Thermal coal

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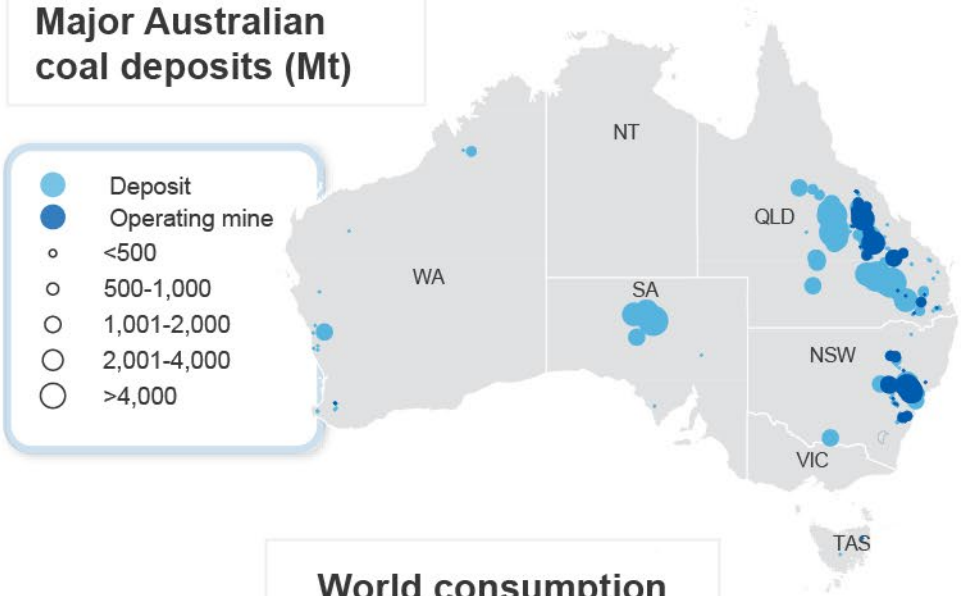
Major Australian coal deposits (Mt)



Thermal coal

- Thermal coal is primarily used in **electricity generation**
- Coal accounted for **38%** of power generation globally in 2018
- Mines are open cut or underground depending on the **geology of the deposit**
- **Coal formation** began 290-360 million years ago

World consumption

55% China

14% India

8% United States

3% South Africa

3% Indonesia

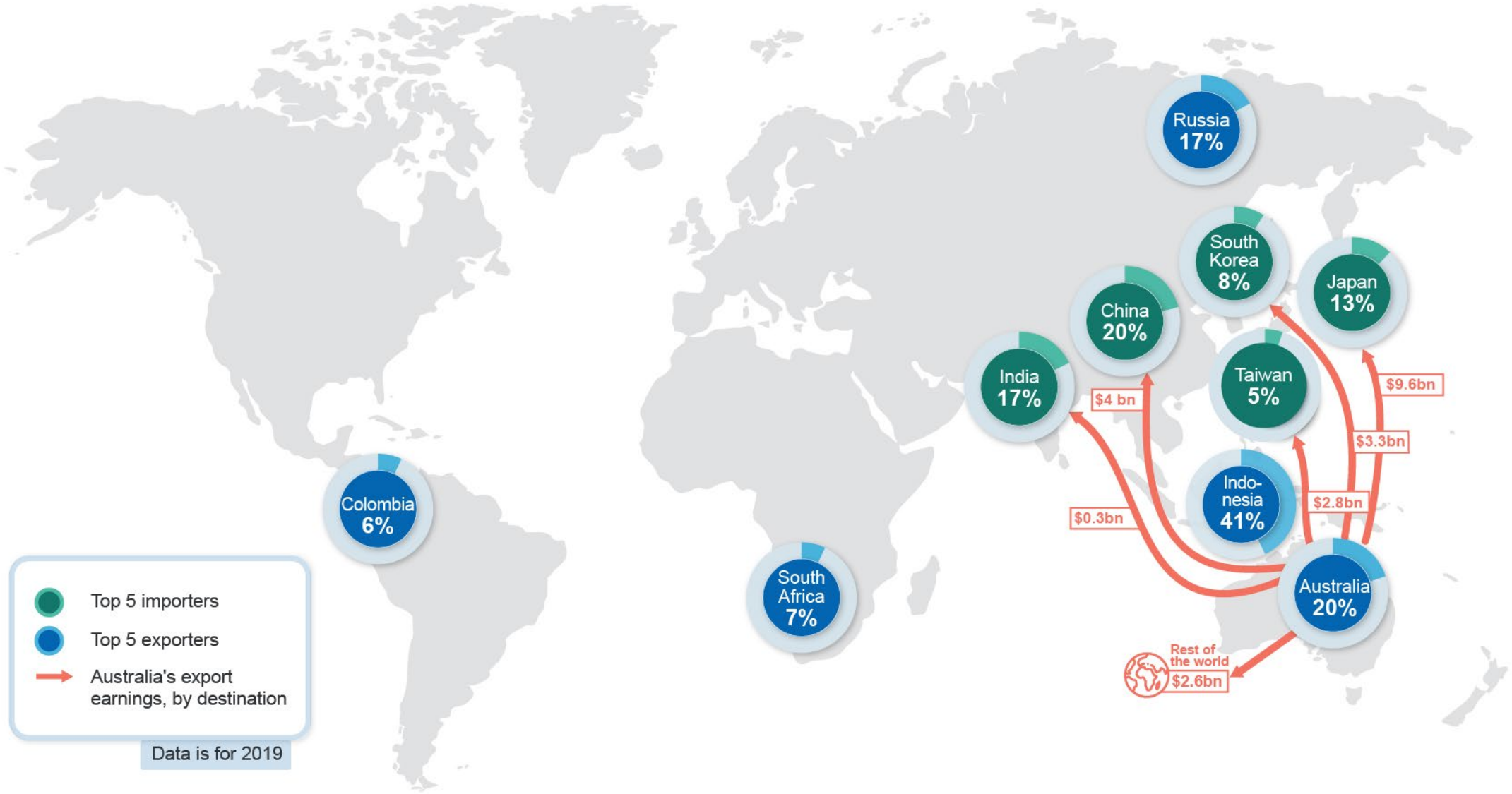
2% Japan

Australia's thermal coal

- **World's 2nd** largest **thermal coal** exporter
- **World's 4th** **largest black coal** resources
- **75-80%** of thermal coal **is exported**

Thermal coal

Trade map | September 2020



6.1 Summary

- Thermal coal spot prices have continued to fall, as the impact of COVID-19 drives a contraction in seaborne trade. The Newcastle benchmark price is forecast to average US$54 a tonne in 2020, before slowly rising to US$65 a tonne in 2022.
- The bulk of production cuts in 2020 are expected to come from Indonesia, Columbia and the US. Australia's exports are forecast to decline from 213 million tonnes in 2019–20 to 208 million tonnes in 2020–21, as Australian producers cut output in response to low prices. As prices gradually rise again, Australian exports are expected to grow to 221 million tonnes in 2021–22.
- Australia's thermal coal exports are forecast to fall from $20 billion in 2019–20 to $15 billion in 2020–21, before a partial recovery to $17 billion in 2021–22, driven by slow price gains and a strong recovery in volumes.

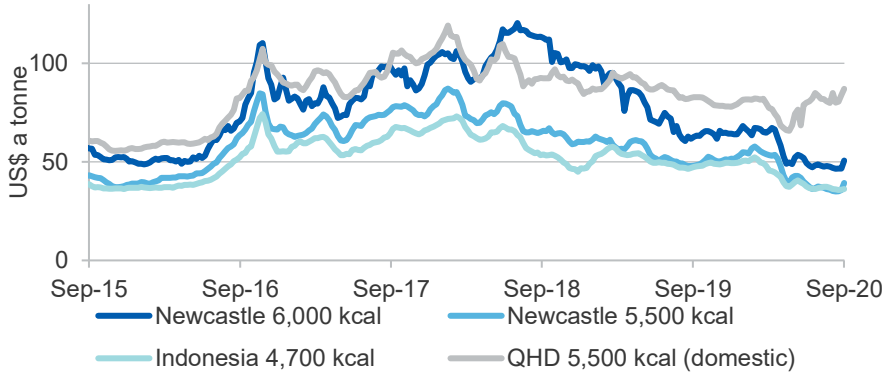
6.2 Prices

Thermal coal prices stabilise at lowest level in 14 years

A combination of developments drove the fall in thermal coal prices earlier in the year: in India, COVID-19 containment measures coupled with government directives that favoured domestic coal over imports; and in North East Asia, weak demand due to lower power consumption and an ongoing shift away from coal in electricity generation. Demand from smaller importers in South East Asia was also affected as the spread of COVID-19 widened. Competition from gas also lowered thermal coal demand, with oil-linked LNG contract prices in Asia near record lows, and LNG spot prices weighed down by oversupply (see the *gas* chapter).

In the September quarter 2020, seaborne thermal coal daily spot prices have stabilised at levels (in nominal terms) last seen in 2006. While global demand remains weak, strong Chinese imports and the withdrawal of higher cost producers and supply cutbacks from other miners appear to have slowed the decline in prices. The benchmark Australian thermal coal spot price — Newcastle 6,000 kcal/kg — remained mostly within the range US$45–50 a tonne during the quarter (Figure 6.1).

Figure 6.1: Thermal coal prices, weekly



Notes: Qinhuangdao (QHD) is the largest coal port in China and QHD prices are a key benchmark for coal prices in northeastern China.

Source: IHS (2020)

World demand for thermal coal has slumped, with imports 5 per cent lower year-on-year in the second half of 2020. China is the only major importer to demonstrate resilient import demand, and domestic prices for Chinese-produced thermal coal remain relatively high. While COVID-19 restrictions in the first quarter of 2020 lowered Chinese power consumption, domestic coal production was curtailed by China's efforts to control the spread of the virus and Chinese buyers turned to imports to make up the shortfall.

On the supply side, all major exporters are expected to ship lower volumes in 2020 and 2021, as persistently weak prices prompt miners to pause or reduce production for the time being.

Against the backdrop of persistent weak spot prices, the 2020–21 Japanese Fiscal Year contract price (April to March) outcome appears generous at US$68.75 a tonne, though this still represented a substantial drop from US$95 a tonne for the contract in 2019–20.

Thermal coal prices to remain subdued due to weak demand

The Newcastle 6,000 kcal spot price is forecast to remain low for the rest of 2020, averaging around US$54 a tonne for the year as a whole (Figure

6.2). Lower power demand — as a result of a sharp fall in economic activity — is expected to weigh on seaborne thermal coal demand.

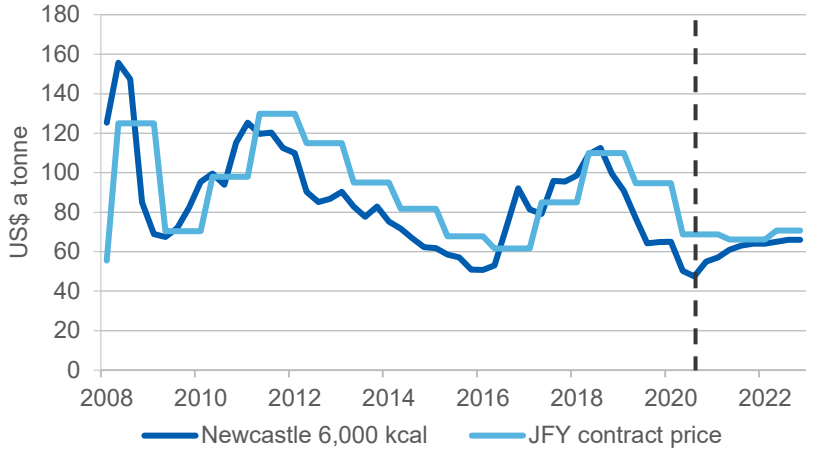
On the demand side, the rapid build-up in coal stocks in key importing countries will take some time to run down, and moves by the Indian government to encourage the use of domestic coal over imports should prevent any sharp rebound in prices in the short term. There also remains the risk of Chinese government intervention to restrict coal imports: the Chinese coal mining industry is encouraging the government to tighten import controls, with seaborne coal prices growing increasingly attractive relative to domestic prices, and local demand continuing to outpace supply (see comparison with QHD prices in Figure 6.1).

On the supply side, further cuts to production are likely to be required to balance the market in 2020. At current prices, around one-third of mine production supplying the seaborne thermal coal market (and for which data is available) is uneconomic (for Australian mine costs, see Figure 6.12).

Thermal coal prices are expected to rise in 2021, driven by an increase in seaborne thermal coal demand as the global economy recovers. However, longer-term trends will constrain the extent of the rise: Europe and South Korea are looking to reduce thermal coal consumption, while the world's two largest consumers (China and India) have signalled their intention to reduce thermal coal imports by increasing domestic production. Growing demand from South and Southeast Asia should help to offset declining thermal coal imports elsewhere. Competition from LNG is also expected to weigh on thermal coal demand, especially while LNG prices remain near record lows in spot and short-term contract markets (see the *gas* chapter).

The Japanese Fiscal Year contract price, which serves as a benchmark for the Asian market is, as usual, expected to settle at a premium relative to the spot price over the outlook period (Figure 6.2).

Figure 6.2: Thermal coal price outlook, annual



Notes: JFY is Japanese Fiscal Year (April to March).

Source: IHS (2020); Department of Industry, Science, Energy and Resources (2020)

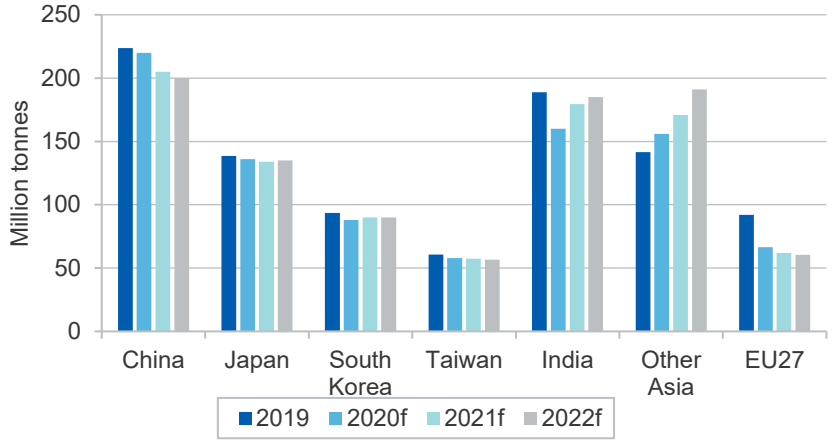
6.3 World trade

World thermal coal trade is expected to decline in 2020 for only the second time this century (the first being 2015). World thermal coal imports are forecast to fall by 63 million tonnes — or 6 per cent to 1,043 million tonnes.

The fall in seaborne thermal coal demand is expected to be led by India and Europe (Figure 6.3). Europe's coal imports are expected to continue to decline as a part of its longer-term shift away from coal in energy generation, while demand in Southeast and South Asia is also being affected by COVID-19's impact on power demand and economic activity. The largest cuts to production are expected to come from Indonesia, Colombia and the US, although all suppliers will be affected.

In 2021 and 2022, global thermal coal import demand is expected to grow weakly, as the world economies rebound from the impacts of COVID-19. But the shift away from coal in power generation in some countries, combined with the drive for self-sufficiency in others, is expected to keep world trade in thermal coal below 2019 levels during the outlook period.

Figure 6.3: Thermal coal imports



Notes: **f** Forecast

Source: IHS (2020); IEA (2019) Coal Market Report; Department of Industry, Science, Energy and Resources (2020)

In 2021 and 2022, global thermal coal import demand is expected to grow weakly, as the world economies rebound from the impacts of COVID-19. But the shift away from coal in power generation in some countries, combined with the drive for self-sufficiency in others, is expected to keep world trade in thermal coal below 2019 levels during the outlook period.

6.4 World imports

China's imports buck the trend so far in 2020

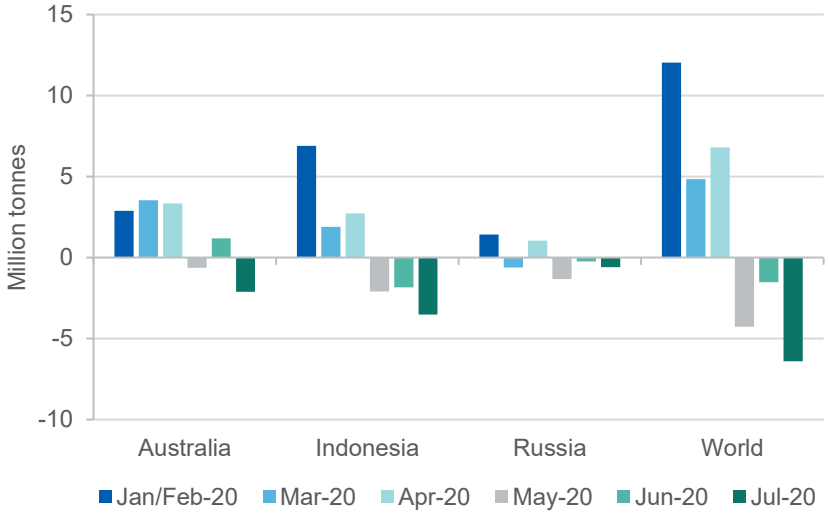
As the world's largest thermal coal consumer and importer, China exerts a profound influence on seaborne markets. Propelled by a rebounding economy — after its intense early 2020 measures to contain COVID-19 — China's total thermal coal imports surged in the first half of the year.

Previous forecasts (in the June *Resources and Energy Quarterly*) that Chinese thermal coal imports would fall by 11 million tonnes in 2020 now appear less likely. China's thermal coal imports in the first six months of 2020 were its highest on record for the period, up 15 per cent to 136 million tonnes, compared with 118 million tonnes in the same period a year ago (Figure 6.4).

During the first half of 2020, China's thermal coal trade relationship with Australia grew strongly. In that period, China's imports from Australia were up 48 per cent on the same period in 2019, from 21 to 32 million tonnes.

The implementation of measures in China from late January to control the spread of COVID-19 restricted domestic coal production, forcing Chinese buyers to turn to the seaborne market. However, these policies were short lived and a turn back to domestic supply is underway. Consequently, Chinese monthly imports started returning to normal levels in May and are expected to trend down over the remainder of 2020. With import restrictions expected to continue to curtail volumes for the remainder of the year, annual imports are forecast to be 220 million tonnes in 2020, slightly down from 224 million tonnes in 2019.

Figure 6.4: China's thermal coal imports, year-on-year change



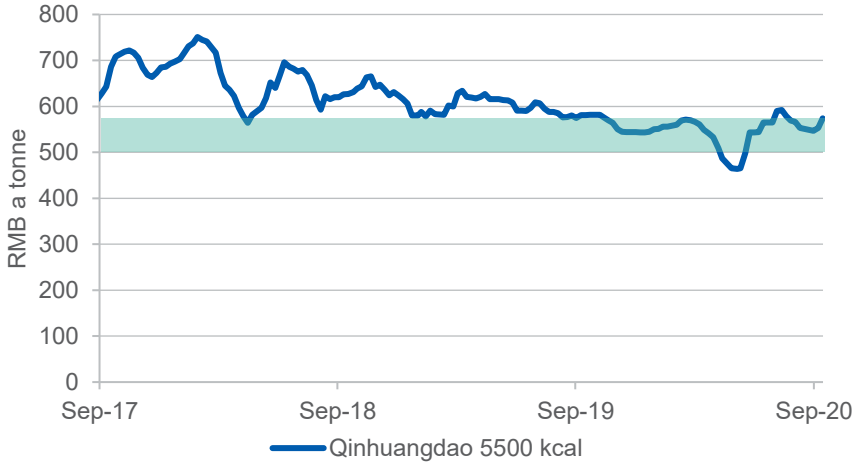
Notes: Estimates based on Chinese customs data. China customs released combined January/February data for 2020.

Source: Bloomberg (2020); Department of Industry, Science, Energy and Resources (2020)

The Chinese government's coal import policies will be critical in determining China's thermal coal imports in 2020 and beyond, with ramifications for the seaborne market. China's government has actively sought to manage coal import levels over the past few years; in part to provide support for China's coal industry — which is undergoing restructuring — and to pursue energy security goals. The Chinese government is set to pass changes to their domestic Coal Law, including new language focused on regulating coal imports.

Thermal coal import policy has been a key tool for stabilising domestic prices within a price band of 500 to 570 Renminbi (RMB) equivalent to US$72–82 a tonne at the current exchange rate. Prices in this range are understood to be broadly acceptable to China's power generators and industrial consumers, while also providing sufficient margins for domestic coal miners. China's government has tended to ease import restrictions when domestic prices exceed RMB570 a tonne, and tighten restrictions when the price goes below RMB500. The price range is shown as a green zone in Figure 6.5.

Figure 6.5: China's domestic thermal coal price



Notes: The 'green zone' is a price band from 500-570RMB. Qinhuangdao (QHD) prices are a key benchmark for coal prices in northeastern China.

Source: Bloomberg (2020)

China's quantitative limits on coal imports may help to explain the current popularity of Australian coal in China. Since Australian thermal coal generally has high calorific content, a buyer facing a quantitative limit is likely to choose higher grade coal to maximise the amount of energy available from a given quota expressed in tonnes.

In 2021 and 2022, with domestic mine output in China lifting more quickly than consumption, China's imports should decline. China has been restructuring its coal mining sector over the past few years, and the replacement of smaller, less efficient mines with larger, more efficient mine capacity, should allow production to grow. Domestic output will also be boosted by infrastructure improvements and expansions — including the 60 million tonne per annum Haoji railway, commissioned in October 2019 — which is connecting domestic supplies to demand centres more effectively.

Chinese coal demand is expected to lift in 2021 and 2022, as economic activity strengthens. While the bulk of newly installed power generation capacity is likely to come from hydro and renewable generators, China has a substantial pipeline of coal-fired power stations to build. The government has recently accelerated the approval and construction of over 100 GW of coal generation capacity, as part of its COVID-19 economic recovery plan. Given the pipeline of coal generation projects in China, it is possible that the central government will raise the coal power cap in the country's 14th Five Year Plan (2021–2025). China currently has over 1,000 gigawatts (GW) of operational coal-fired power generation capacity, and state planning bodies have recommended lifting the cap from 1,100 GW to somewhere between 1,200 GW and 1,400 GW.

Increases in coal consumption in utility-scale power generation are likely to be partly offset by falls in coal consumption in the residential, commercial and small-scale industry sectors, as a result of China's efforts to reduce city air pollution.

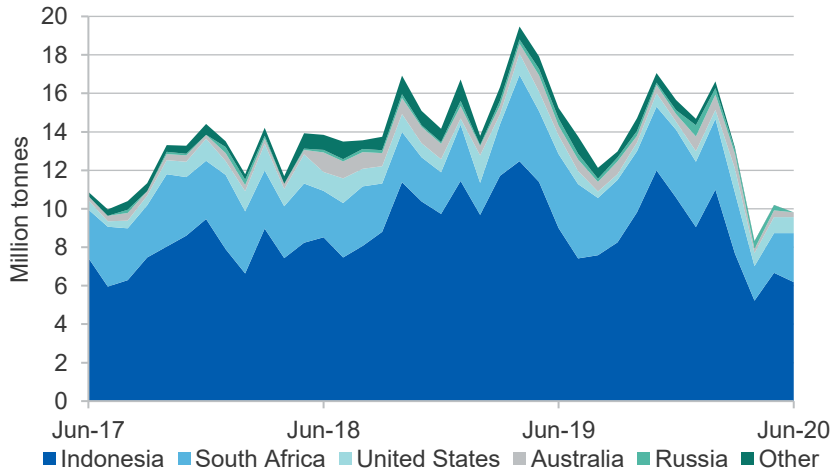
India's imports fall as lockdowns impact the power and industrial sectors

India is the world's second largest thermal coal consumer and importer, importing 189 million tonnes of thermal coal in 2019. The Indian government ordered nationwide COVID-19 containment measures from 24 March until 20 April, after which restrictions were progressively relaxed (except for localised 'hotspot' containment measures). This approach slowed the initial spread of COVID-19, but by September reported infections were growing rapidly, and economic activity in the country remained severely impacted.

As a result of COVID-19, India's thermal coal imports saw the world's steepest declines in the first half of 2020, with imports falling by 22 per cent year-on-year — 22 million tonnes lower compared with the same period in 2019. Almost all of this impact was absorbed by Indonesia — India's major supplier. Australia's thermal coal exports to India are very small (Figure 6.6).

The fall in India's imports was the result of a sharp contraction in demand coupled with resilient domestic mine output. As India went into COVID-19 containment measures in March, power demand plunged — lowering demand for thermal coal in electricity generation. Power consumption for the first half of 2020 was 10 per cent lower year-on-year. The COVID-19 containment measures also affected industrial thermal coal demand, especially in the sponge iron and cement production sectors. India's sponge iron sector uses about 25–30 million tonnes of imported thermal coal each year, largely from South Africa.

Figure 6.6: India's thermal coal imports, monthly



Source: IHS (2020)

India's domestic coal production started the year very strongly and has been resilient to the disruptive effects of COVID-19. Production from state-owned Coal India — which accounts for about 80 per cent of India's coal output — reached a monthly record in March, as the miner sought to reach its production target for the Indian fiscal year ending in March 2020. From April onward, Indian mine production fell to about 15 per cent below normal monthly levels. Nevertheless, coal stocks at mines, industrial facilities, ports and power plants climbed to record highs, and remain elevated at around twice ordinary levels. With excess supply mounting, the Indian government urged state-owned generation companies to use domestic coal ahead of imports. India's Power Ministry issued a directive for power plants to cut their use of imported coal.

The Indian government made a significant policy decision in May: suspending air quality environmental regulations which had previously obliged power plants in urban and polluted areas to use higher-quality coal. The removal of this regulation will further reduce incentives to import higher grade coals to blend with Indian coals. India's thermal coal imports are forecast to decline sharply — by almost 30 million tonnes to 160 million tonnes in 2020 — due to the likelihood that the demand-side impacts of COVID-19 on India's economy are prolonged. Record high inventories will take some time to run down, and will weigh on India's thermal coal imports in the short term.

There is a high degree of uncertainty about this forecast. To date, India's mining operations have continued throughout the COVID-19 containment measures. State-owned Coal India has a production target of 710 million tonnes in Indian fiscal year (April to March) 2020–21. However, the

continued spread of COVID-19 through the rest of the year would threaten output targets, as mines adjust operational procedures to prevent spread among the workforce, minimise work days lost to illness, as well as to cease work when infections occur. Such increased and prolonged COVID-19 impacts would depress economic activity, reducing coal demand. With India's coal consumption and production both dwarfing import requirements, small swings in either will likely exert a huge influence over the trajectory of India's thermal coal imports.

India's thermal coal imports are expected to recover gradually over the next two years to reach 185 million tonnes in 2022, as the country recovers from COVID-19, electricity demand picks up and industrial activity resumes. However, the bounce back is expected to be constrained by government targets and policy. In February 2020, India's Minister for Coal and Mines announced India would aim to stop importing thermal coal from Indian fiscal year 2023–24 (instead relying on domestic mine production for all its needs). While this has been a long-running goal for India and there are considerable barriers to its achievement, the announcement signals a renewed policy drive for energy self-sufficiency.

The Indian government's strategy to increase domestic production has several elements. The first is to boost production by state-owned companies, particularly Coal India which has an annual production target of 1 billion tonnes by Indian fiscal year 2023–24. The second strategy is to increase production by the private sector. The Indian government has introduced a number of reforms to encourage private investment, including opening up the country's coal sector to foreign direct investment and changing the rules governing coal mine auctions. While India will likely fall short of its production targets, government policy is nevertheless expected to propel Indian coal production higher over the next few years.

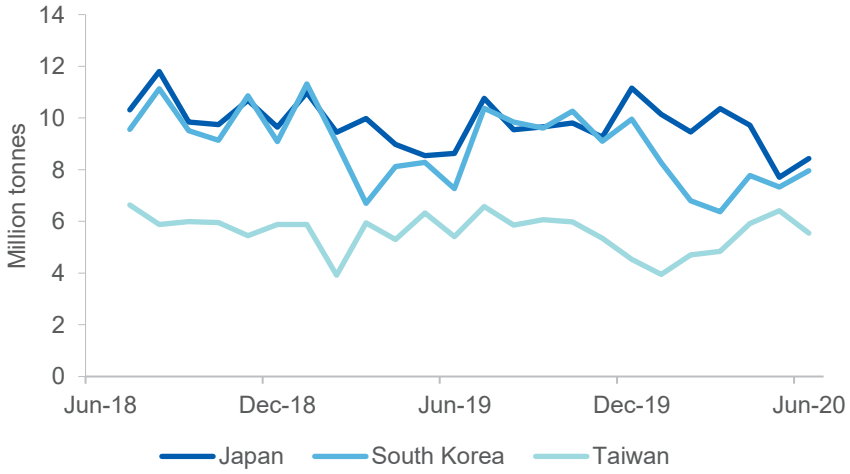
Japan's imports are being affected by competing influences

Japan is the world's third largest thermal coal importer, importing 138 million tonnes of thermal coal in 2019. In 2020, so far, the country's thermal coal imports in the seven months to July were slightly lower than the same period in 2019 (Figure 6.7). This gentle decline is likely to continue, with Japan's imports forecast to decline by around 2 million tonnes to 136 million tonnes in 2020. Low LNG prices and subdued energy demand — due to COVID-19 — should weigh on thermal coal imports. However, imports should also receive support from the shutdown of a number of nuclear power plants (which compete with thermal coal in electricity generation) that need to finish upgrades to comply with counter-terrorism measures.

Beyond 2020, there are competing trends at work. Japan has new coal-fired power generation capacity under construction but coal consumption will be offset by retiring older plants. Also, Japanese energy demand is on a downward trend, and Japan is planning to increase the role of nuclear and renewables in its energy mix, while reducing the role of gas and coal.

The 2011 Fukushima nuclear reactor disaster resulted in the closure of Japan's nuclear power plants. At the time of writing, only nine of Japan's 42 nuclear reactors had gained approval to restart, and only 4 of these are currently in operation. More reactors are likely to come back online by 2022, with 18 reactors having submitted applications to restart to Japan's

Figure 6.7: Japan, South Korea and Taiwan's thermal coal imports



Source: IHS (2020)

Nuclear Regulation Authority. The pace of nuclear restarts is the main uncertainty affecting the outlook for Japan's thermal coal imports. Nuclear energy in Japan continues to face public opposition and legal challenges. There remain significant risks of delays or slippages in nuclear reactor restarts.

South Korea's imports to decline as energy transition accelerates

South Korea is the world's fourth largest thermal coal importer, purchasing 93 million tonnes of thermal coal in 2019. South Korea's thermal coal imports fell steeply in the six months to June 2020 (Figure 6.7), down 12 per cent year-on-year, as COVID-19 affected power demand and the country temporarily closed some coal-fired power stations to reduce air pollution. South Korea's import and consumption of thermal coal has been declining since 2018, as government policies have been implemented to manage air pollution problems. South Korea's government has also introduced new tax arrangements aimed at encouraging the use of gas over coal.

South Korea's thermal coal imports are forecast to fall to 88 million tonnes in 2020, as a result of these existing trends and reduced power demand caused by COVID-19.

In 2021 and 2022, South Korea's imports are forecast to remain broadly stable at around 90 million tonnes, with increasing power demand offset by the impact of policies to reduce coal usage. South Korea's long-term plan is to shift its energy mix towards renewables and gas, and away from nuclear and coal. Under South Korea's current energy plan, no new coal-fired power or nuclear capacity will be added, aside from that already under construction. Under South Korea's draft 2020–2034 energy plan, the target for coal's share of the power mix in 2034 would fall to 15 per cent. Currently, coal accounts for around 27 per cent of South Korea's power generation.

Taiwan's imports to decline under its national energy plan

Taiwan's thermal coal imports were 61 million tonnes in 2019, and are expected to decline to 58 million tonnes in 2020. While power demand in Taiwan was reasonably resilient to the impacts of COVID-19 in the first half of 2020, thermal coal imports declined by 4 per cent year-on-year.

In 2021 and 2022, Taiwan's thermal coal imports are expected to decline slightly further as a result of the government's energy transition policies. Taiwan is aiming to shift its power generation mix towards gas and renewables, and away from nuclear and coal. Under Taiwan's current energy plan, coal's share of power generation would fall from 46 per cent at present to 27 per cent in 2025.

While government policy is expected to reduce Taiwan's thermal coal imports, Taiwan faces challenges in achieving a rapid energy transition. Taiwan will need to quickly bring on LNG regasification capacity in order to ramp up LNG imports, and project slippage remains a risk.

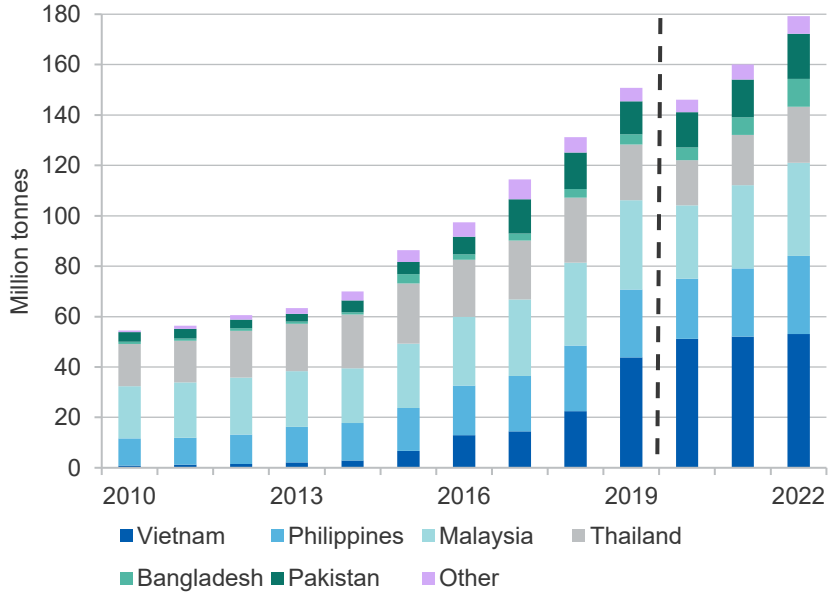
Southeast and South Asia to be a key source of import growth

In 2019, the nations in Southeast and South Asia (excluding India) collectively imported 151 million tonnes of thermal coal. The largest importers of thermal coal in Southeast Asia were Vietnam, Malaysia, the Philippines and Thailand. In South Asia, Pakistan was the largest thermal coal buyer, followed by Bangladesh. While nations in Southeast and South Asia are relatively small importers individually, collectively the region is expected to play a substantial role in thermal coal markets going forward.

Vietnam's thermal coal imports appear to have grown strongly in the first six months of 2020, as power demand climbed thanks to Vietnam's early success in containing the spread of COVID-19. The composition of electrical power supply also tilted towards coal as hydroelectric power generation was crippled by a prolonged dry season, and declining domestic gas supplies impacted gas-fired power generation.

Power generators in the Philippines are reportedly expecting to cut coal imports this year, as measures aimed to contain the COVID-19 pandemic reduce power demand. In 2020, Southeast and South Asia's imports are forecast to decline slightly to 146 million tonnes, as Vietnam's forecast import growth partly offsets declines in all other importers in the region.

Figure 6.8: South and South East Asia thermal coal imports



Source: IEA (2020) Coal Information; Department of Industry, Science, Energy and Resources (2020); IHS (2020)

After 2020, the thermal coal imports of Southeast and South Asia are expected to increase, reaching 179 million tonnes in 2022 (Figure 6.8).

Economic and population growth is driving the demand for electricity, and coal-fired power generation is expected to play a key role in meeting growing usage. While project cancellations appear to have been rising in recent years, the completion of coal-fired power stations currently under construction is expected to drive up the region's demand for thermal coal imports over the next few years.

Vietnam is expected to be a key driver of import demand growth. Under Vietnam's Power Development Plan, coal-fired power will account for 49 per cent of the nation's electricity generation capacity by 2025. However, commentators suggest that this target may be scaled back to as low as 37 per cent under a future update to the Power Development Plan.

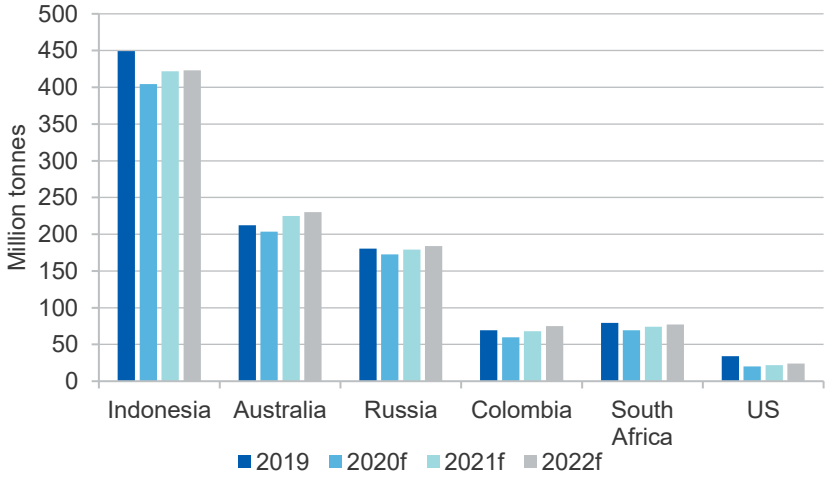
6.5 World exports

Indonesia's exports to decline sharply from record highs

Indonesia is the world's largest thermal coal exporter, exporting 449 million tonnes in 2019 — a record high — from production of 610 million tonnes. Indonesian thermal coal exports have come under pressure as thermal coal prices weaken, with prices below the cost of production for some miners. The COVID-19 containment measures in India — the main destination for Indonesia's exports — have reduced demand for Indonesia's lower calorific coals. Indonesia's exports are expected to fall sharply in 2020 by 10 per cent to 404 million tonnes.

In the first half of 2020, Indonesia's exports fell by 22 million tonnes (9 per cent) compared with the same period a year earlier. These losses were concentrated in the June quarter and were the result both of heavy rains in South Kalimantan and miners' strategic decisions to lower output, due to low price levels.

Figure 6.9: Thermal coal exports



Notes: **f** Forecast

Source: IHS (2020); IEA (2019) Coal Information; ABS (2019); Department of Industry, Science, Energy and Resources (2020)

Indonesia's exports are expected to rise slightly in 2021 and 2022, as prices recover. However, output will not return to 2019 levels during the outlook period, as forecast low prices discourage production. Moreover, the Indonesian government has previously flagged plans to limit annual output, in order to preserve coal reserves for future domestic use. The government is targeting an output cap of 550 million tonnes for 2020.

Russia's exports have been affected by COVID-19

Russia was the third largest thermal coal exporter in 2019, shipping 181 million tonnes. Russia's exports fell 14 per cent year-on-year in the first half of 2020. Russia's largest coal exporter, SUEK, reported lower exports due to low seaborne prices and logistics issues on the eastern rail network. Russian exports are forecast to fall to 173 million tonnes in 2020, but rebound to 184 million tonnes in 2022 as seaborne demand recovers.

Export growth will be supported by ongoing government plans to invest in the coal industry and in associated rail and port infrastructure. Russia has been investing heavily in transportation infrastructure to the country's eastern ports — targeting the Asian premium market, where Japan's utilities are diversifying their supply sources, and South Korea's new regulations are lifting demand for Russia's low sulphur coal. A sustained fall through 2020 in the value of the Russian Ruble has also helped Russian coal miners.

Colombia's exports affected by COVID-19

Colombia exported 69 million tonnes of thermal coal in 2019. Exports increased solidly year-on-year in January and February, but declined in March and April as COVID-19 disrupted producers. Colombia's exports are forecast to fall to 55 million tonnes in 2020, its lowest export volume in 15 years, before recovering over the next two years. The low level of investment in Colombia's coal sector in recent years, and falling coal consumption in Europe — where Colombian miners have historically sold their coal — are expected to limit the prospects for growth in Colombia's exports. Most of Colombia's coal mines are on the Caribbean coast — providing a direct route to Europe — so the costs of shipping to growing demand centres in Asia is much higher.

On 31 August, a mine workers' union at the massive Cerrejón coal mine went on strike over a pay dispute with the company. The closure of Cerrejón leaves just one of Colombia's big four coal exporters in full operation. The outlook for prices has prompted Glencore to seek regulatory approval to keep its Prodeco mine in care and maintenance for several years. At time of writing, approval has been denied, which limits the period it can stay shut to six months, but the company is likely to seek a review of the decision.

South Africa's exports fall on weak Indian orders

South Africa produced 250 million tonnes of thermal coal in 2019, and exported 79 million tonnes — making it the world's 4th largest exporter. South Africa began COVID-19 containment measures in late March, which was subsequently extended to end April. The measures briefly reduced output and exports from the country's largest port, Richard's Bay. South Africa's exports in the first half of 2020 were 10 per cent lower than the same period in 2019. South Africa's thermal coal 2020 exports are forecast at 69 million tonnes.

By 2022, South Africa's exports are expected to recover to 77 million tonnes (Figure 6.9). Developments in India — a major destination for South African exports — will be key to the recovery of the nation's coal sector. South African exports to India are expected to rise, and miners will increasingly target other Asian markets — such as Pakistan — as European coal usage falls. A modest decline in domestic consumption should also help free up thermal coal for export. This was outlined the South African government's October 2019 plan, to reduce coal-fired power generation capacity from 37 GW at present to 33 GW by 2030.

US exports to decline due to cost and infrastructure challenges

The US exported 34 million tonnes of thermal coal in 2019. The US is considered a price-sensitive swing supplier in the seaborne thermal coal market, with most US producers operating at higher costs. US exports fell by 34 per cent year-on-year in the first half of 2020, and a number of producers have idled mines, which will affect exports later in 2020. Lower exports are partly related to the impacts of COVID-19 on the seaborne

thermal coal market, but the US coal sector was already under pressure due to low natural gas prices, falling demand in Europe (the typical destination for US coal), and a lack of infrastructure on the US west coast (near Asian markets). These challenges are expected to result in US thermal coal exports falling to 20 million tonnes in 2020, before partially recovering to 24 million tonnes in 2022.

6.6 Australia

A tumultuous time for thermal coal exports

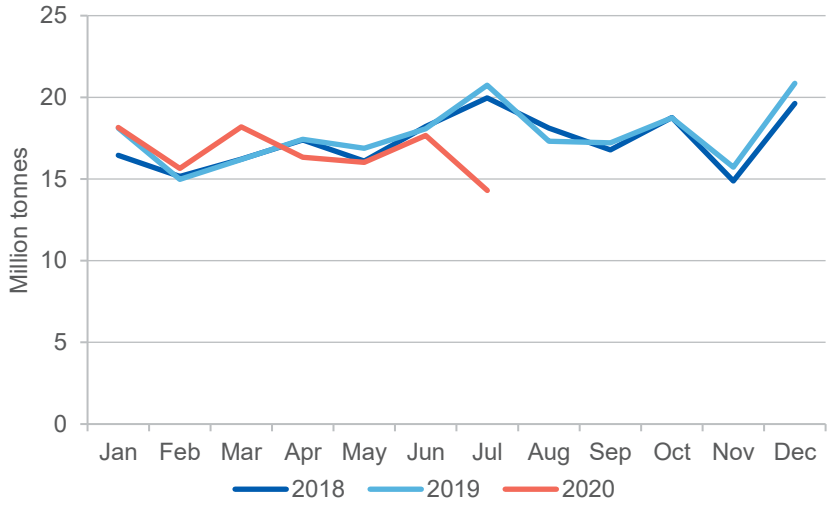
Despite a number of miners being challenged by bad weather and bushfires in the first half of 2020, Australia's thermal coal export volume was a record 102 million tonnes — similar to the volume exported in the same period in 2019. This strength faltered in July, with exports for that month at their lowest level since 2011, reflecting concerns over delays unloading cargos in China (Figure 6.10). Export volumes are expected to recover to more typical levels in August and September — based on preliminary port data — but to gradually decline through to the end of 2020, as mines execute their plans to reduce output.

Thermal coal export earnings are forecast to decline by around $6 billion to $15 billion in 2020–21, due to lower prices and slightly lower export volumes (Figure 6.11). The benchmark Newcastle 6,000 kcal spot price fell to below US$50 a tonne in the September quarter, and is expected to recover slowly, reaching around US$65 at the end of the outlook period.

Australia's thermal coal export volumes are forecast to edge down from 213 million tonnes in 2019–20 to 208 million tonnes in 2020–21. Forecast low prices over 2020, currently being exacerbated by the relative weakness of the US dollar, are expected to result in lower production at higher-cost mines during the first half of 2020–21.

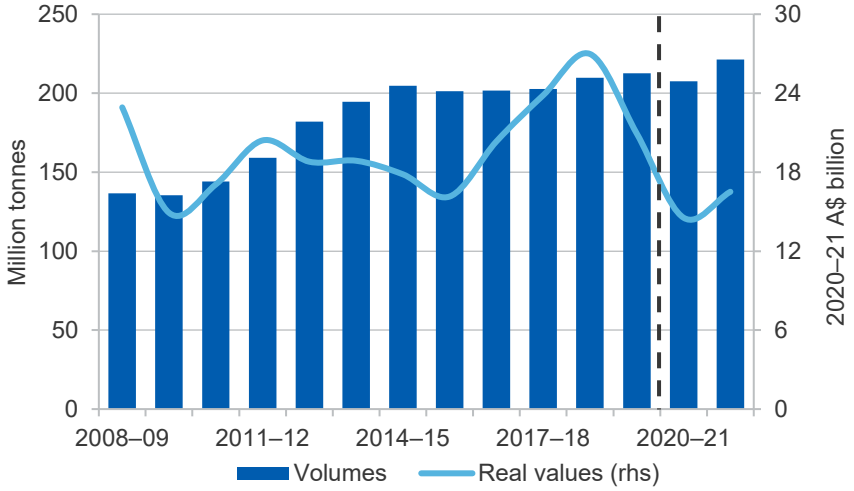
Australian thermal coal export earnings are forecast to edge up by around $2.3 billion to $17 billion in 2021–22, driven by a surge in export volumes and slow but steady growth in prices.

Figure 6.10: Australia's thermal coal exports, monthly



Source: ABS (2020)

Figure 6.11: Australia's thermal coal exports



Source: ABS (2020); Department of Industry, Science, Energy and Resources (2020)

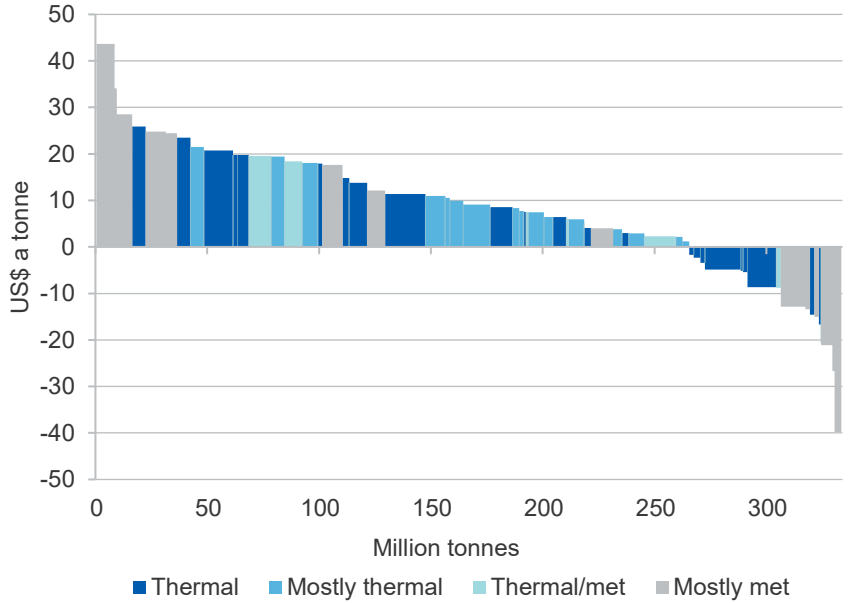
In mid-August, Peabody announced a 50 per cent reduction in the workforce at its 2.5 million tonne per annum Wambo mine. This follows a production halt at the mine since 19 June. Also in August, Glencore — Australia's largest supplier of thermal coal — announced plans to reduce its overall Australian output by about 12 per cent relative to 2019 output. The cuts will focus on lower quality coals that face the largest oversupply, and follow temporary operational stops at some Glencore mines.

At current prices, a significant proportion of Australian thermal coal production is loss-making. On a calorific-value-adjusted basis, an estimated one-third of Australian thermal coal exports are cash negative at prices of US$50 a tonne for Newcastle 6,000 kcal NAR coal (Figure 6.12). However, a number of factors should see Australian supply remain relatively resilient — and thus minimise the risk of widespread mine closures if prices do not persist at current lows beyond 2020:

- Some Australian thermal coal is exported on contracts that provide Australian miners with an annual fixed price. The 2020–21 Japanese fiscal year (April to March) benchmark contract price settled at US$68.75 a tonne, well above both the prevailing spot price at the time and the forecast for average spot prices of US$52 a tonne for the same period (see *Section 6.2 Prices*).
- Mines may run at loss for a time — given the costs associated with shutting down production — until prices recover. The costs associated with placing a mine on care and maintenance are relatively high in Australia, compared with nations like Indonesia, South Africa and Colombia.
- Mines may have 'take-or-pay' clauses in contracts with rail and port facilities, under which they incur costs whether or not they produce. Mines may continue to produce even if their costs are above prices, if take-or-pay costs are greater than those losses from producing.

Some of the mines that are uneconomic at current thermal coal prices do not rely on their thermal coal sales for the bulk of their revenue, since they mainly produce metallurgical coal (Figure 6.12). However, low prices for metallurgical coal could threaten the viability of some of these mines.

Figure 6.12: Export margins of Australian thermal coal mines



Notes: The margin curve incorporates the following assumptions: a price of US$50 a tonne for Newcastle 6,000 kcal NAR coal; an adjustment to mine costs based on this calorific content; an exchange rate of 1 AUD = US$0.65; 'Thermal' refers to mines that produce 100 per cent thermal coal; 'Mostly thermal' more than 70 per cent; 'Thermal/met 30-70 per cent; 'Mostly met' 1-30 per cent.

Source: AME Group (2020); Department of Industry, Science, Energy and Resources (2020)

Revisions to the outlook for Australian thermal coal exports

Since the June 2020 *Resources and Energy Quarterly,* Australia's forecast thermal coal export earnings have been revised down by $1.4 billion in 2020–21, due to weaker prices in the September quarter, a 2 million tonne reduction in expected export volumes and an 3 cent increase in the relative value of the Australian dollar. Forecast export volumes have been revised up by 5 million tonnes in 2021–22, on lower expected Australian coal consumption, but export earnings are expected to be $0.4 billion lower, due to the stronger dollar.

Table 6.1: World trade in thermal coal

	Unit	2019	2020[f]	2021[f]	2022[f]	Annual percentage change 2020[f]	2021[f]	2022[f]
World trade	Mt	1,106	1,043	1,058	1,078	-5.7	1.5	1.9
Thermal coal imports								
Asia	Mt	847	808	837	858	-4.6	3.6	2.5
China	Mt	224	220	205	200	-1.7	-6.8	-2.4
India	Mt	189	160	180	185	-15.2	12.2	3.0
Japan	Mt	138	136	134	135	-1.8	-1.5	0.7
South Korea	Mt	93	88	90	90	-5.9	2.4	0.0
Taiwan	Mt	61	58	57	57	-4.6	-1.2	-1.2
Thermal coal exports								
Indonesia	Mt	449	404	422	423	-10.0	4.4	0.2
Australia	Mt	212	203	225	230	-4.3	10.8	2.3
Russia	Mt	181	173	179	184	-4.4	3.7	2.8
Colombia	Mt	69	55	68	75	-13.8	13.6	10.3
South Africa	Mt	79	69	74	77	-12.6	6.5	4.1
United States	Mt	34	20	22	24	-41.6	10.1	9.1

Notes: **f** Forecast

Source: IEA (2019) Coal 2019, accessed through the IEA 20/20 Professional Browser; IHS (2020); Department of Industry, Science, Energy and Resources (2020)

Table 6.2: Thermal coal outlook

World	Unit	2019	2020[f]	2021[f]	2022[f]	Annual percentage change 2020[f]	2021[f]	2022[f]
Contract prices[b]								
– nominal	US$/t	95	69	66	71	-27.4	-3.7	6.6
– real[c]	US$/t	95	68	64	67	-28.7	-5.6	4.5
Spot prices[d]								
– nominal	US$/t	74	54	61	65	-26.5	12.2	6.5
– real[e]	US$/t	75	54	60	62	-27.7	9.6	4.4
Australia	**Unit**	**2018–19**	**2019–20**	**2020–21[f]**	**2021–22[f]**	**2019–20**	**2020–21[f]**	**2021–22[f]**
Production	Mt	272	268	263	276	-1.5	-1.9	5.2
Export volume	Mt	210	213	208	221	1.4	-2.4	6.6
– nominal value	A$m	25,958	20,382	14,547	16,849	-21.5	-28.6	15.8
– real value[h]	A$m	26,966	20,894	14,547	16,513	-22.5	-30.4	13.5

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 2020 US dollars; **f** Forecast; **h** In 2020–21 Australian dollars.

Source: ABS (2020) International Trade in Goods and Services, Australia, Cat. No. 5368.0; IHS (2020); NSW Coal Services (2020); Queensland Department of Natural Resources and Mines (2020); Company Reports; Department of Industry, Science, Energy and Resources (2020)