimate

Source: ABS (2022) International Trade in Goods and Services, Australia, Cat. No. 5368.0; IHS (2022); NSW Coal Services (2022); Queensland Department of Natural Resources and Mines (2022); Company Reports; Department of Industry, Science, Energy and Resources (2022)