Nickel Mines (NIC)

Rating: Buy | Risk: High | Price Target: $1.04

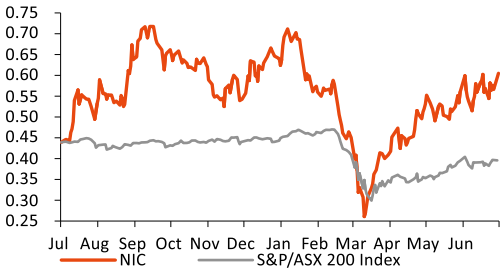
Dancing with the Dragon - Initiation of Coverage

Key Information	
Current Price ($ps)	0.60
12m Target Price ($ps)	1.04
52 Week Range ($ps)	0.26 - 0.72
Target Price Upside (%)	73.1%
TSR (%)	73.1%
Reporting Currency	USD
Market Cap ($m)	999
Sector	Materials
Avg Daily Volume (m)	3.1
ASX 200 Weight (%)	0.06%

Fundamentals				
YE 31 Dec (USD)	FY19A	FY20E	FY21E	FY22E
Sales ($m)	236	484	674	682
NPAT ($m)	57	75	235	212
EPS (cps)	3.5	4.0	11.0	10.0
EPS Growth (%)	(42.3%)	12.1%	177.6%	(9.6%)
DPS (cps) (AUD)	0.0	0.0	8.6	10.0
Franking (%)	0%	0%	0%	0%

Ratios				
YE 31 Dec	FY19A	FY20E	FY21E	FY22E
P/E (x)	13.0	10.6	3.8	4.2
EV/EBITDA (x)	6.7	4.8	2.1	2.1
Div Yield (%)	0.0%	0.0%	14.3%	16.7%
Payout Ratio (%)	0.0%	0.0%	54.4%	70.2%

Price Performance				
YE 31 Dec	1 Mth	2 Mth	3 Mth	1 Yr
Relative (%)	7.8%	1.8%	32.6%	47.2%
Absolute (%)	8.1%	13.9%	47.1%	36.3%
Benchmark (%)	0.3%	12.1%	14.5%	(10.9%)



Price performance indexed to 100 *Source:*

Major Shareholders	
Shanghai Decent (Tsingshan)	18.6%
PT Karunia Bara Perkasa	16.1%
BlackRock Investment Management (UK) Ltd	6.5%
Norm Seckold	5.8%
Shanghai Wanlu	5.7%

Event

We initiate coverage on Nickel Mines (NIC) with a Buy recommendation and A$1.04ps price target. Despite the name, Nickel Mines is more of an industrial producer than a mining company. Nickel Mines produces nickel pig iron (NPI) from Rotary Kiln Electric Furnaces (RKEF) in the Indonesia Morowali Industrial Park (IMIP) in Sulawesi. Nickel Mines operates in partnership with the world's largest stainless steel producer Tsingshan, which is also a strategic shareholder in Nickel Mines. Nickel mines IPO'd on the ASX in August 2018 at A$0.35ps.

Highlights

- Nickel is predominantly used in the production of stainless steel (69% of consumption) but is finding growing use as a cathode in lithium ion batteries. The electrification of light vehicles is likely to see increased demand for nickel. Consensus forecasts expect the nickel price to increase ~30% from today's spot price at US$5.90/lb to an incentive price of ~US$7.50/lb once the COVID-19 demand shocks abate. We agree.
- Nickel Mines has an 80% economic interest in two RKEF projects in the IMIP. The Chinese steel company Tsingshan holds the other 20%. The Hengjaya project started in early-2019 and Ranger in mid-2019. Both projects have now reached steady state operation and are each producing ~21ktpa nickel (100% basis) at a cost of around US$7,750/t. Nickel Mines share totals 33-34ktpa which makes the company the largest pure play exposure to nickel on the ASX.
- Tsingshan has pioneered the use of RKEF technology to produce molten pig iron as a direct feed to stainless steel production facilities and has invested billions in the IMIP in Sulawesi. Tsingshan owns an 18.6% interest in Nickel Mines.
- Some investors may be concerned that Nickel Mines operates in Indonesia, in partnership with a Chinese company and with Indonesian and Chinese strategic shareholders. However, Nickel Mines is 'inside the fence' and not an outsider. The relationship with Tsingshan is strong, and Tsingshan has a strong relationship with Indonesian authorities.
- Even at current low nickel prices of ~US$5.90/lb the projects are strongly free cash flow positive (US$160mpa, 100% basis combined). At a mid-cycle nickel price of US$6.50/lb, the two projects will generate combined free cash flow of about US$210mpa (100% basis).
- We value each RKEF project at US$947m (100%, NPV @ 11%) and Nickel Mines recently exercised an option in increase its economic interest from 60% to 80% in both projects for US$120m, plus a $30m payment for retained earnings. Nickel Mines funded the acquisition with a US$150m equity raise at A$0.50ps.
- At spot nickel prices (US$5.90/lb), Nickel Mines is trading on a PE multiple of just 7.6x and an EV/EBITDA multiple of 4.5x. At mid-cycle nickel prices of US$6.50/lb these multiples drop to 5.4x PE and 3.3x EV/EBITDA. If nickel lifts to US$7.50/lb, as we expect, then the multiples reduce to 3.7x PE and 2.3x EV/EBITDA.

Recommendation

We initiate coverage on Nickel Mines (NIC) with a Buy recommendation and A$1.04ps price target. Catalysts for the stock to reach our price target include;

- Ongoing stability of operations now that both the Hengjaya and Ranger RKEF projects have reached steady state.
- Improvements in the nickel price from cyclical lows.
- Commencement of dividend payments, probably in 2021.

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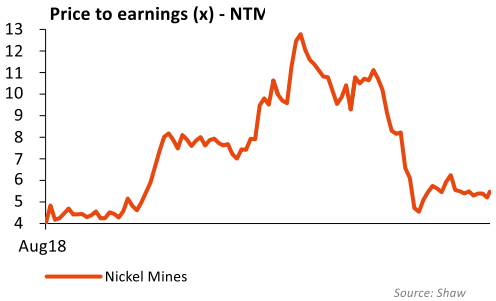
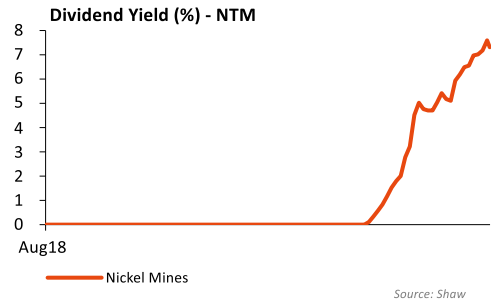
Nickel Mines
Materials
Materials
FactSet: NIC-AU / Bloomberg: NIC AU

Key Items	Data
Recommendation	BUY
Risk	HIGH
Price ($ps)	0.60
Target Price ($ps)	1.04
52 Week Range ($ps)	0.26 - 0.72
Shares on Issue (m)	1,665
Market Cap ($m)	999
Enterprise Value ($m)	931
TSR (%)	73.1%

Company Description

Nickel Mines Ltd. is a nickel producer with assets in Indonesia and operates in partnership with Tsingshan, the world's largest stainless steel producer. Nickel Mines produces nickel ore from the Hengjaya Mine which supplies feedstock to the Indonesia Morowali Industrial Park (IMIP). The company's main asset is an 80% stake in the Hengjaya and Ranger rotary kiln electric furnaces (RKEF) located in IMIP. The company was founded on September 12, 2007 and is headquartered in Sydney, Australia.





Financial Year End: 31 December

Investment Summary (USD)	FY19A	FY19A	FY20E	FY21E	FY22E
EPS (Reported) (cps)	**6.1**	**3.5**	**4.0**	**11.0**	**10.0**
EPS (Underlying) (cps)	**6.1**	**3.5**	**4.0**	**11.0**	**10.0**
EPS (Underlying) Growth (%)	n/a	(42.3%)	12.1%	177.6%	(9.6%)
PE (Underlying) (x)	**4.7**	**13.0**	**10.6**	**3.8**	**4.2**
EV / EBIT (x)	**48.0**	**8.1**	**6.1**	**2.4**	**2.4**
EV / EBITDA (x)	**31.9**	**6.7**	**4.8**	**2.1**	**2.1**
DPS (cps) (AUD)	0.0	0.0	0.0	8.6	10.0
Dividend Yield (%)	0.0%	0.0%	0.0%	14.3%	16.7%
Franking (%)	0%	0%	0%	0%	0%
Payout Ratio (%)	0.0%	0.0%	0.0%	54.4%	70.2%

Profit and Loss (USD) (m)	FY19A	FY19A	FY20E	FY21E	FY22E
Sales	65	236	484	674	682
Sales Growth (%)	*n/a*	*263.5%*	*105.2%*	*39.2%*	*1.1%*
Other Operating Income	3	1	1	1	1
EBITDA	**20**	**97**	**136**	**307**	**304**
EBITDA Margin (%)	*31.5%*	*41.2%*	*28.1%*	*45.5%*	*44.6%*
Depreciation & Amortisation	(7)	(16)	(30)	(30)	(30)
EBIT	**14**	**81**	**106**	**277**	**274**
EBIT Margin (%)	*21.0%*	*34.2%*	*21.9%*	*41.1%*	*40.2%*
Net Interest	58	11	(5)	(3)	4
Pretax Profit	72	91	101	274	279
Minorities	6	35	26	39	39
NPAT Underlying	**66**	**57**	**75**	**235**	**212**
Significant Items	0	0	0	0	0
NPAT Reported	**66**	**57**	**75**	**235**	**212**

Cashflow (USD) (m)	FY19A	FY19A	FY20E	FY21E	FY22E
EBIT	14	81	106	277	274
Payments to Suppliers	(28)	(170)	(349)	(368)	(378)
Receipts from Customers	33	213	485	675	683
Tax Paid	(1)	(5)	0	0	0
Net Interest	0	0	0	2	8
Depreciation & Amortisation	0	0	0	0	0
Other	0	0	(8)	(10)	1
Operating Cashflow	**4**	**38**	**129**	**299**	**313**
Capex	(20)	(30)	(13)	(3)	(3)
Acquisitions and Investments	(120)	(1)	(150)	0	0
Disposal of Fixed Assets/Investments	10	7	0	0	0
Other	(11)	0	0	0	0
Investing Cashflow	**(141)**	**(24)**	**(163)**	**(3)**	**(3)**
Equity Raised / Bought Back	173	(0)	150	0	0
Dividends Paid	0	0	0	(43)	(149)
Change in Debt	(2)	(30)	0	(30)	(35)
Other	15	17	(5)	(5)	(3)
Financing Cashflow	**186**	**(13)**	**145**	**(77)**	**(187)**
Exchange Rate Effect	(1)	(0)	0	0	0
Net Change in Cash	**48**	**1**	**111**	**219**	**123**

Balance Sheet (USD) (m)	FY19A	FY19A	FY20E	FY21E	FY22E
Cash	49	50	161	379	502
Accounts Receivable	44	97	126	129	131
Inventory	9	56	115	129	131
Other Current Assets	7	1	1	1	1
PPE	340	629	732	705	678
Total Assets	**532**	**897**	**1,229**	**1,438**	**1,537**
Accounts Payable	42	52	133	140	144
Short Term Debt	4	4	4	4	0
Long Term Debt	0	61	61	31	0
Income Taxes Payable	0	1	1	1	1
Other	30	57	57	58	85
Total Liabilities	**77**	**175**	**256**	**234**	**230**
Total Shareholder Equity	**455**	**722**	**973**	**1,205**	**1,307**

Ratios	FY19A	FY19A	FY20E	FY21E	FY22E
ROE (%)	n/a	15.3%	14.0%	31.3%	24.2%
Gearing (%)	(16.8%)	3.4%	(17.2%)	(68.8%)	(123.8%)
Net Debt / EBITDA (x)	(2.2)	0.2	(0.7)	(1.1)	(1.7)

Nickel Mines changed from a June balance date to December balance date in 2019. The first set of FY19 financials in the above table is for the 12 month period to 30-June-2019, the second is for the six month period to 31-Dec-19.

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Nickel Mines Key financials

Profit & Loss	FY19	CY19*	FY20f	FY21f	FY22f
Revenue	64.9	236.1	484.5	674.3	681.7
Expenses	-44.5	-138.9	-348.1	-367.2	-377.4
Underlying EBITDA	**20.5**	**97.2**	**136.3**	**307.1**	**304.3**
Depreciation & Amort	-6.8	-16.4	-30.0	-30.0	-30.0
Underlying EBIT	**13.6**	**80.8**	**106.3**	**277.1**	**274.3**
Net Interest	58.3	10.7	-4.9	-3.0	4.5
Profit Before Tax	**71.9**	**91.5**	**101.5**	**274.1**	**278.8**
Tax	-0.1	-0.1	-0.1	-0.3	-27.9
NPAT (Underlying)	**71.8**	**91.3**	**101.4**	**273.8**	**250.9**
Minorities	-6.3	-34.8	-26.0	-39.1	-38.7
NPAT (reported)	**65.5**	**56.5**	**75.4**	**234.7**	**212.2**

Balance Sheet	FY19	CY19*	FY20f	FY21f	FY22f
Cash	49.0	49.8	160.7	379.5	502.3
Net Receivables	43.7	97.2	126.1	129.3	130.7
Other	15.5	57.5	116.7	130.6	132.0
Current Assets	**108.2**	**204.6**	**403.5**	**639.4**	**765.1**
Property, Plant & Equipment	340.1	628.5	731.5	704.5	677.5
Other	83.6	64.4	94.4	94.4	94.4
Non Current Assets	**423.7**	**692.9**	**825.9**	**798.9**	**771.9**
Total Assets	**531.9**	**897.5**	**1,229.5**	**1,438.3**	**1,537.0**
Trade Creditors	42.2	52.5	133.0	140.3	144.3
Borrowings	4.2	4.3	4.3	4.3	0.0
Other	0.8	1.3	1.3	1.3	1.3
Current Liabilities	**47.2**	**58.1**	**138.6**	**146.0**	**145.6**
Borrowings	0.0	60.7	60.7	30.7	0.0
Other	29.9	56.6	56.7	56.9	84.8
Non Current Liabilities	**29.9**	**117.2**	**117.3**	**87.6**	**84.8**
Net Assets	**454.8**	**722.1**	**973.5**	**1,204.7**	**1,306.6**
Shareholder Capital	275.9	315.5	465.5	465.5	465.5
Retained earnings	36.3	92.8	168.1	360.3	423.4
Minorities/others	142.6	313.9	339.9	379.0	417.7
Total Equity	**454.8**	**722.1**	**973.5**	**1,204.7**	**1,306.6**

Cash Flow	FY19	CY19*	FY20f	FY21f	FY22f
Receipts	33.4	212.7	485.5	675.3	682.7
Payments	-28.4	-169.9	-349.1	-368.2	-378.4
Other Operating Cash Flow	-0.9	-4.6	-7.1	-8.2	8.7
Operating Cash Flow	**4.1**	**38.2**	**129.3**	**298.9**	**313.0**
Capex	-19.5	-29.6	-13.0	-3.0	-3.0
Other Investing Cash Flow	-121.1	5.8	-150.0	0.0	0.0
Investing Cash Flow	**-140.6**	**-23.8**	**-163.0**	**-3.0**	**-3.0**
Dividends Paid	0.0	0.0	0.0	-42.6	-149.0
Net Borrowings	-2.0	-29.9	0.0	-30.0	-35.0
Share capital raised	172.8	-0.4	150.0	0.0	0.0
Other	15.0	17.0	-5.4	-4.6	-3.1
Financing Cash flow	**185.8**	**-13.3**	**144.6**	**-77.2**	**-187.1**
Total Cash Change	49.3	1.1	110.9	218.7	122.9

Company Information	
Financial Year End Date	30 June
Share Price	0.60
Market Capitalisation	1,277
Valuation	1.04
Recommendation	Buy

Per Share Data (c)	FY19	CY19*	FY20f	FY21f	FY22f
Shares (m)	462	1,665	2,128	2,128	2,128
Normalised EPS	-0.8	3.5	4.0	11.0	10.0
Dividends	0.0	0.0	0.0	6.0	7.0
Dividend Yield (%)	0.0%	0.0%	0.0%	10.0%	11.7%
Book Value	0.16	0.43	0.46	0.57	0.61
P/E (x)	-44.2	11.6	10.1	3.9	4.5
EV/EBITDA (x)	-59.9	6.1	5.6	2.7	2.8

DCF Valuation - fully diluted @ 12%	US$m	A$m	A$ps
Hengjaya Mine	17	26	0.01
Hengjaya RKEF	733	1,127	0.53
Ranger RKEF	732	1,126	0.53
Corporate costs	-30	-46	-0.02
Net debt	-15	-23	-0.01
Total Valuation	1,437	2,210	1.04

Assumptions	FY19	CY19*	FY20f	FY21f	FY22f
Prices					
A$/US$	0.77	0.69	0.67	0.72	0.74
Nickel (USc/lb)	566	716	551	757	765
Nickel (US$/t)	12,474	15,785	12,153	16,689	16,865

Operating Metrics	FY19	CY19*	FY20f	FY21f	FY22f
NPI produced (kt)	42	152	304	304	304
Grade (%)	13.8%	13.6%	13.8%	13.8%	13.8%
Contained nickel (kt)	5.8	21.0	42.0	42.0	42.0
Average price (US$/t)		14,207	10,938	15,020	15,179
Average cost (US$/t)		7,690	7,750	7,924	8,103
Average margin (US$/t)		6,516	3,188	7,096	7,076

Financial metrics (%)	FY19	CY19*	FY20f	FY21f	FY22f
EBITDA margin	-9.6%	41.2%	28.1%	45.5%	44.6%
EBIT margin	-12.0%	34.2%	21.9%	41.1%	40.2%
ROIC	0.0%	8.4%	9.2%	23.5%	23.9%
Return on Assets	-3.7%	18.2%	9.5%	20.5%	16.9%
Return on Equity	-3.9%	21.9%	12.0%	25.1%	20.0%

Balance sheet metrics	FY19	CY19*	FY20f	FY21f	FY22f
Net Debt (m)	-1	15	-96	-344	-502
ND / ND+E	0.0%	2.1%	0.0%	0.0%	0.0%

* Nickel Mines changed to a Dec-31 balance date in CY19, the CY19 data is for a six month period to 31-Dec-19

Executive Summary

We initiate coverage on Nickel Mines (NIC) with a Buy recommendation and A$1.04ps price target. Nickel Mines produces nickel pig iron (NPI) from Rotary Kiln Electric Furnaces (RKEF) in the Indonesia Morowali Industrial Park (IMIP) in Sulawesi. Nickel Mines operates in partnership with the world's largest stainless steel producer Tsingshan, which is also a strategic shareholder in Nickel Mines. Nickel mines IPO'd in August 2018 at A$0.35ps.

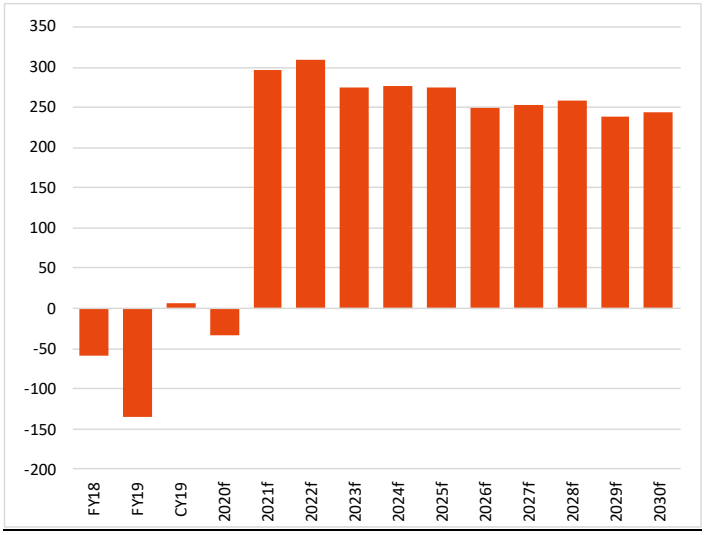
Core drivers & catalysts

- Nickel is predominantly used in the production of stainless steel (69% of consumption) but is finding growing use as a cathode in lithium ion batteries. The electrification of light vehicles is likely to see increased demand for nickel. Consensus forecasts expect the nickel price to increase ~30% from today's spot price at US$5.90/lb to an incentive price of ~US$7.50/lb once the COVID-19 demand shocks abate. We agree.
- Nickel Mines has an 80% economic interest in two RKEF projects in the IMIP. Even at current low nickel prices of ~US$5.90/lb the projects are strongly free cash flow positive (US$160mpa, 100% basis combined). At a mid-cycle nickel price of US$6.50/lb, the two projects will generate combined free cash flow of about US$210mpa (100% basis).
- We value each RKEF project at US$947m (100%, NPV @ 11%) and Nickel Mines recently exercised an option to increase its economic interest from 60% to 80% in both projects for US$120m.
- At spot nickel prices (US$5.90/lb), Nickel Mines is trading on a PE multiple of just 7.6x and an EV/EBITDA multiple of 4.5x. At mid-cycle nickel prices of US$6.50/lb these multiples drop to 5.4x PE and 3.3x EV/EBITDA. If nickel lifts to US$7.50/lb, as we expect, then the multiples reduce to 3.7x PE and 2.3x EV/EBITDA.

Key risks

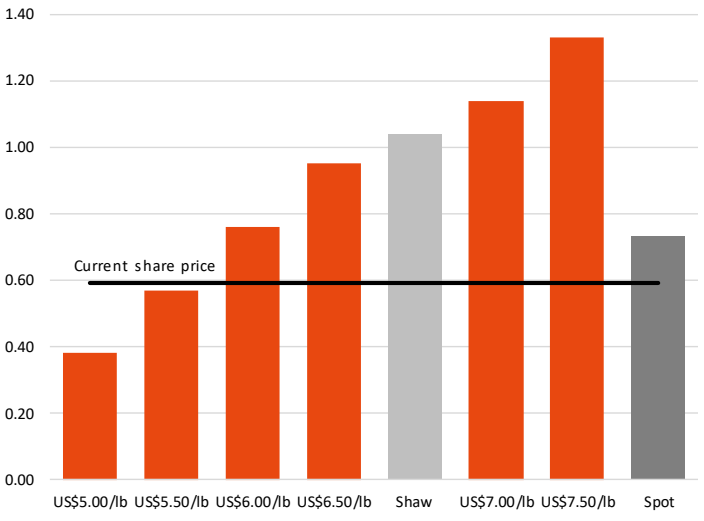
- The nickel price is volatile and is often driven by arbitrary policy changes such as the Indonesian export ban. As such, the price of nickel is relatively difficult to forecast and the actual price may differ substantially from our forecasts.
- Some investors may be concerned that the company operates in Indonesia, in partnership with a Chinese company and with Indonesian and Chinese strategic shareholders. However, it Nickel Mines is 'inside the fence' and not an outsider. The relationship with Tsingshan is strong, and Tsingshan has a strong relationship with Indonesian authorities.
- Smaller companies carry more significant 'key personnel' risk than larger organisations. If senior management depart the company, then it could delay projects or exacerbate operational risks.

Figure 1: Free cash flow (US$m) – including acquisition costs



Source: Company data & Shaw and Partners analysis

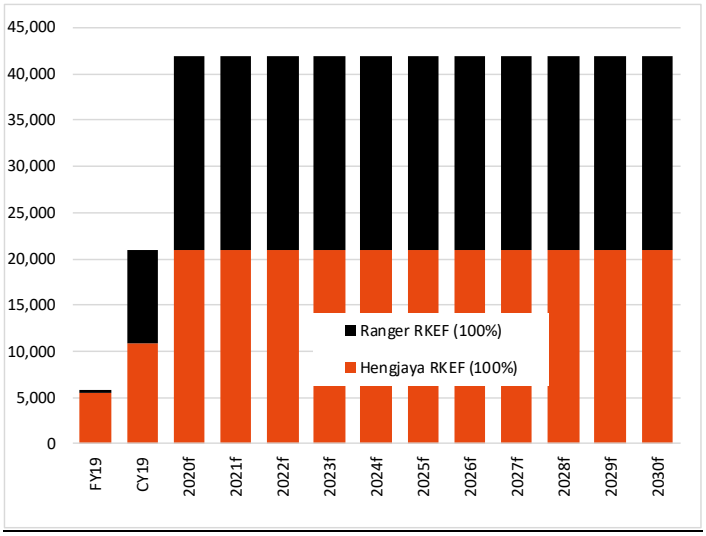
Figure 2: Valuation sensitivity to nickel price (A$ps)



Source: Company data & Shaw and Partners analysis

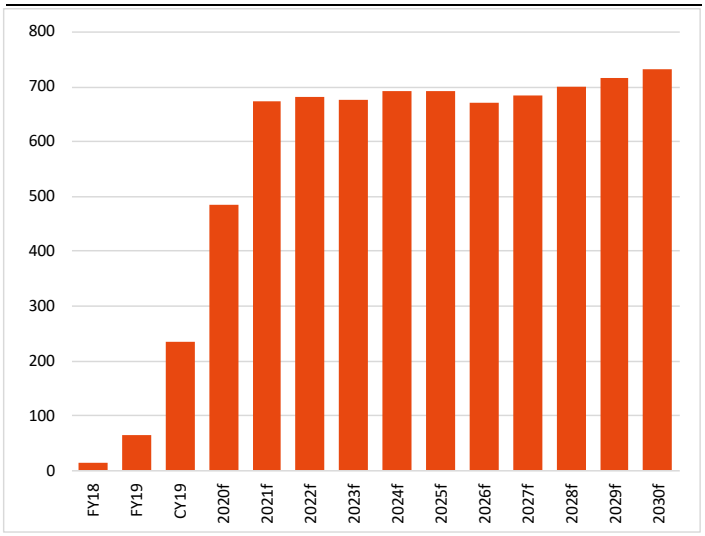
Nickel Mines in Charts

Figure 3: Production (kt) – steady state from CY20



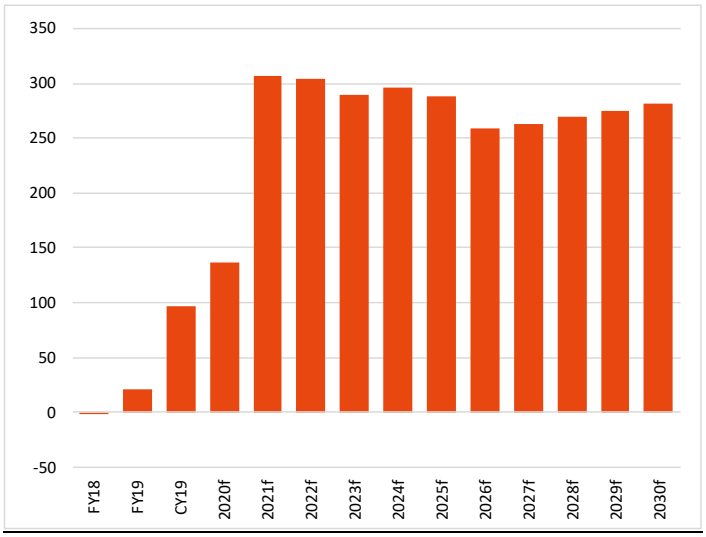
Source: Company data & Shaw and Partners analysis

Figure 4: Revenue (US$m) – US$700pa revenue at steady state



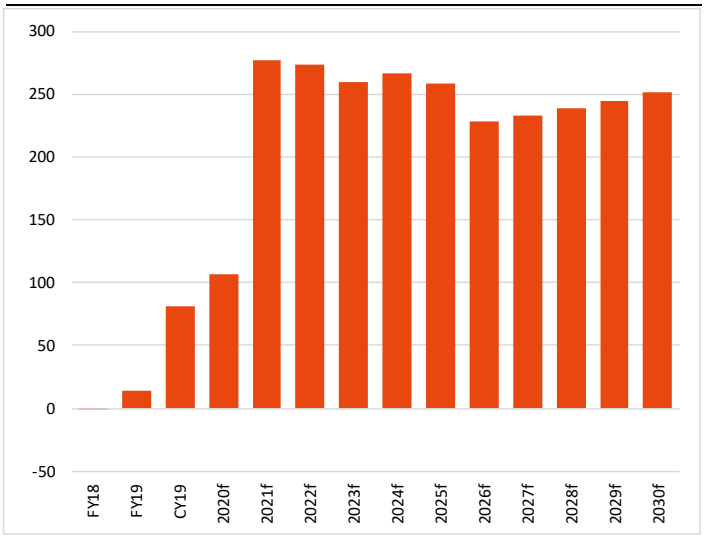
Source: Company data & Shaw and Partners analysis

Figure 5: EBITDA (US$m) – US$250-300mpa



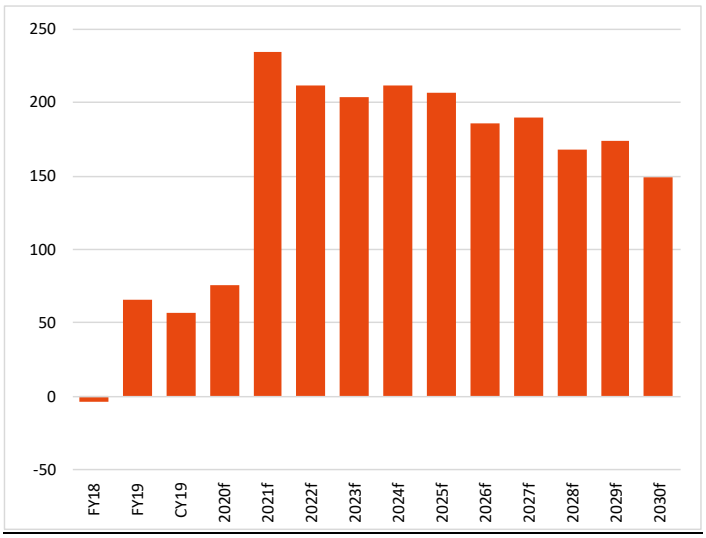
Source: Company data & Shaw and Partners analysis

Figure 6: EBIT (US$m) – similar profile to EBITDA



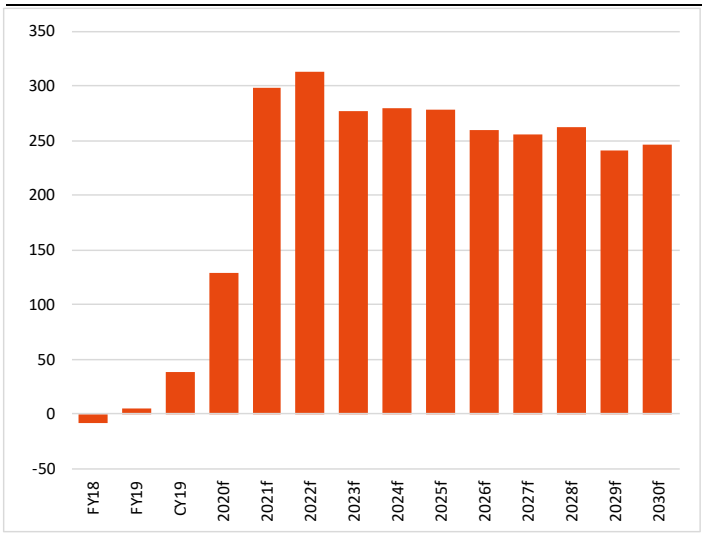
Source: Company data & Shaw and Partners analysis

Figure 7: NPAT (US$m) – ~US$250m NPAT from 2021



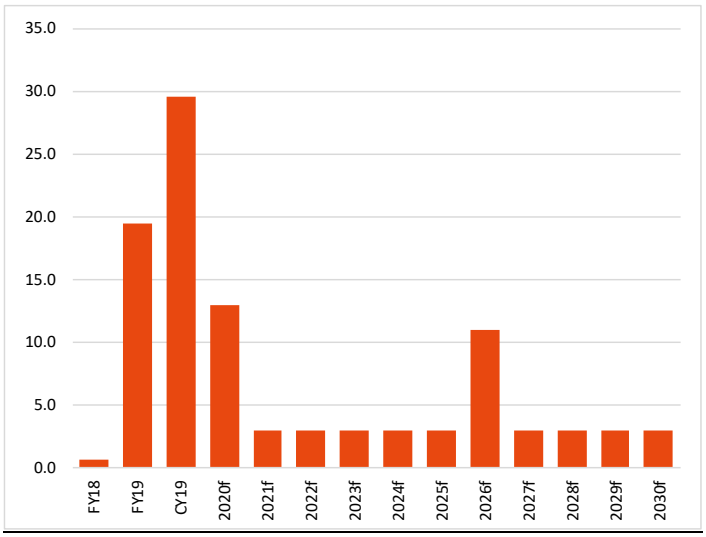
Source: Company data & Shaw and Partners analysis

Figure 8: Operating cash flow (US$m) – growth in line with EBITDA



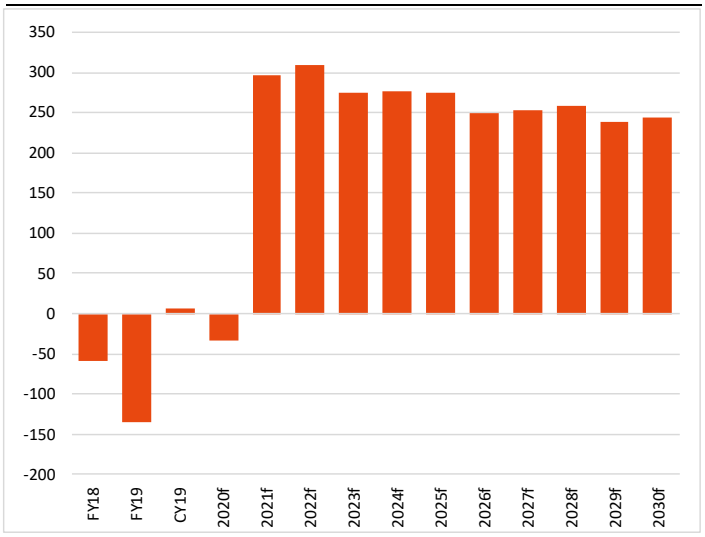
Source: Company data & Shaw and Partners analysis

Figure 9: Capex (US$m) – low capital intensity operations



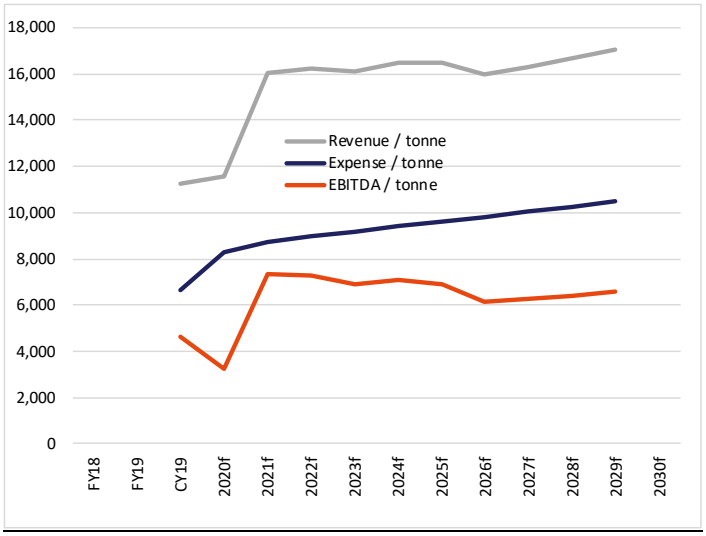
Source: Company data & Shaw and Partners analysis

Figure 10: Free cash flow (US$m) – dividends or further investment?



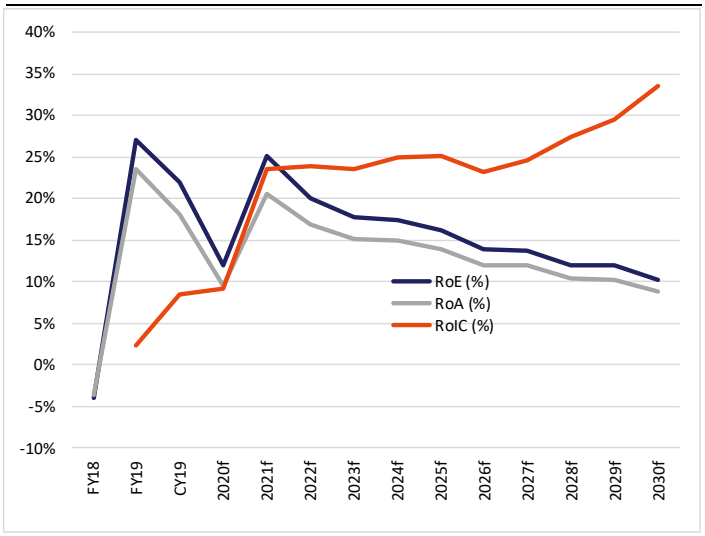
Source: Company data & Shaw and Partners analysis

Figure 11: Pricing, costs and margin (US$/t)



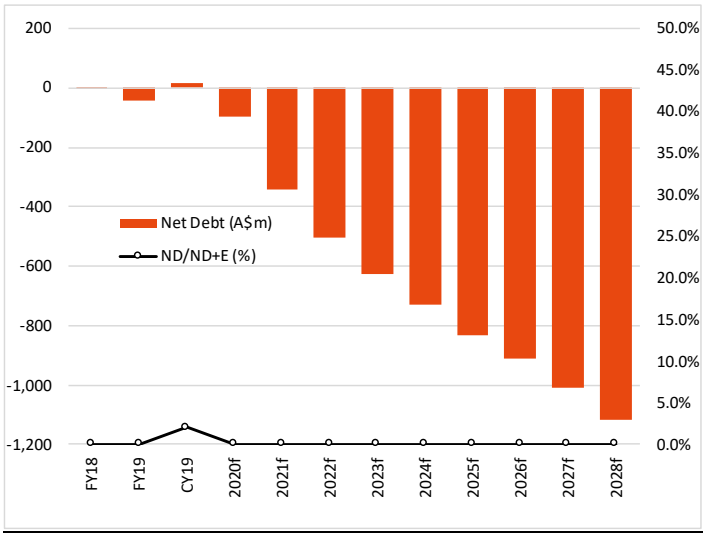
Source: Company data & Shaw and Partners analysis

Figure 12: Returns (%)



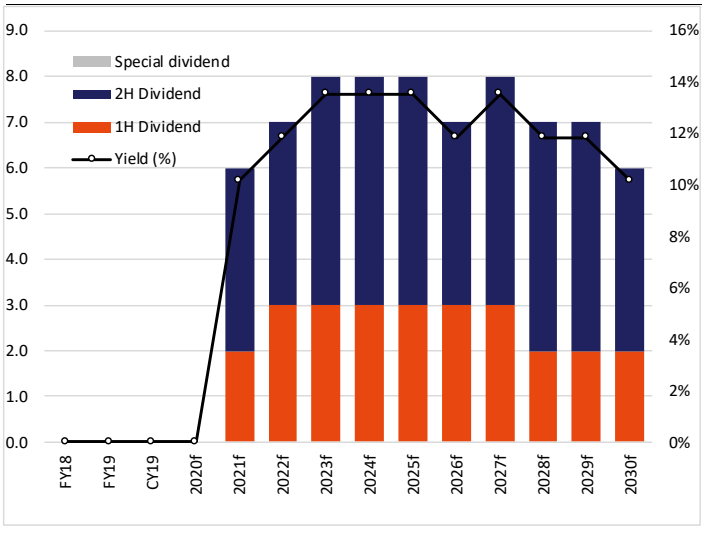
Source: Company data & Shaw and Partners analysis

Figure 13: Net debt and gearing (US$m, %)



Source: Company data & Shaw and Partners analysis

Figure 14: Dividends and yield (A$cps, %) – we assume a payout of 50% in CY21, increasing to 85% by CY23



Source: Company data & Shaw and Partners analysis

Nickel 101

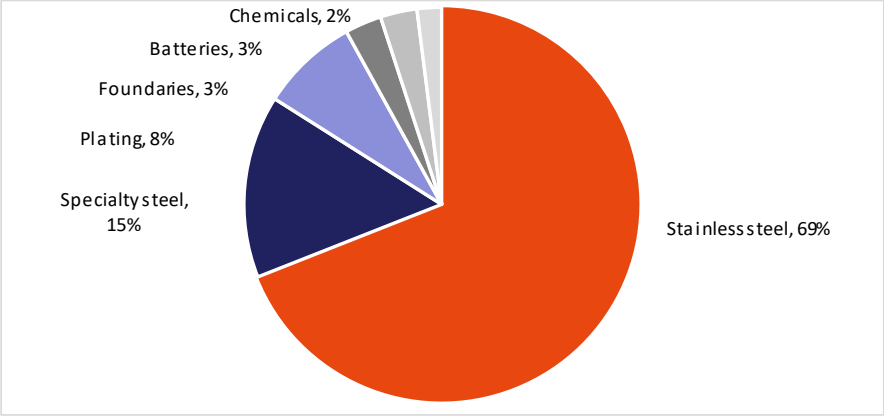
Nickel is a naturally-occurring metallic element with a silvery-white, shiny appearance. It is the fifth-most common element on earth and occurs extensively in the earth's crust and core. Nickel occurs in nature principally as oxides, sulphides and silicates. Primary nickel is produced and used in the form of ferro-nickel, nickel oxides, nickel pig iron (NPI) and nickel sulphate. Nickel is also recyclable, and secondary or scrap nickel accounts for around 20% of global nickel supply.

The name 'nickel' is derived from the German 'Kupfernickel' or 'Devil's copper' – so called because early miners discovered a nickel ore which they thought contained copper, but of course they couldn't recover copper from it.

Nickel usage – dominated by stainless steel

Nickel is ductile and strong, so it can be readily formed into a variety of shapes while retaining its resistance to impact and abrasive forces. Nickel is also inert due to the metal's ability to form an oxide layer. This oxide layer prevents further corrosion, which is why nickel is considered a corrosion-resistant metal in most applications.

Figure 15: Nickel usage



Source: Nickel Institute

The main usage of nickel is in the production of stainless steel, but the area of strongest growth is likely to be in the production of lithium ion batteries. Usage of nickel includes;

- **Stainless steel (69% of global usage)** – Stainless steel normally contains about 10 percent nickel, which gives steel its corrosion resistance, along with additional strength.

- **Specialty steel and alloys (15%)** – Nickel is used in alloys that contain copper, aluminum, lead, silver, gold, cobalt and chromium. Its corrosion resistance and strength make it a versatile addition to most other metals. Inconel contains 50-70% nickel and is extremely resistant to temperature, pressure and corrosion. It is extensively used in jet engines and rockets, as well as components that are exposed to corrosive hydrocarbons.

- **Electroplating applications (8%)** – Electroplating nickel onto tools and metal surfaces that require additional corrosion resistance, for example plumbing pipes and fixtures. Nickel plated plumbing can withstand long term exposure to moisture rich environments.

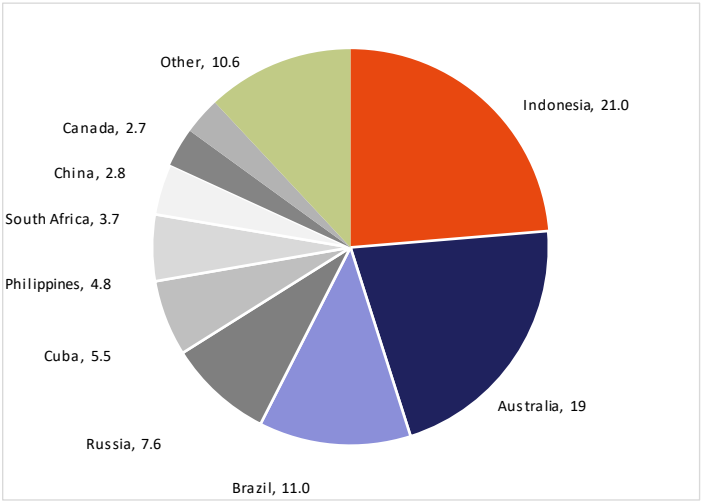
- **Batteries (3%)** – Nickel has a high energy density when used as the cathode in lithium ion batteries, although thermal instability means it is usually mixed with manganese, cobalt and/or aluminium. It is the potential growth in electric vehicle penetration, and hence battery demand, that provides most upside to nickel consumption.

Nickel reserves and production

Nickel is a relatively abundant metal, with global reserves of about 89Mt spread across the globe, although Indonesia, Australia and Brazil account for over half the known reserves.

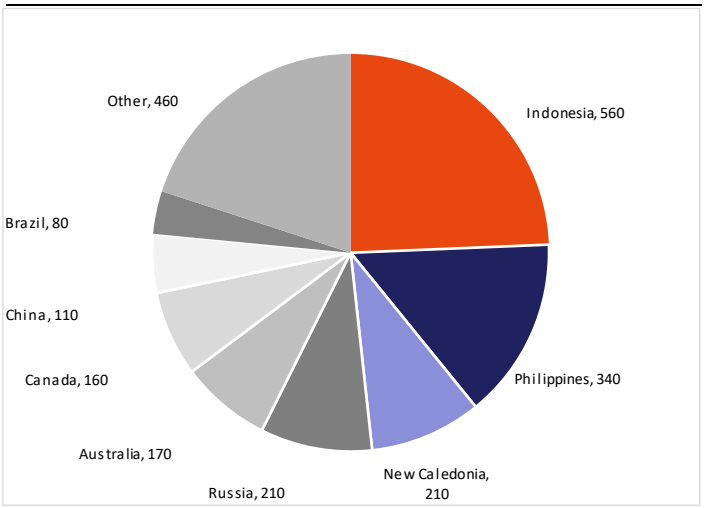
Primary nickel production in 2019 was around 2.4Mt, with Indonesia, the Philippines, Russia, Australia and Canada the major producers.

Figure 16: Global nickel reserves (Mt)



Source: US Geological Survey

Figure 17: Global Nickel production (kt)



Source: US Geological Survey

Indonesian export bans

A key driver of the nickel market in 2019 was the Indonesian government's decision to ban the export of low grade ores. The ban was originally scheduled for 2022, but was brought forward to 2020. The ban is intended to stimulate domestic processing of ore, produce value-added nickel products, and incentivise downstream industry within Indonesia (e.g. steel production, batteries and electric vehicles).

It is estimated that over half of Indonesia's nickel is processed in the country, but approximately 220kt is exported and is affected by the ban. This represents just under 10% of global demand.

The ban will impact Chinese nickel pig iron (NPI) production since Chinese producers are heavily reliant on Indonesian ores. The impact over time is likely to be a relocation of NPI production from China to Indonesia, but this will create supply uncertainty in the short term.

In anticipation of the ban, Chinese stainless steel producers began building up nickel inventories and there were substantial drawdowns of LME stockpiles towards the end of 2019. Earlier in 2020, BHP was reporting that there had been a large build nickel ore stocks at Chinese ports and a sizeable build–up of finished stainless steel stocks at Chinese producers. These stockpiles are now being drawn down and Chinese demand for imported nickel is likely to increase in 2021.

Potential for the Philippines?

With the Indonesian export ban, a key question is whether the Philippines can benefit from the supply gap and ramp up production.

The Philippines is the world's second largest producer, but suffered a sharp contraction in production in 2016 when the country's Department of Environment and Natural Resources launched an audit process of the mining industry. This resulted in the closure of 19 nickel mines and a drop in nickel production of over 100kt.

It is possible that some of these mines could restart to fill the gap, although the lower grade of nickel ore in the Philippines is a problem for Chinese operators, as it affects the

ability of nickel pig iron producers to achieve the necessary purity mix for stainless steel production.

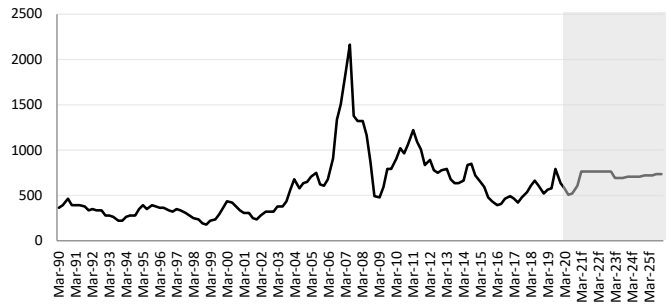
Nickel price

Taking in account the demand implications of production growth in stainless steel and rising penetration of electric vehicles, coupled with the supply implications of the Indonesia ore ban, most observers expect the nickel market to be undersupplied in the medium to long term with positive implications for the nickel price. We agree.

In the short term, the nickel price is recovering from the COVID-19 related lows due to improving demand from China. However, the consensus view is that the nickel market will remain in a small surplus (~50kt) of production in 2020 before moving into deficit in 2021.

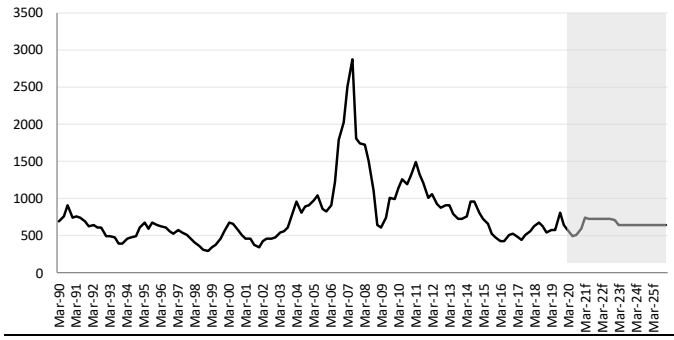
There is likely to be a period of incentive pricing when the nickel price will need to be high enough to incentivise new supply into the market. We assume a period of elevated prices in the mid-2020s before reversion to our long term price later in the decade.

Figure 18: Nickel price (USc/lb, nominal)



Source: Factset, Shaw and Partners forecast

Figure 19: Nickel price (USc/lb, real 2020$)



Source: Factset, Shaw and Partners forecast

Figure 20: Shaw and Partners – nickel price forecasts

Assumptions	CY19	2020f	2021f	2022f	2023f	2024f	2025f	LT Real
Nickel price (USc/lb)	716	551	757	765	756	774	777	642
Nickel price (US$/t)	15,785	12,153	16,689	16,865	16,675	17,053	17,122	14,158
AUD/USD	0.69	0.67	0.72	0.74	0.74	0.75	0.75	0.75

Source: Factset, Shaw and Partners forecasts

Nickel Mines overview

Nickel Mines has 80% economic interests in the Hengjaya Nickel and Ranger Nickel projects, both of which operate Rotary Kiln Electric Furnace (RKEF) plants producing NPI within the Indonesia Morowali Industrial Park (IMIP) in Sulawesi. Nickel Mines also holds an 80% economic interest in the nearby Hengjaya Nickel Mine.

The company listed on the ASX via an initial public offer (IPO) in August 2018 raising A$200m at A$0.35ps and valuing the company at A$463m.

Nickel Mines started in 2009 as an explorer, developer and producer of DSO laterite nickel ore from the Hengjaya nickel mine to supply nickel pig iron producers in China. However, in 2014 the Indonesian government implemented a ban on unprocessed minerals and the mine was put on care and maintenance.

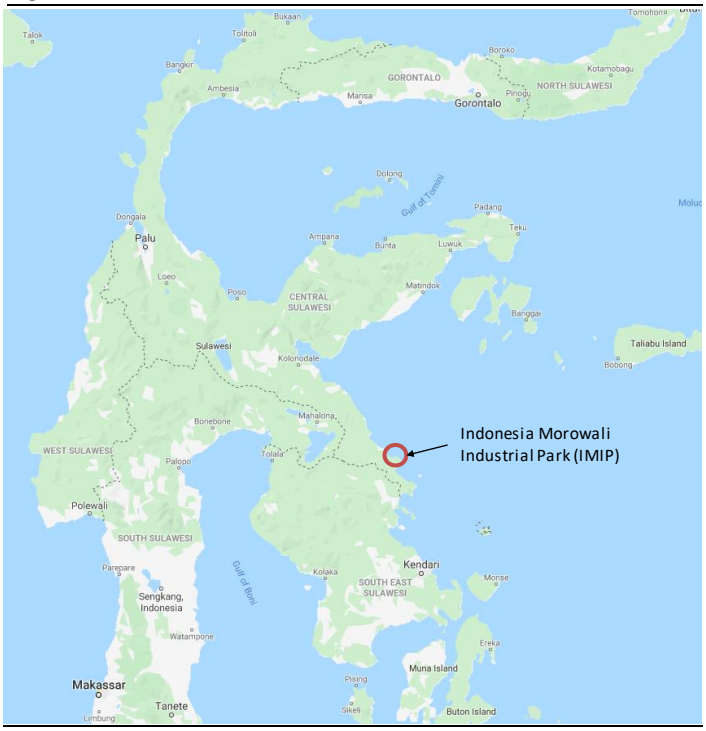
Fortunately for Nickel Mines, Tsingshan, the world's largest stainless steel producer, had moved ahead of the Indonesian export bans and begun construction of nickel pig iron (NPI) and steel making facilities at IMIP. This created a market for the Hengjaya mine, and Nickel Mines restarted operations in 2015.

The relationship between Tsingshan and Nickel Mines developed from being a raw material supplier to becoming partners in building RKEF capacity in the IMIP. Nickel Mines changed from being a relatively low value nickel miner to a higher value industrial processor of NPI. For Tsingshan the benefit was partnering with an Australian listed entity in which Tsingshan made a strategic investment and now owns 18.6%.

First production from the Hengjaya RKEF was on 31st January 2019 and from the Ranger RKEF on 31st May 2019. Both projects have now reached steady state operations and are producing above name-plate capacity at around 21kt of nickel per annum (100% basis). The cheap source of nickel ore and cheap power means that the nickel is being produced at a highly competitive cost of around US$7,750/t. The operations are strongly cash flow positive even at current low nickel prices of around US$13,000/t.

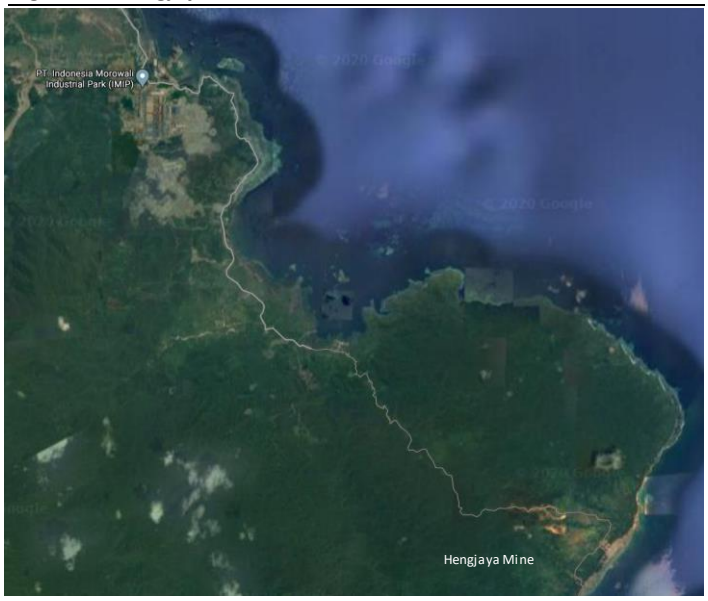
Nickel Mines recently exercised an option to acquire an additional 20% interest in the Hengjaya and Ranger RKEF projects for US$120m (plus retained earnings). The acquisition was funded by a US$150m (A$231m) equity raise at A$0.50ps.

Figure 21: Location of IMIP in Sulawesi, Indonesia



Source: Google Maps

Figure 22: Hengjaya mine located 12km from IMIP



Source: Google Maps

Tsingshan and the Indonesia Morowali Industrial Park (IMIP)

Tsingshan is the world's largest stainless steel producer. In 2019 Tsingshan produced approximately 10.6Mt of stainless steel out of a global market of 52.7Mt.

Tsingshan pioneered the large-scale use of nickel pig-iron, a semi-refined product that's a low-cost alternative to pure nickel, to make stainless steel. The major innovation was the Rotary Kiln Electric Furnace (RKEF) process which allows ore to be processed, smelted and directed into stainless steel furnaces in a continuous hot flow.

Tsingshan established a clear first mover advantage over its domestic and global peers in the stainless steel and nickel industry through its commitment to its investment as a majority owner of the IMIP.

The origin of the Indonesian unprocessed mineral export ban was actually a change made by the Indonesian Government in 2009 to focus on downstream processing. Tsingshan was early to recognise the opportunity, and with the blessing of the Chinese government made a commitment to establish the IMIP in 2013. In October 2013, China's President Xi and then Indonesian President Yudhoyono witnessed the signing of the Cooperation and Financing Agreement for the development of the IMIP.

Tsingshan's model is to partner with other companies to build, own and operate the IMIP infrastructure and one of those partnerships is with Nickel Mines.

The IMIP currently comprises:

- 3.0Mt pa stainless steel capacity,
- 30 operating RKEF lines,
- 0.5Mt carbon steel capacity,
- 0.6Mt pa high carbon ferrochrome,
- 2.9GW coal-fired power plant,
- Lime plant, coke plant, acid plant,
- Port facilities,
- Executive guest quarters and a 5-star hotel.

Figure 23: Indonesia Morowali Industrial Park (IMIP)

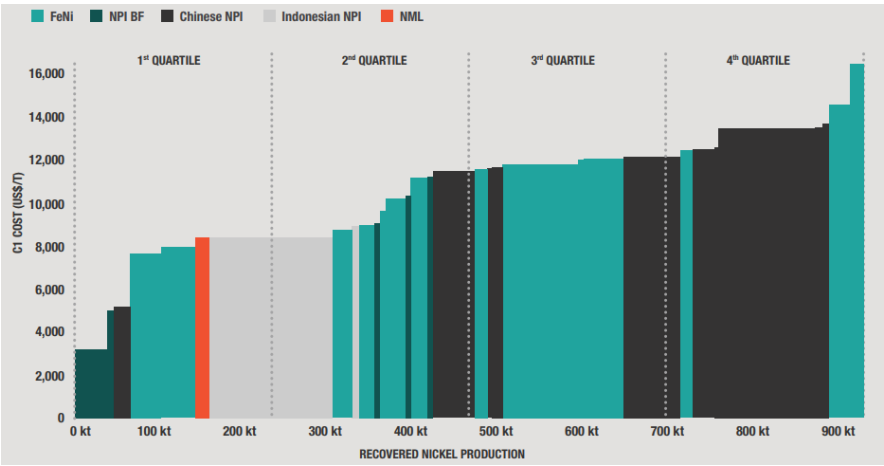
Source: Nickel Mines presentation.

Production of stainless steel at the IMIP is highly competitive due to three major factors;

- **Cheap nickel ore**. The ability to source higher grade (>1.8% nickel grade) nickel ore which is restricted from export from Indonesia as a result of the Indonesian Government's ban on the exportation of unprocessed nickel ore under a grade of 4% nickel.
- **Cheap power**. The generation of competitive electricity costs by the IMIP's purpose-built 2.9GW power plant which is powered by domestically sourced thermal coal. Power costs are understood to be around US 5-6c/kWh.
- **Vertical integration**. The vertically integrated nature of operations within the IMIP to produce a stainless steel end product, utilising the key raw material inputs, including nickel ore and power. This provides a significant advantage as molten pig iron can be directly charged to the stainless steel plant.

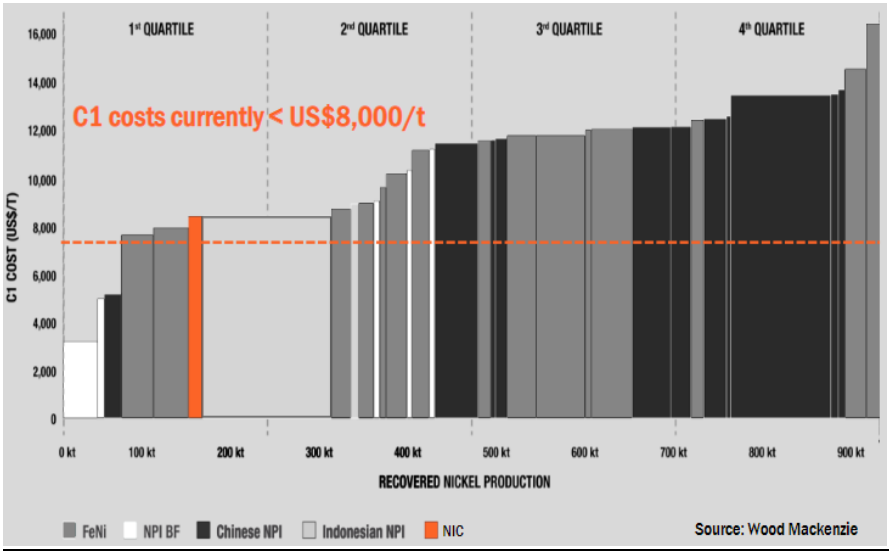
In the Nickel Mines prospectus, the company was estimating a cost of around US$8,300/t. However, now that the operations have reached steady state the costs are ~8% lower than expected at around US$7,750/t.

Figure 24: Nickel pig iron cost curve (US$/t) - 2018



Source: Nickel Mines prospectus, Wood Mackenzie

Figure 25: Nickel pig iron cost curve (US$/t) - today



Source: Nickel Mines presentation March 2020, Wood Mackenzie

Rotary Kiln Electric Furnace (RKEF)

Laterite nickel ores are formed from intense tropical weathering of olivine rich ultramafic rocks. Laterites are split into two types;

- **Limonite** (or oxide types) are the surface layer where oxidation and weathering leach out magnesium and silica and leave an iron rich deposit.
- **Saprolite** ore forms beneath the limonite layer and typically consists of 1.2-2.5% nickel.

Both types of ore can be processed via heap leaching, high pressure acid leach (HPAL) or rotary kiln electric finance (RKEF).

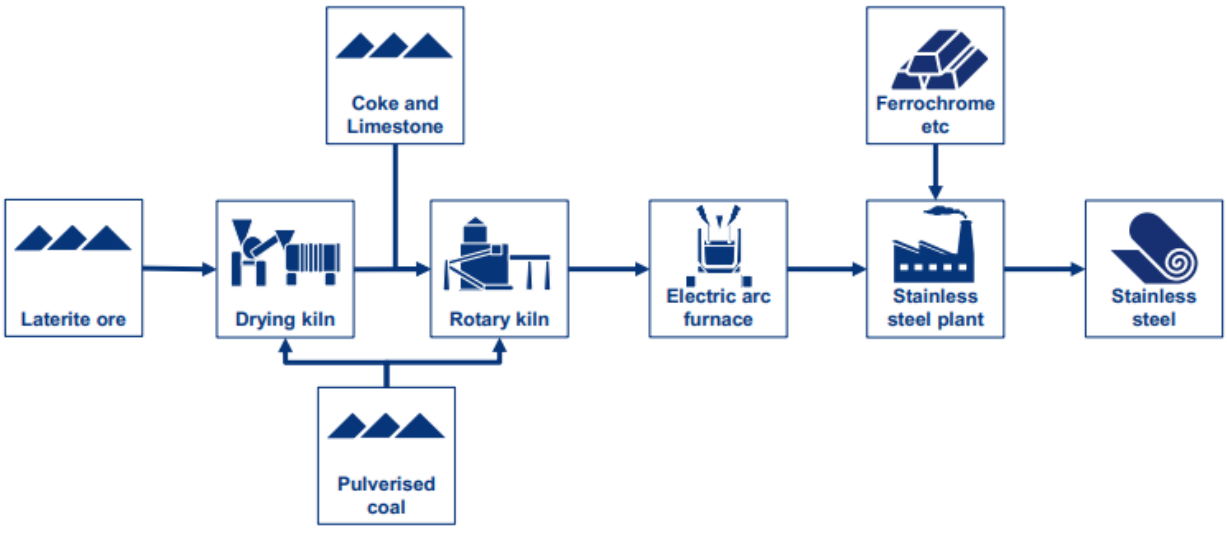
Heap leaching is the cheapest method but is only suitable for a limited type of ores with low clay content. HPAL is technically more challenging, but efficient when operating well and can treat a wide variety of ores. A drawback is the corrosive nature of the process and the difficulty in achieving stable operations.

The RKEF process consists of three main steps;

- **Calcination** – heating the ore in a drying kiln to remove water and volatile impurities.
- **Prereduction** – further heating of the ore in a rotary kiln in the presence of coke and limestone to reduce the ore (the reverse of oxidation).
- **Smelting** – in an electric arc furnace to produce molten nickel pig iron which can then be either direct charged to the stainless steel production process or formed into NPI bricks for export.

A disadvantage of the RKEF process is its high energy usage, which can make it uncompetitive in regions with high energy prices. At the IMIP this not an issue due to the abundance of cheap coal. It is possible to improve the thermal efficiency by using the waste heat from the rotary kiln to heat the drying kiln, and to use the electric arc furnace gas as a fuel for the rotary kiln.

Figure 26: RKEF and downstream NPI usage process flow diagram



Source: Nickel Mines prospectus, Zhejiang Provincial Industry Design and Research Institute.

Hengjaya nickel mine

The foundation asset for Nickel Mines was the Hengjaya nickel mine in Sulawesi. Nickel Mines holds an 80% economic interest with the remaining 20% owned by an Indonesian partner, the Wijoyo family. The mine is owned via PT Hengjaya, an Indonesian company in which Nickel Mines will be required to sell down to 49% in line with recent changes to Indonesian mining laws.

The mine is located in the Morowali Regency of the east coast province of Central Sulawesi, Indonesia, on an IUP permit (Izin Usaha Pertambangan, or Mining Business Licence). In 2012 PT Hengjaya was issued a 20-year production licence with a 10 year extension option.

The mine commenced production in October 2012 to export ore to China as a feed for the Chinese NPI producers. However, the mine closed in Jan 2014 due to the Indonesian ban on exporting unprocessed raw materials. Hengjaya is around 1.8-1.9% Ni grade, and so below the 4.0% threshold for exports.

The mine recommenced production in October 2015 to supply the IMIP. The mine is currently operating at 600k wmt per annum, but is planned to be expanded to 1.5M wmt per annum. This will deliver economies of scale that should lower the cost of the operation.

The mine is also a potential source of limonite ore to supply two high pressure acid leach (HPAL) facilities currently being constructed at the IMIP.

The mine is currently transitioning from the Bete Bete pit to the Central pit so the March 2020 quarter performance is not indicative of steady state operations. The ore is sold to IMIP at US$32/t with adjustments for nickel grade (+/- US$0.7/t for each 0.01% move in grade away from a benchmark of 1.9%).

The mine is a relatively small (4%) proportion of our overall Nickel Mines valuation.

Figure 27: Hengjaya mine quarterly production

Hengjaya Mine	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20
Tonnes mined (wmt)	125,992	123,176	129,196	78,251	199,056	194,159	149,958
Overburden mined (BCM)	201,093	254,604	279,781	117,484	432,042	428,041	290,955
Strip ratio (BCM/wmt)	1.6	2.1	2.2	1.5	2.2	2.2	1.1
Tonnes sold (wmt)	105,620	139,707	142,918	96,023	231,487	196,675	155,599
Average grade (%)	2.04	2.02	1.92	1.84	1.90	2.00	1.83
Average price received (USD/t)	32.4	31.8	27.5	23.4	27.7	37.6	24.3
Average cost of production (USD/t cif)	22.2	25.0	26.0	44.1	24.9	26.9	29.7

Source: Company reports

Figure 28: Hengjaya mine reserves and resources

Hengjaya Resource	Mt	Ni (%)	Co (%)	Fe (%)
Measured	6.9	1.2	0.07	23
Indicated	50	1.4	0.07	26
Inferred	120	1.3	0.08	29
Total	**180**	**1.3**	**0.08**	**28**

Source: Company reports

Nickel Mines P&L

Now that the RKEF projects have reached steady state operations the profitability of Nickel Mines will largely be driven by the nickel price. In our financial model we make the following key assumptions;

- Each of the Hengjaya and Ranger RKEF projects will produce 152kt of NPI at a grade of 13.8% Ni per annum to produce 21kt of contained nickel.
- Operating costs of US$7,750/t of Ni produced – flat, real in perpetuity.
- Nickel payable at 90%. The high payable rate is due to the essentially 'free' iron units in the NPI.
- Sustaining capex of US$1mpa for each project with a US$5m refurbishment every five years.
- No income tax payable until 2028, although withholding tax of 10% will be payable from 2022.
- Hengjaya mine production increasing to 1,500ktpa with an operating margin of US$10/t (ore sold for US$32/t, operating costs at US$22/t once expanded).

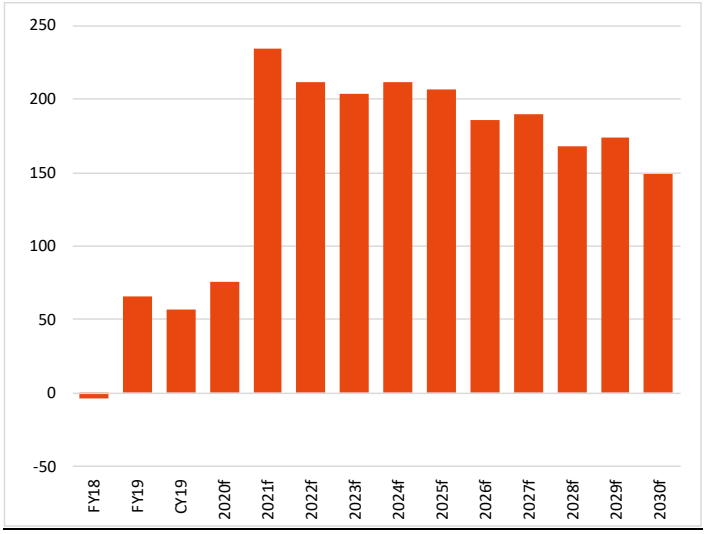
In figure 31 we show our forecast of NPAT to percentage movements in the nickel price away from our base case forecast. Every 10% move in the price is worth around A$19m to NPAT in 2023.

Figure 29: Nickel Mines P&L (US$m)

Profit & Loss (US$m)	CY19	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f	2029f	2030f
NPI Produced (kt)	**152**	**304**	**304**	**304**	**304**	**304**	**304**	**304**	**304**	**304**	**304**	**304**
Total contained nickel (kt)	21.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Nickel Price (USc/lb)	716	551	757	765	756	774	777	750	767	785	802	820
Nickel Price (USD/t)	15,785	12,153	16,689	16,865	16,675	17,053	17,122	16,545	16,917	17,298	17,687	18,085
Revenue	**236**	**484**	**674**	**682**	**676**	**691**	**692**	**671**	**684**	**700**	**716**	**732**
Total cost of sales	-139	-348	-367	-377	-386	-394	-403	-412	-421	-431	-441	-450
EBITDA	**97**	**136**	**307**	**304**	**290**	**297**	**288**	**259**	**263**	**269**	**275**	**282**
Depreciation & Amortisation	-16	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30	-30
EBIT	**81**	**106**	**277**	**274**	**260**	**267**	**258**	**229**	**233**	**239**	**245**	**252**
Net Finance Expense	11	-5	-3	4	8	10	12	14	16	18	20	22
Profit before tax	**91**	**101**	**274**	**279**	**268**	**277**	**271**	**243**	**249**	**257**	**265**	**274**
Income tax (expense)/benefit	0	0	0	-28	-27	-28	-27	-24	-25	-55	-56	-89
Total NPAT	**91**	**101**	**274**	**251**	**241**	**249**	**244**	**219**	**224**	**202**	**209**	**185**
Minorities	35	26	39	39	37	38	37	33	34	34	35	36
Attributable NPAT	**57**	**75**	**235**	**212**	**204**	**211**	**207**	**186**	**190**	**168**	**174**	**149**
- EPS	3.5	4.0	11.0	10.0	9.6	9.9	9.7	8.7	8.9	7.9	8.2	7.0

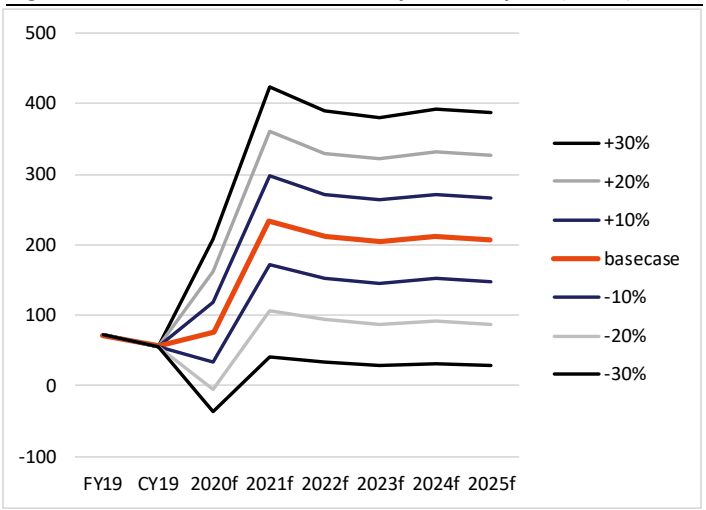
Source: Company reports, Shaw and Partners analysis

Figure 30: NPAT (US$m)



Source: Company reports, Shaw and Partners analysis

Figure 31: Nickel Mines NPAT sensitivity to nickel price (US$m)



Source: Company reports, Shaw and Partners analysis

Balance sheet and cash flow

Nickel Mines had a small net debt position of just US$15m at 31 December 2019 ($50m cash, $65m debt), and was reporting this had dropped to US$1m net debt post the recent equity raise. Nickel Mines has taken the conservative approach to fund the acquisition of the additional 20% in the Hengjaya and Ranger RKEF projects from equity. Nickel Mines has recently completed a US$150m (A$231m) equity raise and issued 463m new shares at A$0.50ps.

We are uncertain of the company's view on dividends but given the cash generation we assume that dividends commence in 2021 at a payout ratio of 50% and ramp up to an 85% payout ratio by 2023.

Figure 32: Nickel Mines Cash flow (US$m)

CASH FLOW (US$m)	CY19	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f	2029f	2030f
Operating activities												
Receipts from customers	213	485	675	683	677	692	693	672	685	701	717	733
Payments to suppliers and employe	-170	-349	-368	-378	-387	-395	-404	-413	-422	-432	-442	-451
Income taxes paid	-5	0	0	0	-28	-27	-28	-27	-24	-25	-55	-56
Working capital movement	0	-8	-10	1	6	-3	3	11	-2	-2	-2	-2
Other	0	0	2	8	10	13	15	17	18	20	22	24
Net cash flow from operating activities	**38**	**129**	**299**	**313**	**278**	**280**	**279**	**260**	**255**	**262**	**241**	**247**
Investing activities												
Payments for PPE	-30	-13	-3	-3	-3	-3	-3	-11	-3	-3	-3	-3
Payments for investments	-1	-150	0	0	0	0	0	0	0	0	0	0
Other	7	0	0	0	0	0	0	0	0	0	0	0
Net cash flow from investing activities	**-24**	**-163**	**-3**	**-3**	**-3**	**-3**	**-3**	**-11**	**-3**	**-3**	**-3**	**-3**
Free cash flow	**7**	**-34**	**296**	**310**	**275**	**277**	**276**	**249**	**252**	**259**	**238**	**244**
Financing activities												
Net proceeds from issue of shares	0	150	0	0	0	0	0	0	0	0	0	0
Proceeds from borrowings	0	0	0	0	0	0	0	0	0	0	0	0
Repayments of borrowings	-30	0	-30	-35	0	0	0	0	0	0	0	0
Dividends paid	0	0	-43	-149	-149	-170	-170	-170	-149	-149	-149	-149
Other	17	-5	-5	-3	-2	-2	-2	-2	-2	-2	-2	-2
Net cash flow from financing activities	**-13**	**145**	**-77**	**-187**	**-151**	**-173**	**-173**	**-173**	**-151**	**-151**	**-151**	**-151**
Net increase/(decrease) in cash	1	111	219	123	123	104	103	76	101	108	86	93

Source: Company reports, Shaw and Partners analysis

Figure 33: Nickel Mines Balance Sheet (US$m)

BALANCE SHEET (US$m)	CY19	2020f	2021f	2022f	2023f	2024f	2025f	2026f	2027f	2028f	2029f	2030f
Cash and cash equivalents	50	161	379	502	626	730	833	909	1,010	1,117	1,204	1,297
Trade and other receivables	97	126	129	131	130	133	133	129	131	134	137	140
Other	58	117	131	132	131	134	134	130	133	136	139	142
Total current assets	**205**	**404**	**639**	**765**	**886**	**996**	**1,099**	**1,167**	**1,273**	**1,387**	**1,480**	**1,579**
Property, plant and equipment	629	732	705	678	651	624	597	578	551	524	497	470
Goodwill	55	85	85	85	85	85	85	85	85	85	85	85
Other	9	9	9	9	9	9	9	9	9	9	9	9
Total non-current assets	**693**	**826**	**799**	**772**	**745**	**718**	**691**	**672**	**645**	**618**	**591**	**564**
TOTAL ASSETS	**897**	**1,229**	**1,438**	**1,537**	**1,631**	**1,714**	**1,790**	**1,839**	**1,918**	**2,005**	**2,071**	**2,143**
Trade and other payables	52	133	140	144	148	151	154	158	161	165	169	172
Other	6	6	6	1	1	1	1	1	1	1	1	1
Total current liabilities	**58**	**139**	**146**	**146**	**149**	**152**	**156**	**159**	**163**	**166**	**170**	**174**
Deferred tax	55	56	56	84	83	83	83	80	81	110	112	145
Borrowings	61	61	31	0	0	0	0	0	0	0	0	0
Other	1	1	1	1	1	1	1	1	1	1	1	1
Total non-current liabilities	**117**	**117**	**88**	**85**	**84**	**85**	**84**	**81**	**82**	**112**	**113**	**146**
TOTAL LIABILITIES	**175**	**256**	**234**	**230**	**233**	**237**	**240**	**240**	**244**	**278**	**283**	**320**
NET ASSETS	**722**	**973**	**1,205**	**1,307**	**1,398**	**1,477**	**1,551**	**1,599**	**1,674**	**1,727**	**1,787**	**1,823**
Net debt	15	-96	-344	-502	-626	-730	-833	-909	-1,010	-1,117	-1,204	-1,297
Gearing (ND/ND+E %)	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Source: Company reports, Shaw and Partners analysis

Valuation and Price Target

Our preferred valuation technique is a discounted cash flow (DCF) valuation with post-tax operational cash flows discounted at our assumed Nickel Mines' weighted average cost of capital of 11%. Our DCF valuation is $1.04ps and Nickel Mines is currently trading at a 43% discount to this valuation.

At spot commodity prices (nickel at $5.90/lb, A$/US$ at 69c) our DCF valuation drops to A$0.73ps.

Figure 34: DCF valuation – Shaw base case forecasts

Nickel Mines Valuation	US$m	A$m	A$ps
Hengjaya Mine	17	26	0.01
Hengjaya RKEF	733	1,127	0.53
Ranger RKEF	732	1,126	0.53
Corporate costs	-30	-46	-0.02
Net debt	-15	-23	-0.01
Total Valuation	**1,437**	**2,210**	**1.04**

Source: Company reports, Shaw and Partners analysis

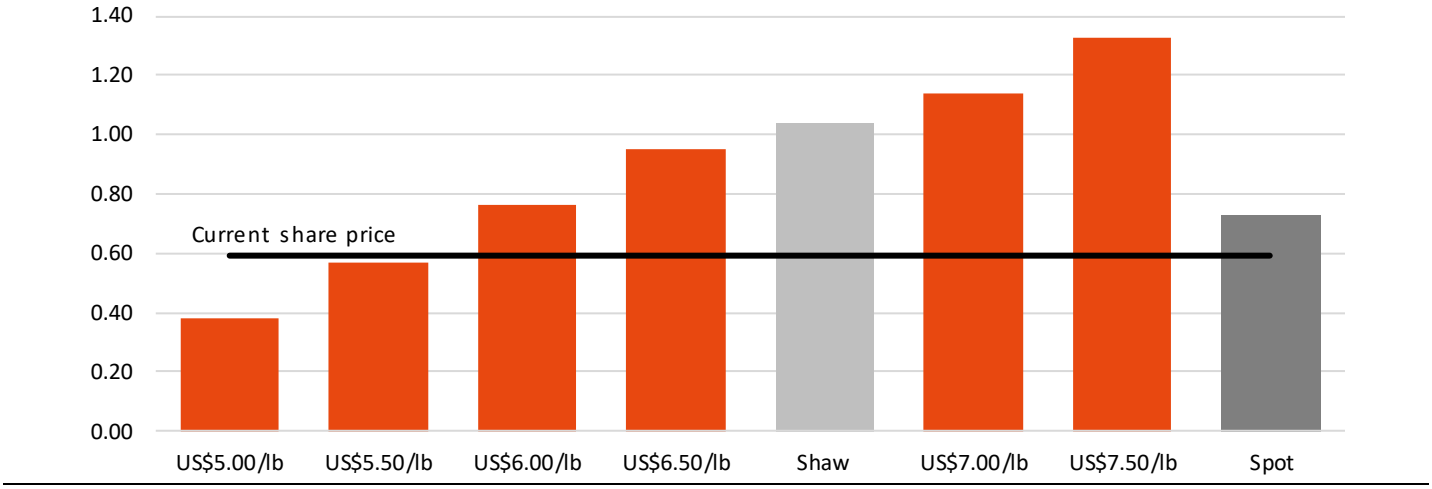
Figure 35: DCF valuation – spot commodity prices

Nickel Mines Valuation	US$m	A$m	A$ps
Hengjaya Mine	17	26	0.01
Hengjaya RKEF	516	794	0.37
Ranger RKEF	516	793	0.37
Corporate costs	-30	-46	-0.02
Net debt	-15	-23	-0.01
Total Valuation	**1,004**	**1,544**	**0.73**

Source: Company reports, Shaw and Partners analysis

The main valuation sensitivity is to the nickel price. In figure 36, we outline the Nickel Mines DCF valuation at a range of nickel prices. Every US$0.50/lb move in the nickel price adds or subtracts A$0.22ps to our valuation.

Figure 36: Nickel Mines DCF Valuation sensitivity to nickel price (A$ps)



Source: Company reports, Shaw and Partners analysis

Key risks

As a mining and processing company with exposure to a single commodity and single asset we consider an investment in Nickel Mines to be high risk. The key risks include;

- The nickel price is volatile and is often driven by arbitrary policy changes such as the Indonesian export ban. As such, the price of nickel is relatively difficult to forecast and the actual price may differ substantially from our forecasts.
- Nickel Mines is operating in Indonesia which has a history of changing its mining and investment laws. There is a risk that Indonesian mining and/or investment laws are again revised which may be detrimental to Nickel Mines.
- Nickel Mines relies on the goodwill of Tsingshan to build, operate and invest in its facilities in IMIP. The relationship appears strong and Tsingshan is an 18% shareholder in Nickel Mines. However, if the relationship sours then Nickel Mines is exposed to the risks of operating with a substantially more powerful partner.
- Forecasting future operating costs has considerable uncertainty. Our forecasts may prove to be too optimistic. If Nickel Mines costs are higher than we expect then our cash flow forecasts will be too high.
- Smaller companies carry more significant 'key personnel' risk than larger organisations. If senior management depart the company then it could delay projects or exacerbate operational risks.

Appendix: Key Personnel

Robert Neale | Non-Executive Chairman

Mr Neale is currently the Non-executive Chairman of industrial minerals and energy company, Mayur Resources Limited with assets in Papua New Guinea.

Mr Neale is also the past Managing Director of New Hope Corporation Limited (NHC). He joined NHC in 1996 as General Manager and appointed as executive officer in 2005 and to the Board of Directors in 2008 until his retirement in 2014. Prior to NHC Mr Neale spent 23 years' with Esso Australia and EXXON Coal and Minerals Company.

Norman Seckold | Deputy Chairman

Norman Seckold graduated with a Bachelor of Economics degree from the University of Sydney in 1970. He has spent more than 26 years in the full time management of natural resource companies, both in Australia and overseas.

Mr Seckold has been the Chairman of a number of publicly listed companies including Moruya Gold Mines, Pangea Resources, Timberline Minerals, Perseverance Corporation, Valdora Minerals, Viking Gold Corporation, Mogul Mining and Bolnisi Gold. Mr Seckold was previously Chairman of Cockatoo Coal Limited, an Australian coal mining, exploration and project development company.

Mr Seckold is currently Chairman of Alpha HPA Limited, a minerals exploration and development company operating in Australia and Indonesia, Santana Minerals Ltd, a precious metals exploration company with projects in Mexico and Sky Metals Limited, exploring for mineral resources in NSW, Australia. He is also a director of the unlisted public company Mekong Minerals Ltd.

Justin Werner | Managing Director

Mr Werner holds a Bachelor of Management from the University of Sydney and has been involved in the mining industry for 20 years. He was a founding partner of PT Gemala Borneo Utama, a private Indonesian exploration and mining company, which developed a heap leach gold mine in West Kalimantan and also discovered the highly prospective Romang Island with ASX listed Robust Resources Limited which was acquired in 2012 by Indonesian business tycoon Anthony Salim.

Prior to developing projects in Indonesia, Justin worked as a consultant, leading many successful turnaround projects for blue chip mining companies around the world including Freeport McMoran (Grasberg deposit, Indonesia where he spent 2 years), Lihir Gold (Lihir mine, Papua New Guinea), Placer Dome (Nevada, USA), BHP Billiton (Ingwe Coal, South Africa), Rio Tinto (West Angeles Iron Ore, Australia), Nickel West (Western Australia) and QNI Yabulu refinery (Queensland, Australia). Mr Werner is currently a non-executive director of ASX Listed Alpha HPA Limited.

Peter Nightingale | Executive Director and Chief Financial Officer

Mr Nightingale graduated with a Bachelor of Economics degree from the University of Sydney and is a member of the Institute of Chartered Accountants in Australia. He has worked as a chartered accountant in both Australia and the USA.

As a director or company secretary Mr Nightingale has, for more than 25 years, been responsible for the financial control, administration, secretarial and in-house legal functions of a number of private and public listed companies in Australia, the USA and Europe including Pangea Resources, Timberline Minerals, Perseverance Corporation, Valdora Minerals, Mogul Mining, Bolnisi Gold, Cockatoo Coal and Planet Gas. Mr Nightingale is currently a director of ASX Listed Alpha HPA Limited and unlisted public company Prospech Limited.

James Crombie | Non-Executive Director

Jim Crombie graduated from the Royal School of Mines, London, in 1980 with a B.Sc. (Hons) in Mining Engineering, having been awarded an Anglo American Scholarship. Mr. Crombie held various positions with DeBeers Consolidated Mines and the Anglo American Corporation in South Africa and Angola between 1980 and 1986. He spent the next thirteen years as a Mining Analyst and Investment Banker with Shepards, Merrill Lynch, James Capel & Co. and finally with Yorkton Securities. Mr. Crombie was the Vice President, Corporate Development of Hope Bay Mining Corporation Inc. from February 1999 through May 2002 and President and CEO of Ariane Gold Corp. from August 2002 to November 2003. Mr. Crombie was President, CEO and a director of Palmarejo Silver and Gold Corporation. Mr. Crombie is President and CEO of Odyssey Resources Corp., and a director of Arain Silver and Torex Gold Resources Inc.

Weifeng Huang | Non-Executive Director

Mr. Huang graduated with a Bachelor of Engineering degree from Zhejiang University in 1982 and obtained his Master of Business Administration degree from Zhejiang University in 1998.

Mr. Huang started his career in several industrial enterprises and had broad management experiences from serving as the Plant Manager of Wenzhou Tractor Plant to the General Manager of Wenzhou Machinery Industrial Corporation, and as the Vice Mayor of Wenzhou and Executive Chairman of China Perfect Machinery Industry Corp., Ltd. He was appointed as a Director of Shanghai Jinqiao Export Processing Zone Development Co., Ltd, a publicly-listed company on the Shanghai Stock Exchange (SSE code 600639) and concurrently the Deputy CEO of Shanghai Jinqiao Group. Mr. Huang was also a former Chairman of the board of Harbin High Tech (Group) Co., Ltd.

Mr. Huang is currently the Chairman of Shanghai Decent Investment (Group) Co., Ltd, ('Shanghai Decent') a flagship company within the Tsingshan Iron and Steel group of companies, and the President Director of PT. Indonesia Morowali Industrial Park.

Mark Lochtenberg | Non-Executive Director

Former co-head of Glencore International AG's worldwide coal division, where he spent 13 years overseeing a range of trading activities including the identification , due diligence, negotiation, acquisition and aggregation of the coal project portfolio that would become Xstrata coal. He is the former Executive Chairman and founding Managing Director of Cockatoo Coal Limited. Currently he is the Non-Executive Chairman of Equus Mining Limited, a minerals exploration company with operations in Chile and a director of non-listed companies Australian Transport Energy Corridor Pty Ltd and Montem Resources Limited.

Yuanyuan Xu | Non-Executive Director

Ms. Xu graduated with a Bachelor's Degree in Fashion Business & Fashion Design from Instituto Marangoni. Since graduation, Ms. Xu has honed her business acumen, participating in the Shanghai Fashion Week with a focus on marketing, public relations and procurement activities. She is currently an Executive Director of Shanghai Wanlu Investment Co., Ltd. Ms. Xu has not sat on the board of any publicly listed companies.

Stephanus (Dasa) Sutantio | Non-Executive Director

Mr Sutantio graduated with a Bachelor of Commerce degree from the Australian National University in 1987 and has been involved in the Asian financial sector for more than 20 years, holding various senior positions at Citibank N.A., Bank Tiara Asia Tbk., the Indonesian Bank Restructuring Agency and PT Bank Mandiri Tbk. He joined the Indonesian Tanito Group in 2010 and is currently a Director and CFO responsible for overseeing the Tanito Group's investments in the financial, mining support, marine logistics/shipping, property and hospitality sectors.

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