Nickel

Major Australia nickel deposits (Mt)
- <0.05
- 0.06–0.21
- 0.22–0.58
- 0.59–0.83
- 0.84–1.69
- >1.70

World consumption
- 70% Stainless steel
- 8% Alloys
- 8% Plating
- 8% Casting
- 5% Batteries
- 1% Other

Nickel facts
- Nickel is used in the US, UK and Euro coins
- Nickel has a growing role in electric vehicle batteries
- Nickel is magnetic at room temperature and is fully recyclable
- Nickel is the second most abundant element in the Earth's core after iron

Australia's nickel
- Australia has 26% of world nickel resources
- 200,000 tonnes produced each year
- Contributes more than $3b to the economy
13.1 Summary

- The nickel price is expected to decline to average US$12,600 a tonne in 2020, as a result of weaker consumption. Subsequently, the market is forecast to tighten, pushing the price up to a forecast US$15,100 a tonne in 2022.
- New projects and expansions are expected to lift Australia’s export volumes from an estimated 282,000 tonnes in 2019–20 to around 374,000 tonnes in 2021–22.
- Australia’s nickel export earnings are forecast to strengthen on the back of growing export volumes and recovering prices, reaching $6.8 billion in 2021–22, up from an estimated $4.3 billion in 2019–20.

13.2 Prices

Market disruptions have supported rising nickel prices

Nickel prices swung sharply in the second half of 2019, ranging between US$10,400 and US$18,600 a tonne, and averaging US$13,900 a tonne. The volatility reflected uncertainty regarding the impact of Indonesia’s planned nickel ore export ban.

Prices then fell in early 2020, stabilising slightly during April and May. Recent price growth was supported by supply concerns amidst COVID-19 lockdowns, which affected production in several countries. The LME nickel spot price is estimated to be US$11,900 a tonne in the June quarter of 2020, 3.1 per cent lower year-on-year and down 6.6 per cent from the March quarter (Figure 13.1).

Several nickel miners were forced to cease activity during the quarter, due to COVID-19 containment measures. Of note, Brazilian miner Vale cut its output guidance for 2020 from 200,000 tonnes to about 180,000 tonnes, and mining activity in the Philippines was substantially halted in April.

Going forward, the COVID-19 pandemic is expected to push the nickel market into surplus in 2020. In 2020, the nickel price is forecast to average US$12,600 a tonne, down 9.5 per cent on the 2019 average price of US$13,900 a tonne (Figure 13.2).

Figure 13.1: Recent nickel prices and LME stock level trends


Figure 13.2: Nickel price and stock levels

Notes: Total stocks include warehouse and privately held stocks.
Nickel is one of the best placed commodities to rebound post COVID-19. April’s upward trend in nickel prices was likely a false indicator of an early recovery, as previous fears of a supply shortage were alleviated by an expected widening market surplus for nickel. However, given its exposure to China’s stainless steel and electric vehicle (EV) production, there is wide consensus that nickel is one of the best placed base metals to rebound as the world, and particularly China, starts to recover economically from the COVID-19 pandemic.

### 13.3 World consumption

**Final nickel demand forecast set to fall in 2020**

Global primary finished nickel consumption is forecast to contract by 15 per cent in 2020, as COVID-19 impacts the world and the Chinese construction and automotive sectors. The resulting shutdowns from the pandemic have severely reduced activity in the industrial and construction sectors, resulting in weaker demand for base metals, including nickel.

**China’s nickel ore imports fell in April**

China’s nickel ore imports plunged by 66 per cent year-on-year in April, as imports from Indonesia and the Philippines fell. China’s nickel ore imports have declined 35 per cent year-on-year in the first four months of 2020.

Falling nickel ore port stocks in China signal a tightening nickel ore market as China accounts for just over half of the world’s nickel demand. Global nickel demand is expected to be impacted more negatively by COVID-19 than nickel supply (Figure 13.3).

**Evidence of Chinese economic recovery has lifted stainless steel expectations**

Chinese domestic stainless steel production, which accounted for 58 per cent of world output last year, fell by 13 per cent year-on-year in March 2020. However, Chinese net exports of stainless steel for March almost doubled over January and February 2020. Defying market expectations, Chinese domestic inventories have fallen, the stainless steel price has strengthened, and a recovery in April production has led to improved conditions for Chinese stainless steel markets; consequently improving expectations for nickel consumption.

**Nickel prices may benefit as electric car sales rise in Europe**

Although batteries currently account for about 5 per cent of total nickel consumption, they are vital for the nickel sulphate premium over nickel metal. Consequently, changes in EV sales and policy shifts can significantly affect the nickel market.

The COVID-19 pandemic has significantly affected global automotive sales; in Europe (excluding the UK) vehicle sales fell by 80 per cent during April. However EV sales were firmer, falling by only 30 per cent.

EV sales in China have fallen by almost a third over the year to April 2020 and China’s COVID-19 related lockdowns have delayed battery production across a number of facilities. If China’s EV producers, reinforced by European markets, return to targeted production levels in the next few months, this could potentially offer further support to nickel prices during 2020.

**Figure 13.3: Refined nickel consumption by major country**

![Refined nickel consumption by major country](image)

13.4 World production

The refined nickel market is facing the first surplus since 2015

Nickel mine supply remains subject to a range of disruptions, including reduced production in Brazil and the Philippines, as well as the Indonesian export ban (Figure 13.4). Despite this, the world refined nickel market is expected to record a net surplus for 2020, as the pandemic is expected to have a greater negative impact on consumption than on production. The market is expected to move from a 61,000 tonne deficit in 2019 to a 43,000 tonne surplus in 2020 (Figure 13.5).

Indonesia’s ore ban drives contraction in China’s nickel pig iron production

The Indonesian nickel ore ban — and a sharp fall in exports from the Philippines — is having significant effects on Chinese nickel pig iron output, which declined for the second consecutive quarter in March 2020.

Philippines first quarter nickel ore output was down significantly

In early April, the Philippines’ biggest nickel miners suspended operations, as a result of measures to contain COVID-19. These suspensions resulted in nickel ore output in the March quarter declining by 27 per cent from a year earlier to 28,000 tonnes. With more than half of its 29 operating nickel mines reporting zero production, port data suggests exports from the Philippines fell drastically in April, with January to April exports of nickel ore falling by 40 per cent year-on-year. The Philippines has become a main feedstock source for China’s nickel pig iron industry since the introduction of Indonesia’s export ban.

Brazil has lowered nickel production guidance for 2020

Vale, the world’s largest producer of nickel, has lowered its nickel production guidance for 2020, with the company citing heavy rain, unplanned outages, regulatory delays and ongoing logistics disruptions caused by COVID-19 lockdowns. Vale revised its 2020 production guidance for nickel down from 200,000-210,000 tonnes to 180,000-195,000 tonnes for the year. Vale nickel production totalled 208,000 tonnes in 2019.
13.5 Australia

Export earnings are set to grow despite lower prices

In 2019–20, nickel export earnings are estimated to be $4.3 billion, 21 per cent higher year-on-year (Figure 13.6). Over the outlook period, this growth is expected to continue, with export earnings forecast to reach $6.8 billion in 2021–22.

This growth is expected to be primarily driven by stronger export volumes, as investment in new capacity comes online. Export volumes are estimated to total 282,000 tonnes in 2019–20, up 25 per cent year-on-year, and are forecast to rise to 374,000 tonnes in 2021–22.

Immediate COVID-19 impacts largely accommodated by mines

In addition to lower prices and market uncertainty, mining operations have broadly accommodated COVID-19 related movement restrictions and production has been relatively unchanged. Panoramic Resources’ Savannah mine in Western Australia closed in April due to COVID-19 restrictions, and at the time of writing has not been reopened. In addition, ongoing nickel price weakness is a risk to a number of the projects in the development pipeline.

Expectations of market growth support expansions and restarts

Although nickel prices are expected to remain depressed over the short term, growing markets for nickel used in batteries is supporting expectations and higher production in Australia.

Australia’s mine production is projected to lift from an estimated 156,000 tonnes in 2019–20 to 258,000 tonnes in 2021–22, growing an average 28 per cent a year. This growth is expected to be supported by a number of new projects and restarts.

In Western Australia, production at BHP’s Nickel West project is expected to expand over 2020 following downtime at the Mt Keith mine and with new production from the Yakabindie mine, which commenced operations in the March quarter.

The restart of First Quantum’s Ravensthorpe mine in Western Australia is expected to be completed in April, with the first shipment in May. Before it went into care and maintenance in 2017, the Ravensthorpe mine produced around 20,000 tonnes of nickel a year.

Growing demand for nickel sulphide in batteries, and subsequent nickel prices, will influence the trajectory of a number of projects currently under development. Poseidon Nickel’s Black Swan project is production ready and could restart quickly if supportive nickel prices were maintained.

Additional capacity could also come from Mincor’s nickel projects, primarily the Greenfield Cassini mine, and Durkin North and Long mine restarts. The Definitive Feasibility Study released in March 2020 suggested production could start by the end of 2021 if a positive financial investment decision is received this year. It is intended that nickel ore will be processed at BHP’s Kambalda facility and sold to BHP for further processing into nickel sulphide.
Significant potential exists in refinery capacity

In the March quarter 2020, refinery production lifted following major maintenance activities at BHP’s Kwinana refinery and Kalgoorlie smelter. Over the outlook period, Australia’s refinery production is forecast to increase from an estimated 104,000 tonnes in 2019–20 to 131,000 tonnes in 2021–22, growing at an average of 13 per cent a year.

Restarted production from First Quantum’s Ravensthorpe facility, as well as capacity expansions at BHP’s Kwinana refinery, are expected to contribute to this growth. Long term prospects for nickel consumption in electric vehicle batteries remain strong, despite current COVID-19 demand losses. A number of Australian projects are poised to take advantage of growing markets.

Exploration expenditure

In the March quarter 2020 nickel and cobalt exploration fell to $38 million, 22 per cent lower year-on-year (Figure 13.7). Lower nickel and cobalt prices may have dampened exploration activity.

Figure 13.7: Australia’s nickel and cobalt exploration expenditure, quarterly

Revisions to the outlook

The forecasts for Australia’s nickel export earnings have been revised down since the March 2020 Resources and Energy Quarterly, most notably by $310 million in 2020–21. This is primarily due to downward revisions in the forecast nickel price.
### Table 13.1: Nickel outlook

<table>
<thead>
<tr>
<th>World</th>
<th>Unit</th>
<th>2019</th>
<th>2020f</th>
<th>2021f</th>
<th>2022f</th>
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<td>34.6</td>
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Notes: b In 2020 calendar year US dollars; c Nickel content of domestic mine production; d Includes metal content of ores and concentrates, intermediate products and nickel metal; e In 2019–20 financial year Australian dollars; f Forecast, s Estimate.

Source: ABS (2020) International Trade in Goods and Services, Australia, Cat. No. 5368.0; Company reports; Department of Industry, Science, Resources and Energy (2020); International Nickel Study Group (2020); LME (2020); World Bureau of Metal Statistics (2020)