NICKEL MINES LIMITED

Research Note

MORE THAN JUST ANOTHER NICKEL MINER

- **Nickel Mines Limited (NIC) is a newly listed pure play nickel miner and producer. The company has operations centred around one of the world's premier stainless steel facilities and located within the Morowali Province of Sulawesi, Indonesia. We like the fact that NIC offers a real point of difference to your typical mining company as NIC should be seen as a Nickel Pig Iron (NPI) refiner rather than a nickel miner. We initiate coverage with a BUY recommendation and a price target of $0.70 per share.**

- **Mining is profitable and a nice to have, but immaterial in the scheme of things.** NIC owns 80% of a high grade nickel laterite mine supplying ore to the Indonesia Morowali Industrial Park (IMIP) operated by Shanghai Decent, a company of the Tsingshan Group the world's largest stainless steel producer. The mine is forecast to ramp up production to 1.5mtpa of 1.9%Ni at an operating margin of c.$10/t. The mine is expected to contribute 17% of earnings in FY20 decreasing to just 7% by FY25.

- **The real story is the NPI refining.** NIC has an ownership interest in four Rotary Kiln Electric Furnaces (RKEF) lines within the IMIP. Upon nameplate capacity, NIC will join the ranks of nickel producers with an attributable annual production of 12,719t at an all in cost of c.US$8,400/t, a healthy margin on the current nickel spot price of US$13,000/t. Additionally, thanks to generous Indonesian Government concessions, NIC will pay zero corporate tax on profit attributable to the RKEF lines for seven years allowing cash to be reinvested into growing the business.

- **Upside in nickel prices and production increases.** With consensus nickel price forecast to reach US$16,500/t by 2022, NIC is well positioned to benefit from the expected supply deficit. Increase in production remains a possibility via an increase in the ownership interests in the existing RKEF lines. We see a potential increase to a 60% ownership in each line taking NIC attributable nickel production to 19,800 tonnes per year sometime during 2020.

- **With processing being the main game, NIC is essentially an industrial play**. Mine life is irrelevant and production can continue largely ad infinitum. With no resource depletion there is no need for exploration expenditure or new mine developments making NIC a completely unique and attractive nickel play on the global market.

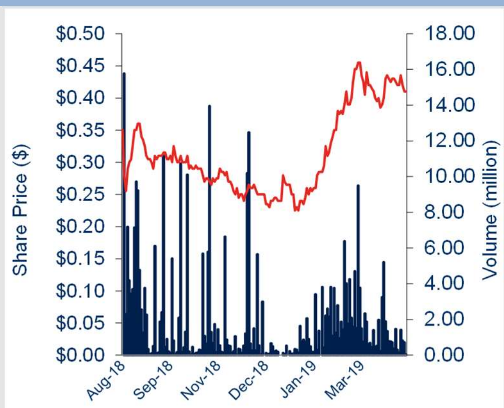
Year End June 30	2017A	2018A	2019F	2020A	2021F
Reported NPAT (US$m)	(3.7)	(2.9)	4.2	60.9	76.4
Recurrent NPAT (US$m)	(3.7)	(2.9)	4.2	60.9	76.4
Recurrent EPS (UScents)	(1.2)	(0.5)	0.3	4.4	5.5
EPS Growth (%)	na	na	na	1,342.4	25.4
PER (x)	(34.7)	(78.9)	134.7	9.3	7.5
PEG	na	na	na	0.0	0.3
EBITDA (US$m)	(3.3)	(1.6)	7.7	69.3	85.1
EV/EBITDA (x)	(43.0)	(147.8)	70.9	7.0	4.9
Capex (US$m)	0.1	0.7	1.7	9.6	10.8
Free Cashflow	(0.0)	(58.9)	(117.1)	62.7	72.0
FCFPS (UScents)	(0.0)	(10.5)	(8.4)	4.5	5.2
PFCF (x)	(4,896.5)	(3.9)	(4.9)	9.1	7.9
DPS (cents)	0	0	0	0.0	0.0
Yield (%)	0	0	0	0.0	0.0
Franking (%)	0	0	0	0	0

9 April 2019

12mth Rating		
Price	A$	0.41
Target Price	A$	0.70
12mth Total Return	%	69.7
RIC: **NIC.AX**		BBG: **NIC AU**
Shares o/s	m	1388.0
Free Float	%	70.2
Market Cap.	A$m	569.1
Net Debt (Cash)	A$m	(20.3)
Net Debt/Equity	%	na
3mth Av. D. T'over	A$m	0.660
52wk High/Low	A$	0.46/0.23
2yr adj. beta		0.66
Valuation:		
Methodology		DCF
Value per share	A$	0.70

Analyst: Phil Carter
Phone: (+61) 8 9225 2819
Email: pcarter@psl.com.au

12 Month Share Price Performance



Performance %	1mth	3mth	12mth
Absolute	(1.2)	78.3	0
Rel. S&P/ASX 300	(2.9)	68.4	0

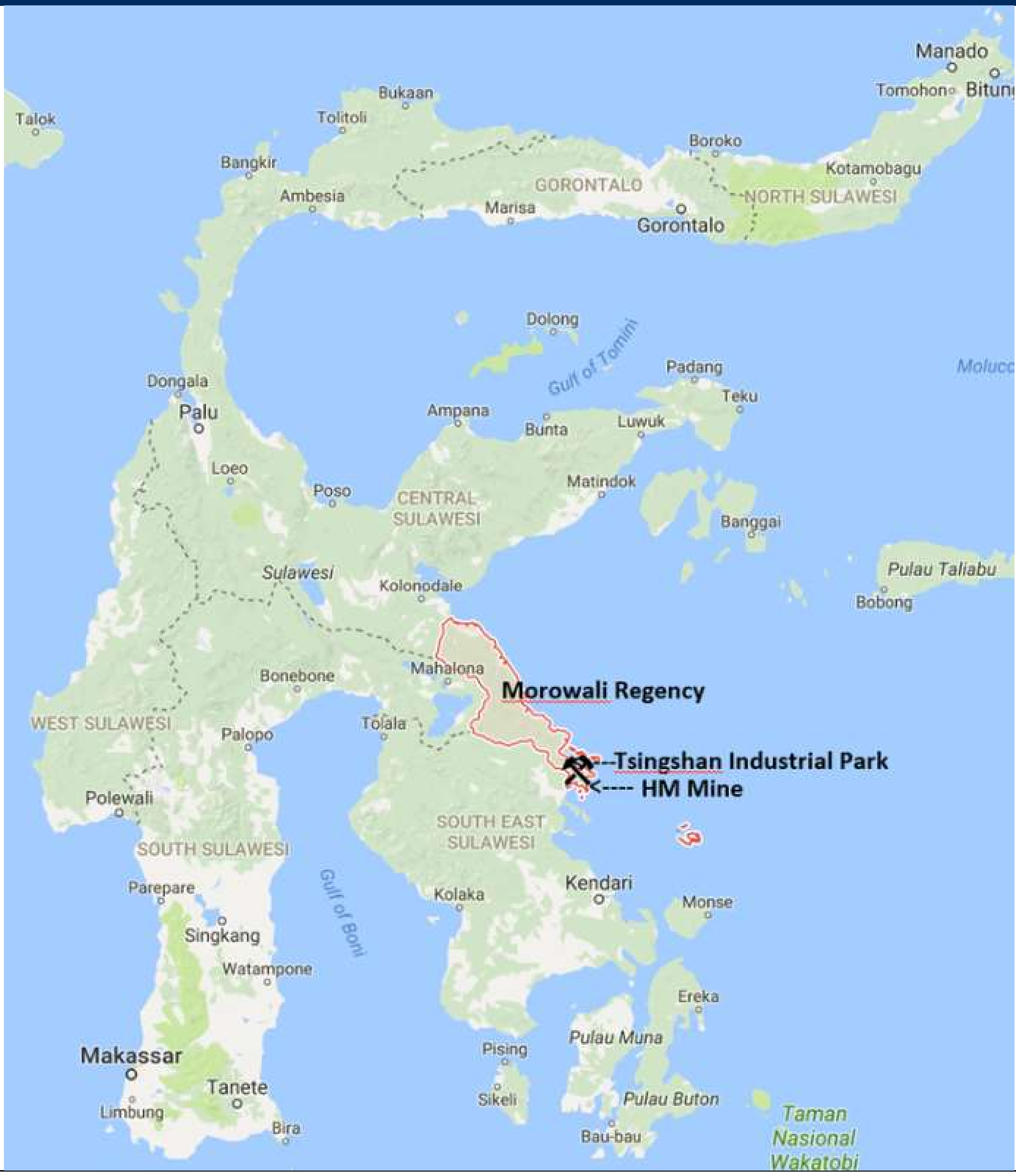
COMPANY OVERVIEW

Nickel Mines Limited (NIC) is a newly listed company on the ASX through an IPO in August 2018. The company is headquartered in Sydney and was founded in 2007 with an objective of acquiring, exploring and developing nickel projects. In 2009, NIC acquired an 80% interest in the Hengjaya Nickel Mine located on the Indonesian island of Sulawesi marking the beginning of a rollercoaster ride in the Indonesian nickel industry.

History

The Hengjaya mine located in the Morowali province of Sulawesi (Figure 1), was the entry into Indonesia and where the NIC story kicks off. In 2009, NIC acquired an 80% interest in the Indonesian company PT Hengjaya Mineralindo the 100% owners of the high grade nickel laterite Hengjaya mine. After a number of years of feasibility studies, permitting, and investment decisions, NIC commended mining at the Hengjaya mine in 2012 with first ore shipment and sales occurring early 2013 which continued throughout the year with sales of laterite ore to China and Japan. In a cruel twist and only less than a year since commercial production, the Indonesian Government implemented the ban on the direct shipping of unprocessed minerals. With no feasible domestic buyer for the nickel laterite ore, NIC was left with no option but to cease operations and place the Hengjaya mine on care and maintenance.

Figure 1: Location of NIC Operations

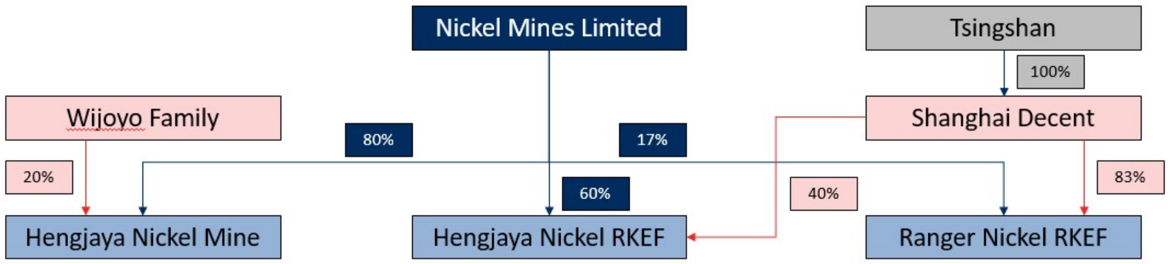


Source: *Nickel Mines Limited*

In another twist of fate and in anticipation of the Indonesian export ban, the Chinese Tsingshan Group which is now the words largest stainless steel producer, saw an opportunity to develop an in-country nickel and stainless steel processing facility in the backyard of some of the world's largest and highest grade nickel laterite deposits. Through a Tsingshan group company, Shanghai Decent, construction began of what is now known as the Indonesia Morowali Industrial Park (IMIP). This hungry new nickel processing centre required an ore supply and with the Hengjaya mine located only 12kms away, the mine was reopened late in 2015. The relationship prospered between the miner and the processor and culminated in the signing of a Collaboration and Subscription Agreement (CSA) to build, own and operate a 2-line Rotary Kiln Electric Furnaces (RKEF) project known as the Hengjaya Nickel Project. A further agreement was entered into with the proceeds of the IPO to take a stake in a further 2-line RKEF lines known as the Ranger Nickel Project which is where the NIC story is today and what separates NIC from all other listed nickel producers.

The structure of NIC and the interests in each asset is shown in Figure 2. At first glance the structure can look confusing, however once broken down the business model is actually fairly straightforward. NIC owns 80% of the Hengjaya nickel laterite mine with a national interest holding the remaining 20%. NIC has also acquired interest in four RKEF processing lines held across two RKEF project companies being Hengjaya Nickel and Ranger Nickel. Each projects operates within the IMIP complex and are owned in partnership with the IMIP's majority owner and operator Shanghai Decent.

Figure 2: Nickel Mines Limited



Source: Patersons Securities Limited

HENGJAYA NICKEL MINE (80% INTEREST)

The Hengjaya nickel mine is a nickel laterite mine covering an area of 6,249 hectares and has been issued with a mining production licence until the year 2032 with an option for a further 10-year extension thereafter. During the brief operational stint between 2012 and 2014, the mine produced ore shipments of c.430,000 tonnes at an average of grade of 2.0% Ni which were shipped to buyers in China and Japan. The mine is currently producing 600k tonnes per annum ramping up to 1.5m tonnes per annum of ore by the end of calendar year 2019 at an average grade of 1.9%. The total IMIP requirement for nickel ore is 15m tonnes per annum so NIC will produce approximately 10% of the total ore requirements of the IMIP.

Mining is conducted using conventional open pit techniques. Given the lateritic nature of the ore, the project is entirely free dig in nature. The high grade ore is within a Saprolite zone which is under a cover of Limonite and transitional waste. The stripping ratio historically has been 2:1 so waste movement is minimal. An MOU has been agreed to supply a currently under construction High Pressure Acid Leach (HPAL) plant located within the IMIP, limonite ore which will monetise the previously classified waste product into a source of revenue. As this limonite is mined as part of the process to access the Saprolite ore, the additional revenue will come at no cost except for the transport from the mine to the process plant which will see profitability of the Hengjaya mine increase substantially.

Figure 3: Waste and Ore Profile at the Bete Bete Pit

Source: Nickel Mines Limited

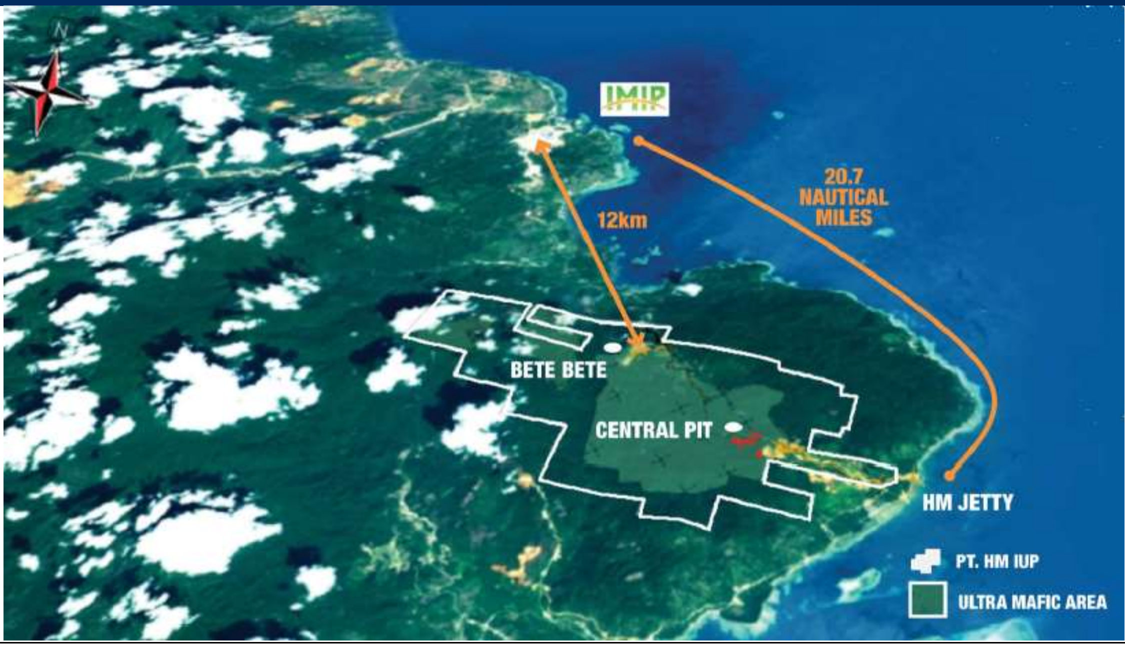
Mining has historically been located at the Bete Bete pit (Figure 4) having been located in the area granted the first mining licence. The Bete Bete pit is located only 12kms from the IMIP as the crow flies, however due to the terrain, existing infrastructure and land holdings the ore is required to be transported via 8t trucks by provincial road to the Hengjaya jetty which is approximately 12km away (in the opposite direction to the IMIP). The ore is then left in stockpiles to dry to an optimum moisture content before being loaded onto a barge. The barge transports the ore by sea to the IMIP port some 20.7 nautical miles away where it is unloaded, blended with other incoming ore from other local suppliers before being fed into the IMIP's RKEF processing lines.

Figure 4: The Bete Bete Pit

Source: Patersons Securities Limited

With mining licences now granted for other deposits within NIC's landholding (Figure 5), the development of the central pit is currently underway with plans to begin ore production out of the central pit late calendar year 2019. The central pit is located 7km's closer to port and will require the construction of a new haul road allowing for larger capacity trucks of 35-45t to be utilised which will offer savings in terms of both haulage distance and productivities. The central pit sits at a lower elevation than Bete Bete and therefore receives less annual rainfall which reduces as you traverse down the ridge towards the coast. This reduction in rainfall will have benefits in decreasing the moisture content of the ore assisting in delivering an optimal product to the IMIP and therefore achieving a better realised sales price.

Figure 5: Hengjaya Nickel Mine Location



Source: Nickel Mines Limited

Figure 6: Road Under Construction from Hengjaya Port to Central Pit (March 2019)

Source: Patersons Securities Limited

Operating Costs

The mining operating cost for Hengjaya Nickel at the Bete Bete mine sit at an all-in rate of approximately US$25 per tonne of nickel ore. Once the mining has transitioned to the central pit the mining costs are expected to be reduced to an all-in rate of c.US$18/t including royalties and barge transport costs. As far as sales prices go, the optimal product with a grade of 1.9% and a moisture content of 37% commands a sales price of US$28.50/tonne offering a gross margin of c.US$10 per tonne. IMIP sets the sales price for the nickel laterite ore which applies to all of the ore suppliers in the region of which NIC represents just 10% of the supply. The sales price is set based on a number of factors primarily being the prevailing nickel price and the local supply and demand relationship. The price will generally be set to ensure ore suppliers make a small profit margin and we would not expect the price to dip below US$26 per tonne nor increase above US$33 per tonne.

Historically, NIC have achieved a higher sales price of up to US$32/tonne however this was due to higher grades coming out of the Bete Bete pit. The long term grade of 1.9% Ni is the optimal nickel content for the RKEF process and operations will be tailored to ensure this grade remains the status quo moving forward.

Indonesian Foreign Ownership Obligation

The Hengjaya mine is subject to the 2017 Indonesian Government decree of divestiture of ownership by foreign companies in an Indonesian mining business. Essentially this decree has been enacted to ensure mining assets are held by local interests rather than international corporations. Under the decree it is a requirement that a minimum 51% interest in the Hengjaya mine is held by a domestic investor by the 10th year of production, being June 2024 in this case. The current schedule for divestment is 30% (of domestic investment) by June 2021, 37% by June 2022, and 44% June 2023. The divestment must be issued at ‘fair market value’ without considering the mineral reserve and is first offered to national, provincial or regency Governments. In the event the Government is not willing to invest, the offer is then made to a Government agency before it can be allowed to be offered to a private Indonesian investment entity by way of an auction.

Reserves and Resources

The Hengjaya mine has a JORC compliant resource of 6.9m tonnes @ 1.2% Ni of Measured, 50m tonnes @ 1.4% Ni of Indicated and 120m tonnes @ 1.3% Ni of Inferred resources for a total resource of 180m tonnes @ 1.3% Ni. Given this resource base and excluding the potential expansion of the resource (highly likely) the mine life of Hengjaya is greater than 30 years.

Figure 7: Laterite Nickel Ore Barge Unloading at the IMIP

Source: Patersons Securities Limited

INDONESIAN MOROWALI INDUSTRIAL PARK (IMIP)

The IMIP began construction in 2013 in anticipation of the Indonesian Government's ban on exporting unprocessed minerals in order to promote and incentivise an in-country minerals processing industry. The IMIP was developed, built and now operated by Shanghai Decent Investment Group (SDI) a Tsingshan Group company. Tsingshan group is the world's largest stainless steel producer having produced 9.29m tonnes of stainless steel in 2018.

The IMIP represents a total investment of c.US$7bn most of which was funded through the state owned China Development Bank. The park benefited from the "One Belt, One Road" initiative however was a private business investment rather than a direct Government guarantee. The IMIP did, and continues to have the support of both the Indonesian and Chinese governments, with the signing ceremony of the China-Indonesia Economic and Trade Corporation Zone of which the IMIP was a major part of, witnessed by Chinese President Xi Jinping and then Indonesian President Susilo Bambang Yudhoyono. The agreement has turned a once sleepy fishing village to one of, if not the, world's premier stainless steel manufacturing facilities employing more than 28,000 people of which 25,000 are local Indonesians providing a significant economic fillip to the region.

In terms of facilities, the IMIP is world class with 3mtpa of stainless steel capacity, 0.5mtpa of carbon steel capacity, 0.6mtpa of carbon ferrochrome capacity, 1.95mtpa of nickel pig iron capacity, 2GW coal fired power station, lime plant, coke plant, acid plant, port, airstrip, accommodation facilities, and a five-star hotel.

Figure 8: Argon Oxygen Decarburization Process at the IMIP

Source: Patersons Securities Limited

The facility allows for a low cost stainless steel production due to benefits of vertical integration. The IMIP was strategically built on the coast allowing for port access but still within hauling distance of some of the world's largest deposits of high grade nickel laterite ore allowing for massive savings in avoiding having to bear the cost of seaborne transport of nickel ore.

Power is sourced from a purpose built 2GW coal fired power plant which uses cheap and abundant domestic thermal coal sourced from neighbouring Kalimantan brought into the port via ships enabling a very cost effective power supply cost of c.US6 cents per Kwh, an envious cost advantage compared to any peers worldwide. Construction and operation of the park utilises proven Chinese technology and design with the majority of structures, machinery, spare parts etc all being fabricated in China before being shipped and assembled under the control of Chinese knowhow by the large pool of low cost Indonesian labour.

In addition, there is substantial savings on production costs obtained through 'hot charging' which is the process of transferring the molten NPI directly into the stainless steel furnace. This reduces the need for ingot casting, transportation and rehandling along with re-smelting which uses a significant amount of power. This savings alone is estimated to be in the order of US$50/t on stainless steel production and a crucial component in the IMIP cost advantage position.

Figure 9: Stainless Steel Slab Production in the IMIP

Source: Patersons Securities Limited

Figure 10: Hot Rolled Stainless Steel Production in the IMIP

Source: Patersons Securities Limited

THE ROTARY KILN ELECTRIC FURNACE (RKEF) PROCESS

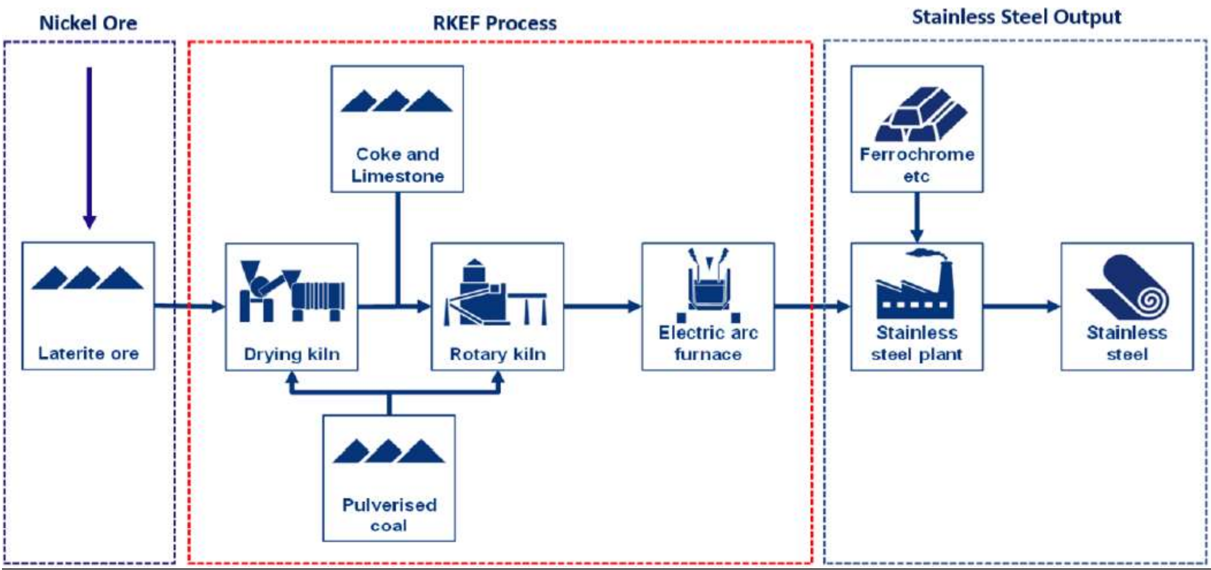
Tsingshan Group is the pioneer and global leader in the field of the RKEF processing technology to produce Nickel Pig Iron (NPI) from nickel laterite ores. The RKEF process offers a low cost production of nickel pig iron which is a critical input into the production of stainless steel. The RKEF process requires high grade laterite ore of greater than 1.8% and can achieve high recoveries of greater than 93% and final nickel grades of over 10% Ni which is suitable for use in 300s series stainless steel products.

The process of RKEF (Figure 11) involves the laterite nickel ore firstly being dried in a drying kiln followed by mixing and calcination with limestone and carbon. This is followed by smelting in an electric arc furnace to temperatures in excess of 1,600 degrees Celsius. The molten NPI is then removed from the arc furnace by ladle and transferred to the stainless steel plant for further processing into stainless steel. Alternatively, the molten NPI could also be cast into NPI ingots and sold to the wider international market should the demand exist.

In total there are 26 RKEF lines either operating or under construction within the IMIP. The ownership structure of each of the RKEF lines varies across the park with a number of companies owning a stake in the production process. Each line is built to the same standards and design criteria by SDI for a fixed contract price. Operationally, all lines are run independent to each other, however share a number of fixed input costs such as power, laterite ore feed, reductant coal and the unit cost of labour.

In terms of the sale of the NPI product, SDI act as a backstop buyer in that they will agree to purchase all of the NPI if there are no alternate buyers. In a practical sense, the savings SDI can achieve from buying the NPI while still molten ensure that the NPI is purchased by SDI and simply transported to the downstream stainless steel processing facility.

Figure 11: RKEF and Downstream NPI Usage Process Flow Diagram



Source: Nickel Mines Limited

Hengjaya Nickel RKEF (HNI)

NIC has a 60% interest in Hengjaya Nickel (HNI) which was acquired for US$120m. HNI is a two line RKEF plant situated within the greater IMIP complex. The other 40% ownership has been retained by SDI. HNI at peak will produce 16,500 tonnes of nickel at grades of 11% Ni. The construction of the RKEF lines is continuing with the first kiln undergoing commissioning and currently operating at c.80% of capacity. The first kiln has produced 3,820 tonnes of NPI at an average grade of 12.65% so far in 2019 as part of the commissioning phase. The second kiln is expected to reach 80% capacity in May 2019 with a ramp up to full production expected by the end of FY19.

NIC retains an option to acquire the remaining 40% stake in in HNI within 12 months of first NPI production at a cost of a further US$120m.

The NPI produced has a guaranteed offtake floor price of 90% of the LME nickel price. The range of prices paid for NPI over calendar year 2018 across the park averaged between 95% and 105% of the LME nickel price. The real kicker for HNI however is the tax concessions available. By official decree of the Minister of Finance of the Republic of Indonesia, HNI has been granted seven years of zero tax payable followed by a further two years where income tax is payable at only half the normal 25% corporate tax rate.

Figure 12: The RKEF at HNI

Source: Patersons Securities Limited

Figure 13: NPI Production from HNI

Source: Patersons Securities Limited

Ranger Nickel RKEF (RNI)

NIC holds a 17% stake in Ranger Nickel (RNI) through an initial acquisition cost of $US50m. RNI being a further two RKEF lines identical to those at HNI. RNI is currently under construction by SDI with expected first phase of commissioning commencing late April 2019 and the second kiln commencing commissioning mid-June 2019. The cost inputs and offtake arrangements are under the exact same terms and conditions as the HNI RKEF lines. An identical set of tax concessions has now been offered by official decree to RNI as per the existing concessions in place for HNI. RNI will pay no tax for a period of seven years followed by two years at half the normal corporate tax rate of 25%.

NIC have a number of options to increase the stake in RNI being;

- Increase ownership to 51-60% within 60 days of first NPI production based on a US$280m valuation
- Increase ownership to 51-60% after 60 days of first NPI production based on a US$300m valuation, and
- Move to 80% ownership with 18 months of first NPI production based on a US$300m valuation.

Figure 14: Ranger Nickel RKEF Lines Under Construction (March 2019)

Source: Patersons Securities Limited

Operating Costs

Operating costs for the RKEF lines can be generally split into thirds being one third power, one third ore supply and the remaining third consisting of labour, materials, management, repairs and maintenance.

Power supply is c.US6 cents per kwh which represents US$2,600 per contained Ni tonne. This power price will fluctuate based on thermal coal supply prices however we do not envisage the thermal coal price to increase by any material amount in the short to medium term with a likely reduction in supply price more likely longer term.

Ore supply is purchased at the set rate for nickel ore at US$29.50 per tonne for 1.9% grade and adjustments made according to any relevant superior or inferior nickel grade and any moisture content variability. The ore that NIC produces out of the Hengjaya mine cannot be transferred directly to the kiln as all ore is essentially pooled and blended together at the port to ensure an even and consistent ore product across all the RKEF lines within the IMIP.

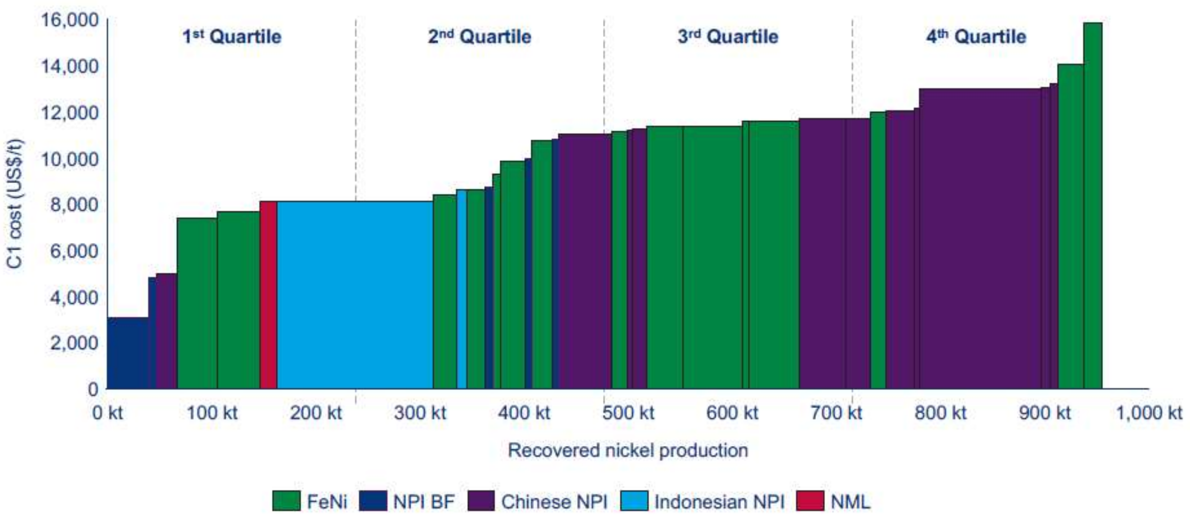
Reductant coal costs US$1,450 per contained Ni tonne and is representative of the coal costs of the IMIP from international suppliers. The price will hinge on the market price for coking coal which is currently achieving a high price although longer term we should see the price come off from todays elevated rates.

Labour is predominantly all local Indonesian workforce and are relatively low cost. Minimum rates for labour are set throughout the IMIP so each RKEF line essentially pay the same hourly costs for labour. The same strategy applies to materials where each RKEF line has access to the same supply chain. Sustaining capital for the RKEF is extremely low at less than US$1m per year.

The whole design of the IMIP has been structured to maintain equality throughout the facility and each RKEF line will operate at basically the same operating costs with the only real savings to be had are through production efficiencies (which are limited), manning numbers, offsite overheads and non-cash depreciation costs.

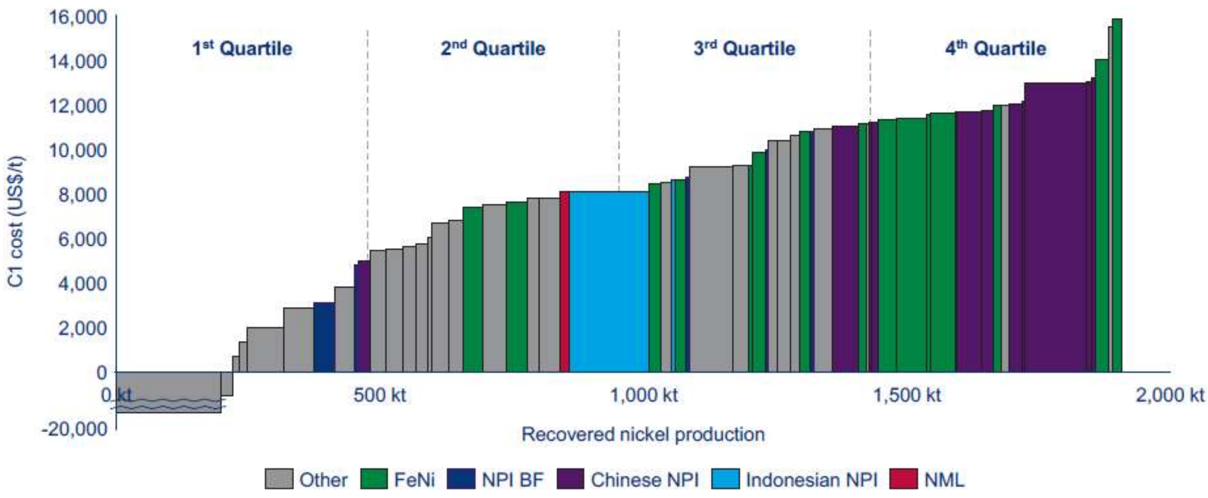
Combined, the operating costs for the RKEF lines including sustaining capex will generally be in the order of c.US$8,400 per tonne earning a place in the bottom quartile of global nickel pig iron producers (Figure 15) and in the second quartile for global nickel producers (Figure 16).

Figure 15: NPI C1 Cost Curve



Source: Nickel Mines Limited

Figure 16: Nickel C1 Cost Curve



Source: Nickel Mines Limited

Indonesian Foreign Ownership Obligation

The processing of minerals is not subject to the same foreign ownership requirements as producing mine assets and there is no requirement for any divestment of NIC's interests in either of the RKEF projects.

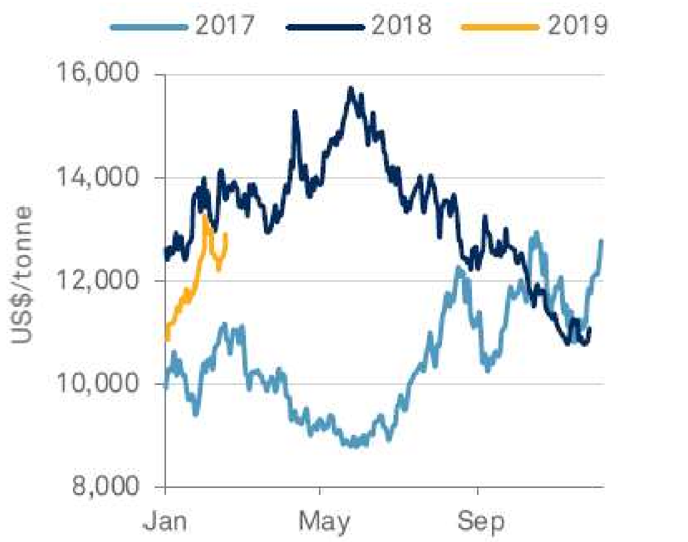
COMMODITY OUTLOOK

NIC offers investors exposure to the nickel market as one of the few listed pure play nickel producers. NPI prices within the IMIP are set based on prices paid by 3-4 of the largest Chinese stainless steel mills for their NPI with an adjustment made for VAT and freight cost with a minimum floor of 90% of the LME nickel price. The prices for 2018 ranged from 95-105% of the LME price. All IMIP NPI prices are set on the 18th day of each month. Just as important however is the stainless steel market as ultimately the nickel produced is for the sole purpose of feeding the hungry 3mtpa stainless steel plant in the IMIP.

Nickel

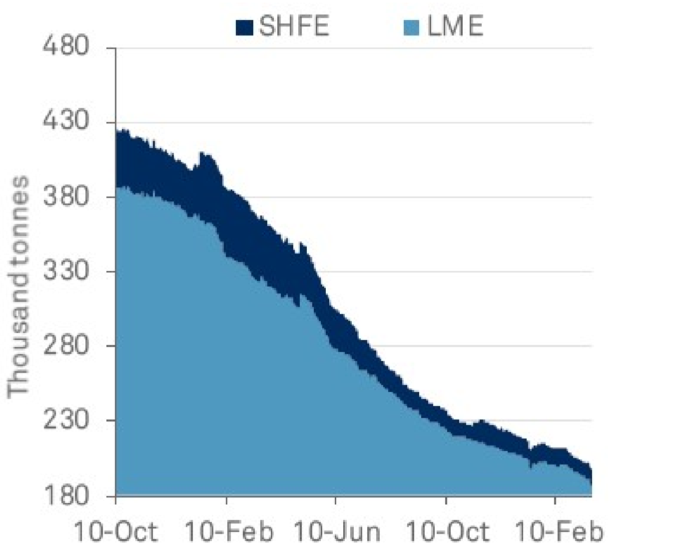
Nickel has recently traded within the range of US$12,000 and US$14,000 per tonne. Stocks of nickel have been reduced of late with a decline in stocks of 12.9% since the start of calendar year 2019 to 180,552 tonnes. The supply deficit is not expected to overtake demand until 2027 hinting that we should expect to see upward pressure on the nickel price in the coming years.

Figure 17: LME Nickel Price



Source: S&P Global Market Intelligence

Figure 18: Nickel Exchange Stocks



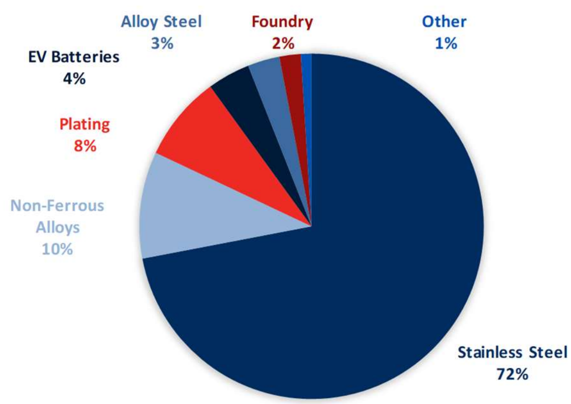
Source: S&P Global Market Intelligence

Nickel is set to see demand increase based on the growth of electric vehicles and the related battery storage requirements. EV batteries currently account for 4% of first use, however we expect this to increase substantially over the medium to long term. Consensus growth is for battery powered vehicle growth of between 20% to 30% on volumes of sales through until 2030. The sector will benefit from a number of government implemented policy bans on internal combustion engines which will lead to mass adoption of EV's in the medium term.

Stainless Steel

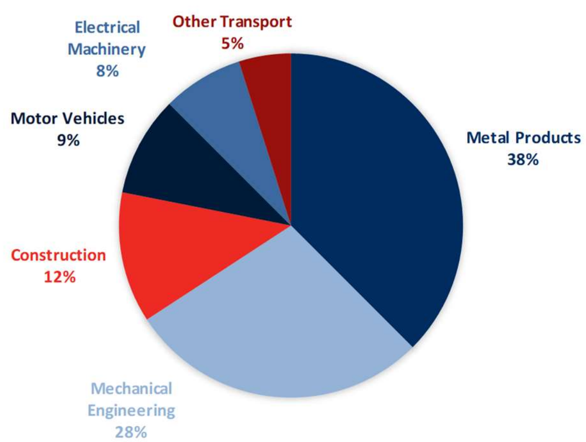
Stainless steel is the primary use of nickel with 72% of the world's nickel going into stainless steel production. Stainless steel in turn is predominantly used in general metal products, mechanical engineering products, construction and motor vehicles.

Figure 19: Nickel by First Use



Source: Patersons Securities Limited

Figure 20: Stainless Steel Use

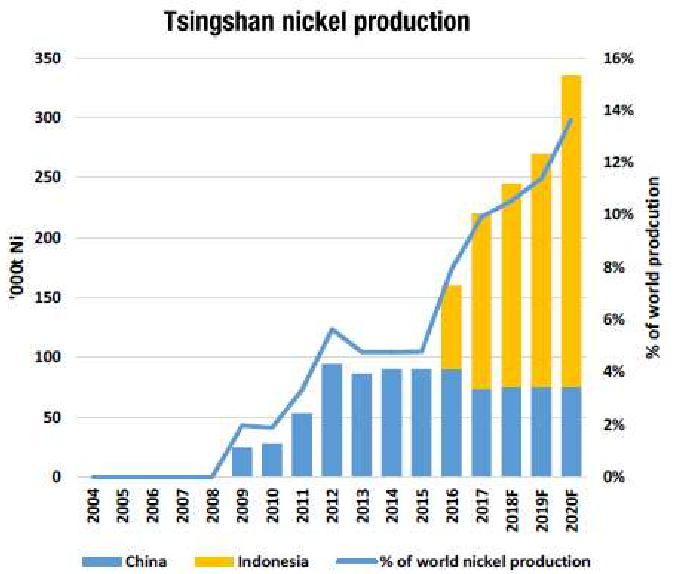


Source: Patersons Securities Limited

The owners of the IMIP, Tsingshan, have rapidly climbed the ranks of nickel producers thanks to their RKEF processing techniques and their integration strategy in becoming the world's largest stainless steel producer. In just ten years, Tsingshan have gone from 0% of the world's nickel production to nearly 12% having produced c.250,000 tonnes of nickel. Figure 21 shows the impact the IMIP has had on this transition to a global leader in nickel production with nearly 10% of global nickel expected to come out of Tsingshan's Indonesian operations in 2019. The IMIP will also enable Tsingshan increase its global share in stainless steel melt output from c.13% up to nearly 25% by 2020.

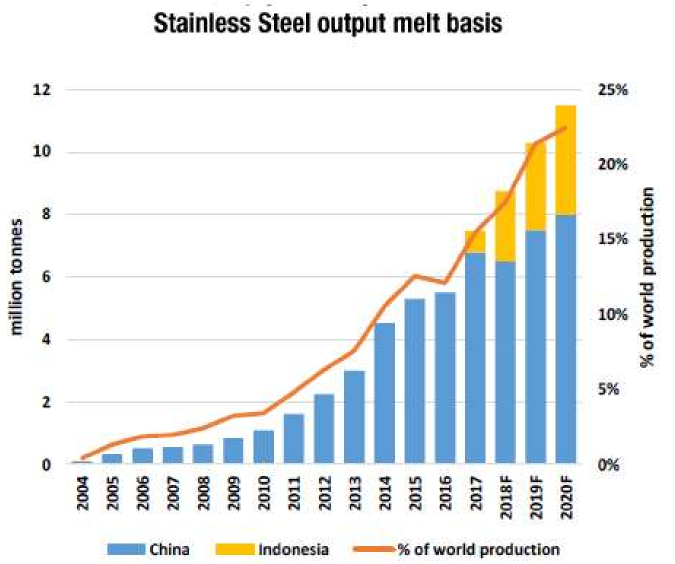
Stainless steel melt production has grown at a CAGR of 5.85% since 1980 with production now totalling c.50mtpa. Supply has been largely able to meet demand thanks in part to Tsingshan developing new facilities in China, India, Indonesia and elsewhere in the world. Tsingshan is effectively in a position now where it can control the stainless steel market and therefore have a large bearing on the global nickel market and nickel prices.

Figure 21: Tsingshan Nickel Production



Source: *Nickel Mines Limited*

Figure 22: Tsingshan Stainless Steel Melt Production



Source: *Nickel Mines Limited*

CAPITAL

NIC listed on the ASX on August 20 2018 at an issue price of $0.35 per share. Total shares on issue sit at 1,387,995,624 with Chinese companies Shanghai Decent and Shanghai Wanlu Investment Group being the largest individual holders with 11.6% and 10.8% respectively.

Figure 23: Top Twenty Holders (March 2019)

Rank	Holder	Current Securities	Percentage Held
1	HSBC Custody Nominees (Australia) Limited	224,171,912	16.2%
2	Shanghai Decent Investment (Group) Co Ltd	161,696,446	11.6%
3	Shanghai Wanlu Investment Co Ltd	149,258,258	10.8%
4	Citicorp Nominee Pty Limited	82,637,587	6.0%

5	UBS Nominees Pty Ltd	71,628,256	5.2%
6	Altinova Nominees Pty Limited	66,104,526	4.8%
7	Permgold Pty Ltd <The Seckold Super Fund>	57,611,135	4.2%
8	J P Morgan Nominees Australia Pty Limited	43,449,966	3.1%
9	QFSD International Co Limited	30,571,429	2.2%
10	QHCZ International Co Limited	26,571,429	1.9%
11	Merrill Llynch (Australia) Nominees Pty Limited	25,150,307	1.8%
12	Peng Lim Oon	21,487,143	1.5%
13	CS Third Nominees Pty Limited <HSBC Cust Nom AU LST 13 A/C>	21,456,761	1.5%
14	Bellambi Enterprises Limited	20,949,929	1.5%
15	Bell Potter Nominees Ltd <BB Nominees A/C>	17,936,930	1.3%
16	Rosignol Pty Ltd <Nightingale Family A/C>	14,950,132	1.1%
17	Andrew Paul Valmorbida	14,530,476	1.0%
18	Brisport Nominees Pty Ltd <House Head Nominee A/C>	12,777,265	0.9%
19	CO2 Capital Private Limited	10,302,679	0.7%
20	Susan Maree Valmadre	10,017,934	0.7%
TOTAL		**1,083,260,500**	**78.0%**

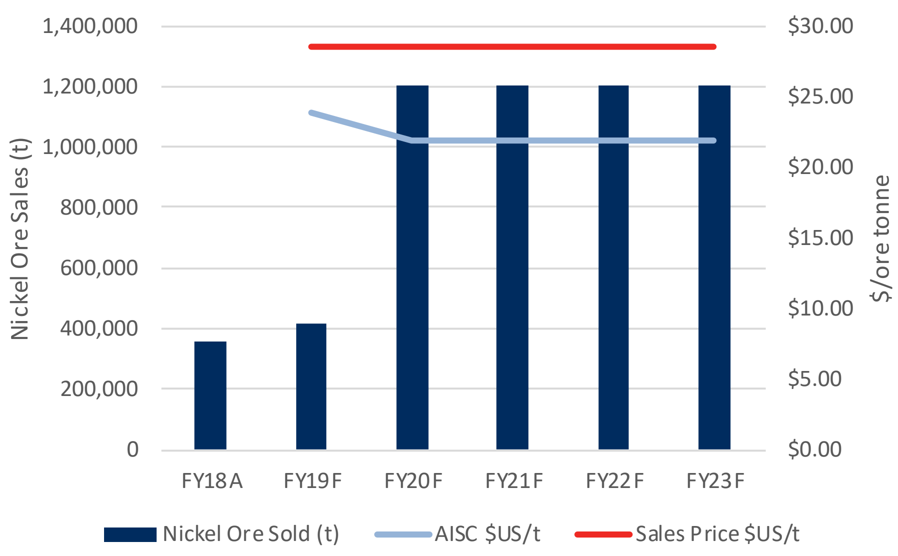
Source: Nickel Mines Limited

FINANCIALS

NIC derive revenue through both the sale of nickel laterite ore from the Hengjaya mine to the IMIP and through the sale of NPI from the RKEF lines to the downstream stainless steel processing plant.

The Hengjaya mine currently produces 400kt per year of attributable nickel ore at a grade of 1.9%. The average all in cost per tonne of nickel ore for FY19 is expected to be in the order of US$23.50/tonne. The sales price per tonne to the IMIP for FY19 is expected to be US$28.50 per tonne. Looking forward to FY20 we expect production to increase significantly to an attributable 1.2m tonnes per year at an all in cost of US$18.50 by moving operations down towards the coast at the Central pit. (Figure 24)

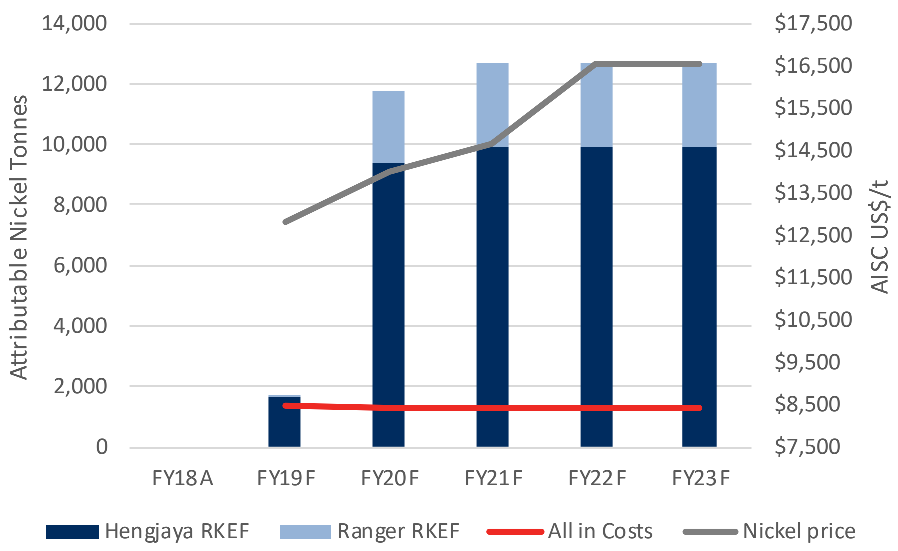
Figure 24: Hengjaya Mine Attributable Production Summary



Source: Patersons Securities Limited

The Hengjaya and Ranger RKEF lines will begin contributing revenue and cash flow late FY19 with the Hengjaya RKEF expected to be fully commissioned by the end of FY19. This will allow NIC to achieve an attributable nickel production of 12,000 tonnes in FY20. We forecast all in cash costs of the RKEF operations to be US$8,409 per nickel tonne once in steady state production. We see nickel price climbing from US$13,000/t in 2019 up to US$16,500/tonne in 2023 which we have used as our long term price beyond 2023.

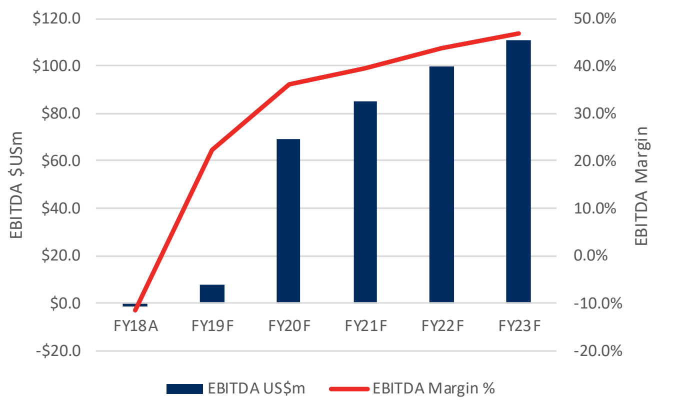
Figure 25: NIC Attributable RKEF Production Summary



Source: Patersons Securities Limited

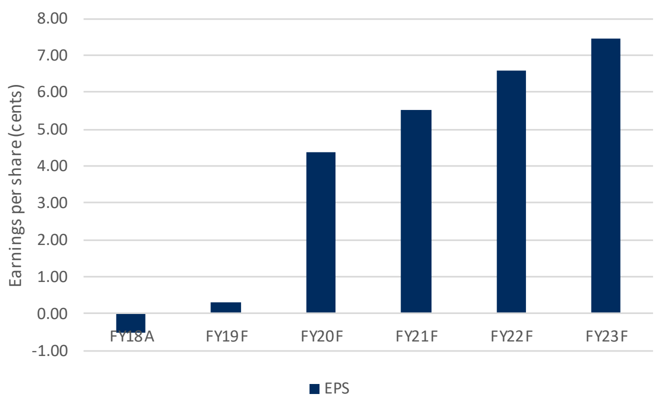
We forecast a small EBIDA profit for NIC in FY19 of US$7.7m rising to US$69.3m in FY20, US$85.1m in FY21 and US$100m in FY22. EBITDA margins are healthy in excess of 40% once in steady state operations. With a low tax exposure thanks to the generous Indonesian Government concessions, we forecast NPAT for FY19 to be US$4.2m, US$60.9m in FY20 and US$76.4m in FY21. This translates to earnings per share of 0.3c in FY19, 4.4c in FY20 and 5.5c in FY21.

Figure 26: Forecast EBITDA Margins



Source: *Patersons Securities Limited*

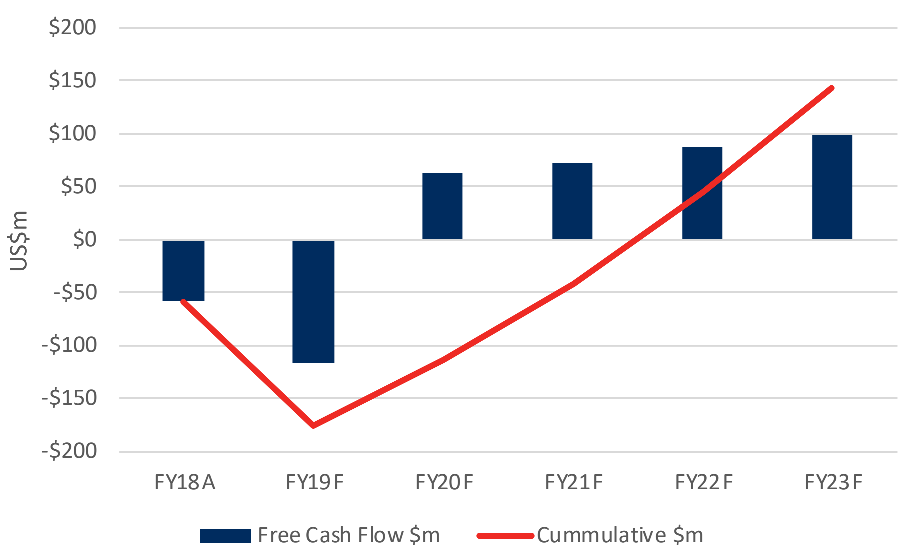
Figure 27: Forecast Earnings per Share



Source: *Patersons Securities Limited*

Free cash flow is forecast to be –US$117.1m in FY19 on the back of the capital investments made into the RKEF lines. We forecast this to enter positive territory in FY20 with an estimated US$62.7m and $US72.0m in FY21. On a cumulative basis, NIC should be cash flow positive in calendar year 2022.

Figure 28: Forecast Free Cash Flow



Source: *Patersons Securities Limited*

VALUATION & INVESTMENT CASE

We base our valuation on a sum of the parts methodology based on a discounted cash flow of the RKEF lines and the Hengjaya mine with a discount rate of 12%. We can see the Hengjaya mine itself is of little value to NIC in terms of cash flow although does remain a strategic asset in the region. Should the HPAL plant be constructed as planned we see this valuation increasing due to the significant amount of additional ore that can be sold which is currently mined as a waste product. The value in NIC really centres around the RKEF plant and NIC can be thought of as an industrial nickel refining story rather than a nickel mining story. On this basis we value NIC at $0.70 per share.

Figure 29: NIC Sum of the Parts Valuation

Method	Valuation (A$m)	% of Valuation	A$/share
Hengjaya Mine	68.4	7.1%	$0.05
RKEF Lines	886.6	91.8%	$0.64
Corporate	(19.4)	-2.0%	($0.01)
Exploration	10.0	1.0%	$0.01
Net Cash/(Debt)	20.3	2.1%	$0.01
	965.9	100%	**$0.70**

Source: Patersons Securities Limited

On a comparison basis with the only other Australian listed pure play nickel producer of a similar size, Western Areas Limited (WSA), we can see on forward PE basis, our valuation is comparable. If we use a forward PE of 13.1 for FY20 which is the current WSA metric based on consensus data, an implied valuation of NIC is $0.80/share. If we use an EV/EBITDA multiple for the same period of 3.8 for FY20 the implied valuation of NIC is $0.35/share. On an EV/EBITDA of 3.3 for FY20, an implied valuation of NIC is $0.44/share. While WSA may be useful as a comparison being the only other listed nickel producer of note, the operating model of the business are completely different and any comparison should be used with caution.

Figure 30: Western Areas Forward Multiple Comparison

	FY19F	FY20F	FY21F	FY22F
WSA Forward PE (consensus)	42.73	13.08	10.08	6.20
NIC EPS (AUD cents)	0.42	6.10	7.64	9.16
Implied NIC Valuation $/share	**0.18**	**0.80**	**0.77**	**0.57**
WSA EV/EBITDA (consensus)	6.3	3.8	3.3	2.5
NIC EBITDA $AUD m	10.8	96.3	118.3	138.7
NIC Implied EV $AUD m	67.6	367.1	392.4	342.1
Cash $AUD m	27.8	114.9	214.9	334.8
NIC Mcap $AUD m	95.5	482.0	607.2	676.9
Implied NIC Valuation $/share	**0.07**	**0.35**	**0.44**	**0.49**

Source: Bloomberg, Patersons Securities Limited

We see NIC as a compelling investment opportunity being one of the few listed companies with leverage to the nickel price and one of the only listed pure play nickel producers. NIC also provides the only opportunity globally to an exposure to Tsingshan, the world's largest stainless steel producer.

The NIC story is different to most miners in that mine life and a resource/reserve statement are largely irrelevant in the scheme of things as NIC should be viewed as an industrial nickel refining play rather than your typical mining story. With no need for exploration, feasibility studies, or development costs, NIC offers a real point of difference to most mining companies. With NIC investors can have exposure to the benefits of a resource company but without a lot of the costs generally associated with the industry.

Given the global demand for stainless steel and the abundant laterite ore reserves in the vicinity of the IMIP, the RKEF process should continue for many years to come without having to bear any costs for exploration, feasibility studies, or new mine developments. NIC offers resources exposure and the benefits of a resource company but without a lot of the costs generally associated with the industry. Any portfolio seeking nickel exposure needs to consider NIC as a compelling investment case.

Upside

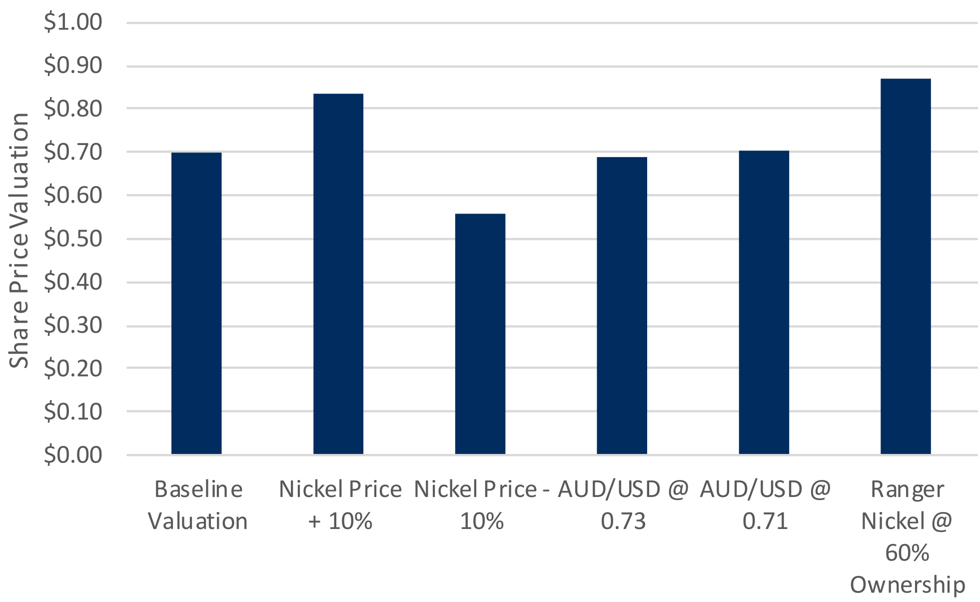
We see upside for NIC in the exposure to the nickel price which looks to be maintaining a supply deficit for some time to come placing upwards pressure on the price. We also see the increase of ownership of the Ranger and or Hengjaya RKEF lines as catalysts for a rerating. The option to increase Ranger to a 60% ownership looks to be a compelling business case and we would like to think this will occur at some stage within the next 12 months. In addition to this, we see other opportunities within the IMIP for NIC to take strategic interests to which Shanghai Decent has remained open.

The proposed High Pressure Acid Leach Plant (HPAL) could also provide NIC with a substantial business opportunity. The HPAL plant is jointly owned by Tsingshan (31% interest), GEM New Material Co (36%), CATL (25%) and Hanwa (8%). CATL is a Chinese battery producer and the world's largest provider of EV, HEV and PHEV batteries while GEM is a leading Chinese battery producer and recycler. The HPAL plant is expected to produce 50,000t of nickel per year and 4,000t of cobalt per year for a capital cost of only US$700m, significantly cheaper that traditional HPAL plants. The reason being the ability to leverage off the existing on site infrastructure including power plant, land, port, road networks, and supply chain gains. The opportunity for NIC will be the ability to provide a portion of the estimated 8mtpa of low grade nickel laterite ore which is currently mined as a waste product. Additionally, there may be an opportunity for a direct ownership interest in any new facilities built within the IMIP.

Sensitivities

A sensitivity analysis has been conducted on the AUD/USD price as well as the nickel price. Additionally, we have looked at the impact on valuation should the interest in the Ranger RKEF line be increased to 60% in line with Hengjaya Nickel.

Figure 31: Sensitivity Analysis



Source: Patersons Securities Limited

MAJOR RISKS

Commodity Price

Commodity prices can fluctuate rapidly by a number of factors including demand, production costs, macroeconomic factors, interest rates, inflation and general global economic stability. In the short term we see little risk on the downside for nickel prices.

Country Risk

While some investors will be put off by the fact this project is located in Indonesia, we see this project to be uniquely different to a stock standard sole mining operation. The threat of the Indonesian Government removing operating licenses, banning exports, etc. is low as this project is a flagship project for the Indonesian Government and has delivered on the exact intent as to why the export ban was enacted in the first place. Where there was once a sleepy fishing town with little economic benefit, there is no a world class stainless steel manufacturing facility offering employment, education, infrastructure benefits and an increase in the standard of living in the direct vicinity of the project. The taxes the Indonesian Government is set to receive from the export of stainless steel is also significant. In addition to this, the Chinese and Indonesian relationship is crucial to Indonesia benefitting from the Chinese One Belt, One Road initiative and it would be extremely unlikely for the Indonesian Government to place this at risk by placing onerous regulations on the operation.

A country risk that cannot be discounted however is the geological risk Indonesia has in relation to earthquakes. The facility is not located on a major fault line, but there is always a risk of earthquakes and tsunamis within the Indonesian archipelago.

Operational Risk

Every project carries operational risks. We see the operational risks for this project to be relatively low, particularly with the cost structure of the RKEF lines. The power plant is one third of the costs, which is influenced by the prevailing thermal coal prices. Reliability of power supply is a very minor risk as the power plant supplies power to the entire plant which cannot afford prolonged downtime. Ore supply is plentiful at agreed supply rates and labour is plentiful and relatively affordable. Tsingshan are experts in the operation of RKEF plants and any construction or design risks will be minimal.

Reliance on Tsingshan Group

The Tsingshan Group through Shanghai Decent is ultimately responsible for the overall operation of the IMIP and operates key infrastructure throughout the park critical to the success of the RKEF lines such as port facilities, supply chain logistics, security, licensing and permitting and community engagement. In terms of operational costs, NIC does not have a lot of control or influence over the inputs into the process as the majority of costs are boil down to coal supply and therefore coal prices and labour. NIC will therefore be reliant on Tsingshan to conduct operations in a timely, cost effective and responsible manner.

BOARD AND MANAGEMENT

Robert Neale - Chairman

Robert has more than 30 years of management experience in the resources and energy sectors. Robert has previously held the position of Managing Director for New Hope Corporation Limited (NHC) as well as a number of board positions within both the public and private sectors. Robert is currently Chairman of Mayur Resources Limited (MRL) and Non-Executive Director of the unlisted Amber Power Limited.

Norman Seckold – Deputy Chairman

Norman has spent more than 30 years in managerial roles for natural resource companies both in Australia and overseas. Norman has previously served as Chairman for a number of publicly listed companies including Moruya Gold Mines NL, Pangea Resources Limited, Timberline Minerals Inc, Perseverance Corporation Limited, Valdora Minerals NL, Viking Gold Corporation, Mogul Mining NL, Bolnisi Gold NL and Cockatoo Coal Limited. Norman is currently the Chairman of Alpha HPA Limited (A4N), Planet Gas Limited (PGS) and Santana Minerals Ltd (SMI). He is also a director of the unlisted company Mekong Minerals Ltd.

Justin Werner – Managing Director

Justin holds a bachelor of management from the University of Sydney and has more than 20 years' experience in the mining industry. Justin has a vast experience within Indonesia having developed a number of projects in country. Prior to Justin's Indonesian ventures, he has worked as a consultant on a wide variety of projects including Freeport, Lihir, Ingwe Coal, West Angeles and Nickel West. Justin is also a Non-Executive Director for Alpha HPA Limited (A4N).

Peter Nightingale – Executive Director and Chief Financial Officer

Peter graduated with a Bachelor of Economics from the University of Sydney and is a member of the Institute of Chartered Accountants in Australia. Peter has over 25 years' experience in financial management for both private and public companies in Australia and the United States of America. Peter is currently a Director of Alpha HPA Limited (A4N), Planet Gas Limited (PGS) and the unlisted company Prospech Limited.

James Crombie – Non-executive Director

James is a mining engineer with nearly 40 years' experience in the resources sector including senior positions for Hope Bay Mining Corporation, Ariane Gold Corp. Palmerejo Silver and Gold Corporation and Sherwood Copper Corporation. James is currently CEO of Odyssey Resources Corp and a Director of Arian Silver and Torex Gold Resources Inc.

Weifeng Huang– Non-executive Director

Mr Huang has a bachelor of engineering and a master of business administration from the Zhejiang University. Mr Huang has a wide experience in mining and mineral processing having worked for a number of Chinese listed companies. Currently Mr Huang is the Chairman of Shanghai Decent Investment Group (SDI) who has an 11.65% stake in NIC. Mr Huang is also the President Director of the IMIP and was influential in the construction and operation of the facility.

Mark Lochtenberg– Non-executive Director

Mark is a former co-head of Glencore International AG's worldwide coal division that would later become Xstrata Coal. Mark was also the Executive Chairman and founding Managing Director of Cockatoo Coal Limited. Mark is currently Chairman of Equus Mining Limited (EQE), and Managing Director of Pacific American Coal Limited (PAK).

Xu Yuanyuan– Non-executive Director

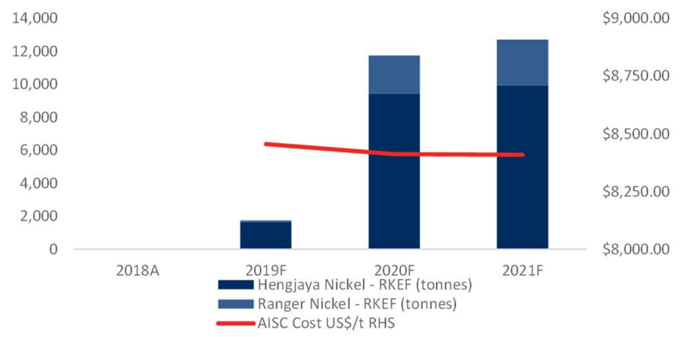
Ms Xu is a business professional and an Executive Director of Shanghai Wanlu Investment Co. Ltd who currently have a 10.75% stake in NIC.

Nickel Mines Limited	Price	$0.41
Valuation	**$Am**	**$/sh**
Hengjaya Mine	68.4	0.05
RKEF Lines	886.7	0.64
Exploration	10.0	0.01
Corporate	(19.4)	(0.01)
Net cash/(debt)	20.3	0.01
Total	**966.0**	**0.70**

Resources				
Resource	**Tonnes (m)**	**Ni %**	**Ni Metal (t)**	**Fe %**
Measured	6.9	1.2	8	23.0
Indicated	50.0	1.4	70	26.0
Inferred	120.0	1.3	156	29.0
Total	**180.0**	**1.3**	**234**	**28.0**

Assumptions and Sensativities			
Input	**Assumption**	**Scenario**	**Impact on Valuation**
Nickel Price USD/t	12,800-16,500	+/- 10% Ni Price	-/+ 19.7%
AUD/USD	0.72	+/- 0.01 in FX	-/+ 1.4%

Production Summary (attributable tonnes)



Directors & Substantial Shareholders	
Name	**Position**
Robert Neale	Non-Executive Chairman
Norman Seckold	Deputy Chairman
Justin Werner	Managing Director
Peter Nightingale	Executive Director and Chief Financial Officer
James Crombie	Non-Executive Director
Weifeng Huang	Non-Executive Director
Mark Lochtenberg	Non-Executive Director
Yuanyuan Xu	Non-Executive Director

Substantial Shareholders	**No. Shares (m)**	**%**
Shanghai Decent Investment Group	161.7	11.65
Shanghai Wunlu Investments	149.3	10.75
Blackrock	137.8	9.93
Norman Seckold	123.7	8.91
Top 20 Shareholders		

Ratios	**2018A**	**2019F**	**2020F**	**2021F**
Valuation				
EV/EBITDA (x)	(147.8)	70.9	7.0	4.9
PE (x)	(78.9)	134.7	9.3	7.5
Price/FCF (x)	(0.01)	(0.00)	0.01	0.01
Profitability				
Revenue Growth (%)	58	158.0	450.6	12.4
EBITDA growth (%)	(64)	(597.8)	795.4	22.8
EBITDA margin (%)	(11.5)	22.1	36.0	39.4
NPAT margin (%)	(21.6)	12.1	31.7	35.3
ROE (%)	(8.0)	2.9	24.9	24.4
ROIC (%)	(2.1)	3.2	23.3	22.6
Balance Sheet				
Net Debt (Cash) ($m)	(0.8)	(20.0)	(82.7)	(154.7)
Net Debt/Equity (%)	na	na	na	na
Interest Cover (x)	(2.5)	2.9	na	na
NTA ($/sh)	0.13	0.16	0.20	0.25
Price/NTA (x)	3.1	2.6	2.1	1.6
Shares outstanding (m)	563	1,388	1,388	1,388

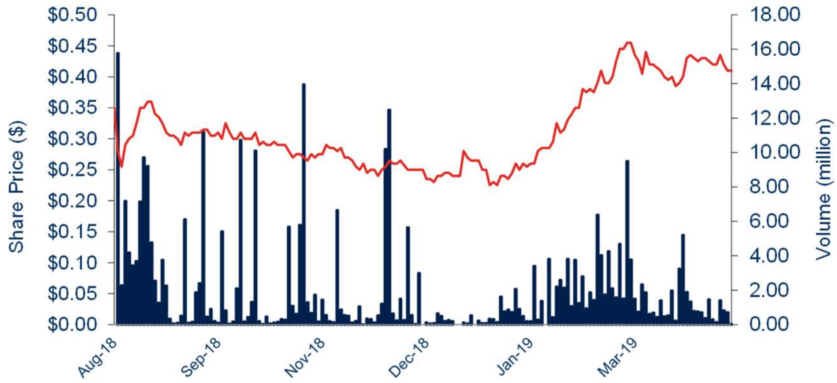
Year End 30 June

Profit & Loss (US$m)	**2018A**	**2019F**	**2020F**	**2021F**
Revenue	13.6	35.0	192.5	216.3
Joint Venture Gain/(loss)	0.0	0.0	0.0	0.0
Operating Expenses	(15.1)	(27.2)	(123.1)	(131.2)
EBITDA	**(1.6)**	**7.7**	**69.3**	**85.1**
D&A	(0.1)	(0.9)	(4.8)	(5.4)
EBIT	**(1.6)**	**6.9**	**64.5**	**79.7**
Net Interest and FX Adjustments	(0.7)	(2.4)	0.5	1.2
Pre-tax Profit	**(2.3)**	**4.5**	**65.0**	**80.9**
Tax Expense	(0.7)	(0.3)	(4.1)	(4.5)
Normalised NPAT	**(2.9)**	**4.2**	**60.9**	**76.4**
Significant items net	0.0	0.0	0.0	0.0
Reported NPAT	**(2.9)**	**4.2**	**60.9**	**76.4**
Earnings Per Share				
EPS (Reported)	(0.01)	0.00	0.04	0.06
EPS (Adjusted)	(0.01)	0.00	0.04	0.06
EPS Growth (%)	-56%	-159%	1342%	25%
Dividend Per Share				
DPS	0.0	0.0	0.00	0.0
DPS Growth (%)	N/A	N/A	N/A	N/A
Payout Ratio (%)	0%	0%	0%	0%
Dividend Yield (%)	0.0	0.0	0.0	0.0
Franked (%)	N/A	N/A	N/A	N/A

Cash Flow (US$m)	**2018A**	**2019F**	**2020F**	**2021F**
EBITDA	(1.6)	7.7	69.3	85.1
Net interest	0.1	(2.4)	0.5	1.2
Income tax paid	0.0	(0.3)	(4.1)	(4.5)
Working capital	(6.7)	(0.4)	6.6	1.0
Operating Cashflow	**(8.2)**	**4.7**	**72.3**	**82.8**
Capital and Exploration expenditure	(50.7)	(121.7)	(9.6)	(10.8)
Free Cashflow	**(58.9)**	**(117.1)**	**62.7**	**72.0**
Disposals/Other	0.0	0.0	0.0	0.0
Increase (Repay) Debt	(13.2)	0.0	0.0	0.0
Equity Raised	72.1	136.3	0.0	0.0
Distribution Paid	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0
Net Change in Cash	**0.0**	**19.2**	**62.7**	**72.0**
Closing Cash Balance	**0.8**	**20.0**	**82.7**	**154.7**

Balance Sheet (US$m)	**2018A**	**2019F**	**2020F**	**2021F**
Cash	0.8	20.0	82.7	154.7
Receivables	0.4	3.8	21.1	23.7
Inventories	0.6	1.6	8.9	10.0
PP&E	26.6	27.5	32.3	37.7
Exploration	0.0	0.0	0.0	0.0
Investments	50.0	169.9	169.9	169.9
Other Assets	0.8	0.3	0.3	0.3
Total Assets	**79.2**	**223.2**	**315.3**	**396.3**
Creditors	2.9	6.9	38.0	42.7
Current Borrowings	0.0	0.0	0.0	0.0
Non-current Borrowings	0.0	0.0	0.0	0.0
Other Liabilities	1.4	1.3	1.3	1.3
Total Liabilities	**4.3**	**8.2**	**39.3**	**44.0**
Shareholders Funds	**75.1**	**215.9**	**276.9**	**353.2**

Recommendation History



Date	Type	Target Price	Share Price	Recommendation	Return
	Current Share Price		0.41		

Stock recommendations: Investment ratings are a function of Patersons expectation of total return (forecast price appreciation plus dividend yield) within the next 12 months. The investment ratings are Buy (expected total return of 10% or more), Hold (-10% to +10% total return) and Sell (> 10% negative total return). In addition we have a Speculative Buy rating covering higher risk stocks that may not be of investment grade due to low market capitalisation, high debt levels, or significant risks in the business model. Investment ratings are determined at the time of initiation of coverage, or a change in target price. At other times the expected total return may fall outside of these ranges because of price movements and/or volatility. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. This Document is not to be passed on to any third party without our prior written consent.

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1300 582 256
patersons@psl.com.au
www.psl.com.au

Patersons Securities Limited Disclosure of Interest

Patersons Securities and its respective officers and associates may have an interest in the securities or derivatives of any entities referred to in this material

Patersons Securities does, and seeks to do, business with companies that are the subjects of its research reports.

Patersons Securities Corporate Relationship Disclosure

88E	Patersons Securities have acted for 88 Energy Limited (88E) within the past two years and have received fees for these services.
AKM	Patersons Securities have acted for Aspire Nmining Limited (AKM) within the past two years and have received fees for these services.
AXL	Patersons Securities have acted for Axsesstoday Limited (AXL) within the past two years and have received fees for these services.
BOE	Patersons Securities have acted for Boss Resources Limited (BOE) within the past two years and have received fees for these services.
BRB	Patersons Securities have acted for Breaker Resources NL (BRB) within the past two years and have received fees for these services.
BSX	Patersons Securities have acted for Blackstone Minerals Limited (BSX) within the past two years and have received fees for these services.
BUX	Patersons Securities have acted for Buxton Resources Limited (BUX) within the past two years and have received fees for these services.
CSS	Patersons Securities have acted for Clean Seas Seafood Limited (CSS) within the past two years and have received fees for these services.
GLL	Patersons Securities have acted for Galilee Energy Limited (GLL) within the past two years and have received fees for these services.
IBG	Patersons Securities have acted for Ironbark Zinc Limited (IBG) within the past two years and have received fees for these services.
NUS	Patersons Securities have acted for Nusantara Resources (NUS) within the past two years and have received fees for these services.
PEX	Patersons Securities have acted for Peel Mining Limited (PEX) within the past two years and have received fees for these services.
RCL	Patersons Securities have acted for ReadCloud Limited (RCL) within the past two years and have received fees for these services.
STN	Patersons Securities have acted for Saturn Metals Limited (STN) within the past two years and have received fees for these services.
SYA	Patersons Securities have acted for Sayona Mining Limited (SYA) within the past two years and have received fees for these services.
VMY	Patersons Securities have acted for Vimy Resources Limited (VMY) within the past two years and have received fees for these services.
WKT	Patersons Securities have acted for Walkabout Resources Ltd (WKT) within the past two years and have received fees for these services.
XTE	Patersons Securities have acted for Xtek Limited (XTE) within the past two years and have received fees for these services.

PATERSONS

1300 582 256
patersons@psl.com.au
www.psl.com.au

Research

Cathy Moises - Head of Research	Phone: (+61 3) 9242 4030	Email: cmoises@psl.com.au
James Farr - Associate Analyst	Phone: (+61 8) 9263 1215	Email: jfarr@psl.com.au
Daniel Veasey - Research Assistant	Phone: (+61 8) 9225 2818	Email: dveasey@psl.com.au

Strategy & Economics

Greg Galton - Director Private Wealth	Phone: (+61 8) 9263 1612	Email: ggalton@psl.com.au

Commodities

Cathy Moises - Head of Research	Phone: (+61 3) 9242 4030	Email: cmoises@psl.com.au
Cam Hardie - Analyst	Phone: (+61 3) 9242 4153	Email: chardie@psl.com.au
Xavier Braud - Analyst	Phone: (+61 8) 9225 2813	Email: xbraud@psl.com.au

Industrials

Martyn Jacobs - Analyst	Phone: (+61 3) 9242 4153	Email: mjacobs@psl.com.au
Phil Carter - Analyst	Phone (+61 8) 9225 2819	Email: Pcarter@psl.com.au
Allan Franklin - Analyst	Phone (+61 3) 9242 4155	Email: afranklin@psl.com.au

Institutional Dealing

Dan Bahen	Phone: (+61 8) 9263 1274	Email: dbahen@psl.com.au
Michael Brindal	Phone: (+61 8) 9263 1186	Email: mbrindal@psl.com.au
Tom Bahen	Phone: (+61 8) 9263 1180	Email: tbahen@psl.com.au
Artie Damaa	Phone: (+61 2) 8238 6215	Email: adamaa@psl.com.au
Paul Doherty	Phone: (+61 3) 8803 0108	Email: pdoherty@psl.com.au
Chris Kelly	Phone: (+61 3) 9242 4078	Email: ckelly@psl.com.au
Jeremy Nugara	Phone: (+61 3) 8803 0166	Email: jnugara@psl.com.au
Phil Schofield	Phone: (+61 2) 8238 6223	Email: pschofield@psl.com.au
Sandy Wylie	Phone: (+61 8) 9263 1232	Email: swylie@psl.com.au