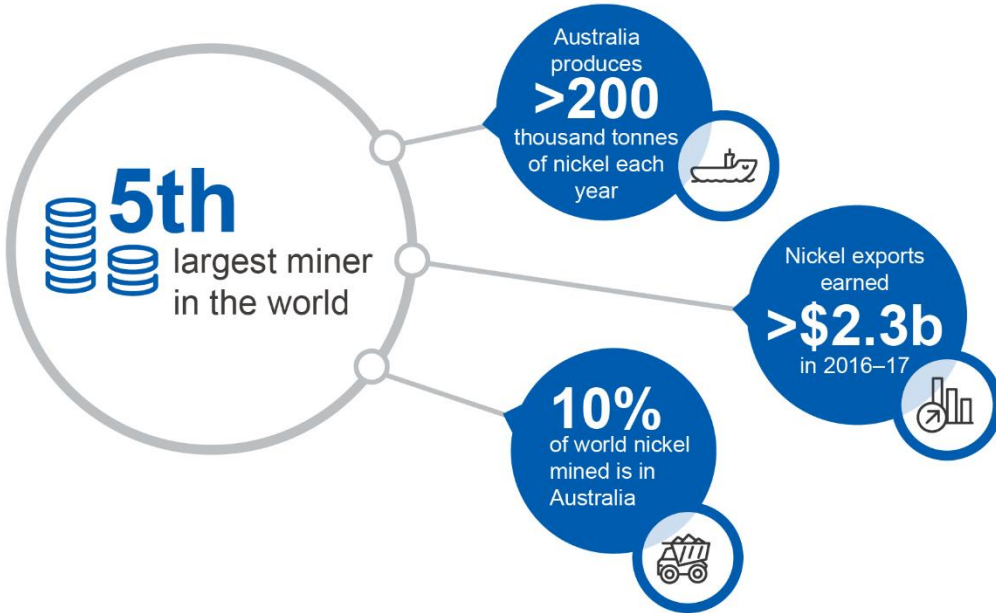


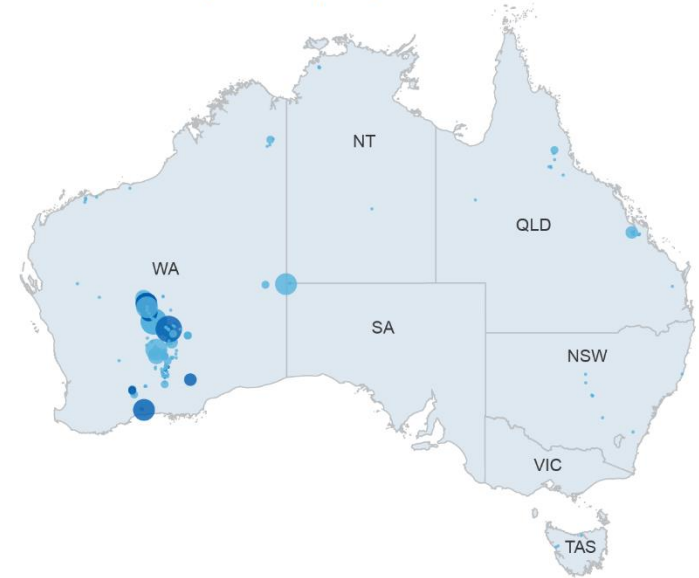
# Nickel

Resources and Energy Quarterly September 2017



## Major Australian nickel deposits (Mt)

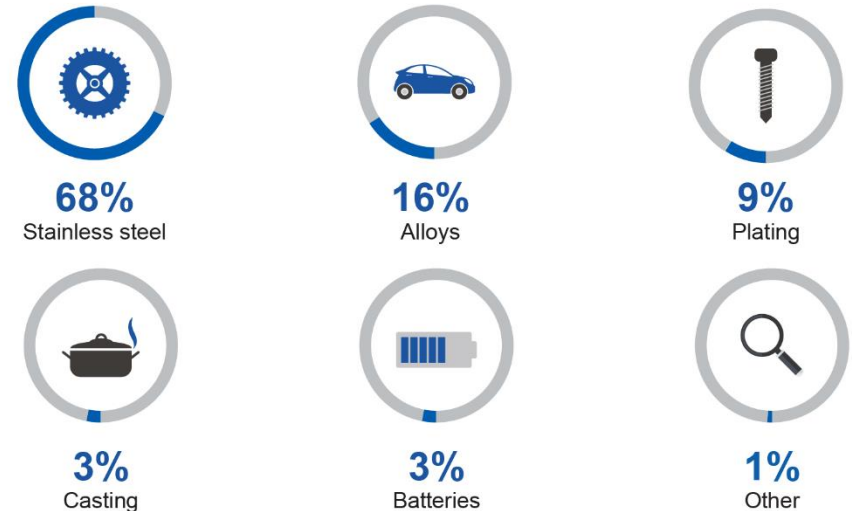
- <0.05
- 0.06-0.21
- 0.22-0.58
- 0.59-0.83
- 0.84-1.69
- >1.70
- Deposit
- Operating mine



## Key nickel consumer markets (tonnes)



## Global uses of nickel



## Summary

- Australia's nickel export earnings declined by 20 per cent to \$2.3 billion in 2016–17, largely reflecting a decline in export volumes.
- Earnings are forecast to fall slightly to \$2.2 billion in 2017–18, before rising to \$2.4 billion in 2018–19, supported by rising prices and the ramping up of production at Independence Group's Nova mine.
- Export volumes fell by 31 per cent to 172,000 tonnes in 2016–17, as production at Queensland Nickel's Yabulu refinery ceased and several mines were closed in Western Australia. Volumes are expected to lift to 194,000 tonnes by 2018–19.
- The nickel price is forecast to fall by around 1 per cent to \$US9,671 per tonne in 2017, but subsequently increase in 2018 and 2019.

## Prices and stocks

### *Nickel prices are expected to rise from their present low level*

LME nickel prices rose in July and August, and are estimated to have averaged around \$US9,437 per tonne in the September quarter. This is around 2.2 per cent higher than the June quarter, but 8.1 per cent lower than in the September quarter 2016. The recent rise reflects expectations of higher Chinese demand — in line with its recent stimulus push — and some recent falls in nickel inventories.

The outlook for nickel prices over the next two years has been revised up, following stronger-than-expected demand growth in China, which is seeking to increase its output of stainless steel.

Output from the Philippines remains relatively low, following a crackdown on environmental mismanagement at some nickel minesites. Stockpiles at LME registered warehouses fell in the September quarter to their lowest level since January 2017.

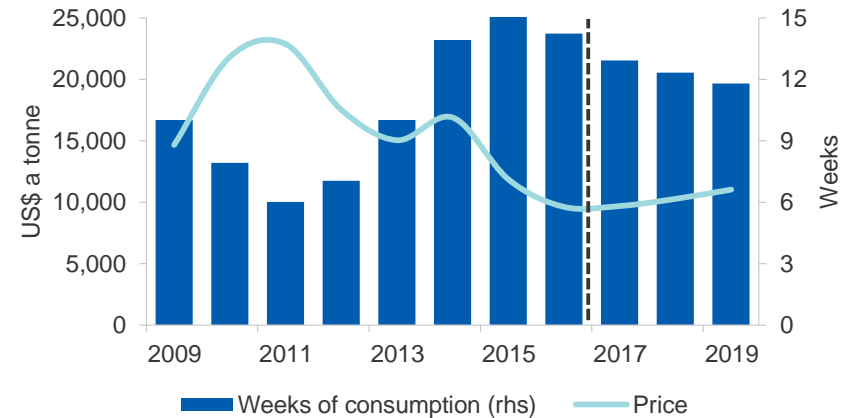
On balance, nickel prices are forecast to increase slowly but steadily over the next two years, though significant uncertainty over supply could lead to periods of volatility, with the potential for prices to drop below the low end of the consensus range. Prices are expected to rise, from \$US9,670 per tonne in 2017 to \$US10,250 per tonne in 2018, and \$US11,000 per tonne in 2019.

Figure 13.1: LME nickel spot price



Source: Bloomberg (2017) London Metal Exchange

Figure 13.2: Nickel stocks and price



Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

## World consumption

### *Stainless steel production is driving increased nickel consumption*

World nickel consumption increased by 3.2 per cent year-on-year in the June quarter 2017. Growth was driven by stronger consumption in South Africa, the US, India and Japan. World nickel consumption is forecast to grow by 5.1 per cent in 2018, and by 4.4 per cent in 2019.

Nickel consumption growth has been supported by a rapid increase in stainless steel production in China (69 per cent of the China's nickel use is in the manufacture of stainless steel). India replaced Japan as the world's second largest stainless steel producer in 2016, and its demand for nickel is expected to rise by around 3 per cent year-on-year in the June quarter 2017.

## World production

### *Production is rising as governments seek to remove constraints*

World mined nickel production rebounded sharply in the June quarter, increasing by 21.2 per cent to 549,000 tonnes, up by 10.4 per cent year-on-year. The result was driven in large part by a substantial rise in production in Indonesia, the Philippines and New Caledonia.

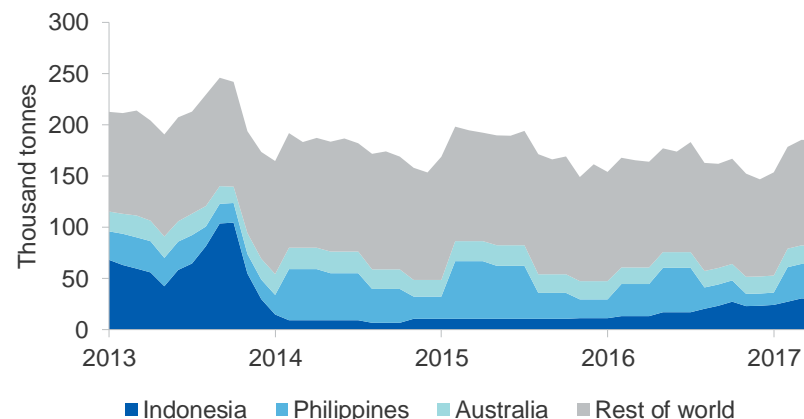
In the Philippines, Regina Lopez — who as acting Secretary of the Department of Environment and Natural Resources ordered 23 mine closures, cancelled 75 mining exploration contracts and banned new open-pit mines — was dropped from her position on 2 May. Subsequently, mine production has lifted substantially. Nickel exports from Indonesia have also increased, as the ban on nickel ore exports was conditionally eased in January 2017. The ban had been introduced in January 2014, to provide support to 'higher value added' refining industries.

## Australia's exploration, production and exports

### *Exploration expenditure rebounded in the June quarter*

Nickel and cobalt exploration expenditure increased by 80 per cent year-on-year to \$A21.6 million in the June quarter 2017 — the highest quarterly expenditure on nickel and cobalt exploration since 2011.

Figure 13.3: World mined nickel production, monthly



Source: International Nickel Study Group (2017)

Figure 13.4: Australia's nickel and cobalt exploration expenditure, quarterly



Source: ABS (2017) Mineral and Petroleum Exploration 8412.0

### Australian production is falling due to a series of mine closures

Australia's refined and intermediate nickel production fell by 23.5 per cent to 142,000 tonnes in 2016–17, while mined production fell by 7.2 per cent to 201,000 tonnes.

The decline in Australia's nickel production in 2016–17 reflects the closure of both Queensland Nickel's Yabulu refinery in 2016 and several mines in Western Australia, including Mincor's Kambalda mine and Panoramic Resources' Savannah and Lanfranchi mines.

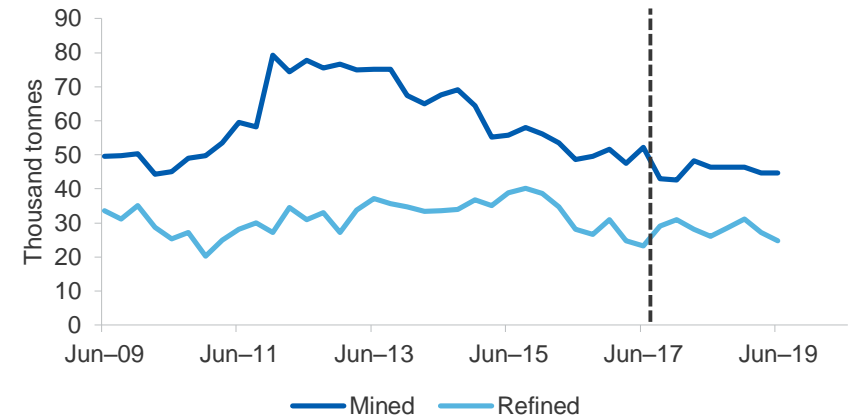
Declining nickel production during 2017 is also attributed to temporary disruptions. Glencore's Murrin Murrin mine reported a 33 per cent year-on-year drop in own-source nickel production in the March quarter 2017, which it attributed to maintenance stoppages. Nickel metal production at BHP's Nickel West facility declined early in the year, but production across most mines has subsequently picked up, with BHP expecting production at the Nickel West facility to increase further following recent debottlenecking activities.

In August, First Quantum Minerals announced that its Ravensthorpe nickel mine in Western Australia would close in early September. In a statement, the company noted, 'Ravensthorpe is an excellent operation with an outstanding workforce and supportive community, but the continuing depressed nickel market conditions, over some years, leaves us no option.' Around 270 jobs will be lost at the site, and nickel production in Australia will be reduced by about 4 per cent as a result.

### Export earnings are expected to bottom out in 2017–18

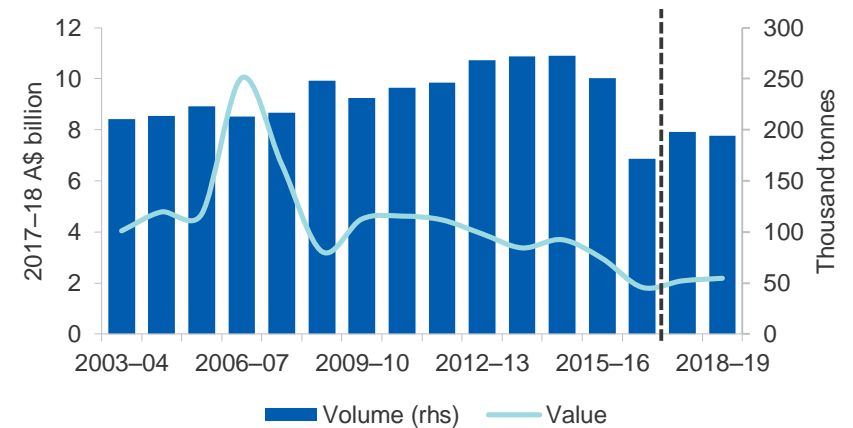
Australia's nickel export earnings declined by 20 per cent to \$2,334 million in 2016–17, largely reflecting a sharp decline in export volumes. The decline in export values reflects falls in both refinery and mine output, and particularly sharp declines in ores and concentrate exports. Export values are forecast to decline by a further 7 per cent, to \$2,166 million in 2017–18, due to the closure of Ravensthorpe and falls in production at other mines. However, some recovery is expected in 2018–19, with export values expected to rise by 10 per cent to \$2,389 million, as prices recover and production ramps up at Independence Group's Nova mine.

Figure 13.5: Australia's nickel production



Source: Department of Industry, Innovation and Science (2017)

Figure 13.6: Australia's nickel export volumes and values



Source: ABS (2017) International Trade in Goods and Services, 5368.0; Department of Industry, Innovation and Science (2017)

**Table 13.1 Nickel outlook**

World	Unit	2016	2017 f	2018 f	2019 f	Annual percentage change		
						2017 f	2018 f	2019 f
Production								
– mine	kt	1,990	2,150	2,278	2,378	8.0	5.9	4.4
– refined	kt	1,984	2,135	2,266	2,366	7.6	6.1	4.4
Consumption	kt	2,033	2,146	2,256	2,356	5.6	5.1	4.4
Stocks	kt	555	533	533	533	-4.0	0.0	0.0
– weeks of consumption		14.2	12.9	12.3	11.8	-9.0	-4.5	-4.1
Price LME								
– nominal	US\$/t	9,599	9,671	10,253	11,008	0.8	6.0	7.4
	Usc/lb	435	439	465	499	0.8	6.0	7.4
– real b	US\$/t	9,795	9,671	10,042	10,549	-1.3	3.8	5.0
	Usc/lb	444	439	456	478	-1.3	3.8	5.0
Australia	Unit	2015–16	2016–17	2017–18 f	2018–19 f	2016–17	2017–18 f	2018–19 f
Production								
– mine cs	kt	216	201	180	182	-7.2	-10.3	1.0
– refined	kt	142	106	114	111	-25.5	8.1	-2.4
– intermediate	kt	44	36	40	38	-16.9	10.2	-4.6
Export volume ds	kt	250	172	186	183	-31.4	8.6	-1.9
– nominal value s	A\$m	2,909	2,334	2,166	2,389	-19.8	-7.2	10.3
– real value es	A\$m	3,023	2,384	2,166	2,334	-21.1	-9.1	7.7

Notes: **b** In 2017 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 2017–18 financial year Australian dollars; **f** Forecast, **s** Estimate, **z** Projection

Source: ABS (2017) International Trade in Goods and Services, Australia, Cat. No. 5368.0; Company reports; Department of Industry, Innovation and Science; International Nickel Study Group (2017); LME (2017); World Bureau of Metal Statistics (2017).