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SPEC BUY

Current Price	$0.69
Target Price	$1.31

Code:	**CTM**
Sector:	**Materials**

* All figures in AUD unless stated otherwise

Shares on Issue (M):	**332**
- fully diluted (M)	**392**
Market Cap ($M):	**234**
- fully diluted ($M)	**276**
Cash (Mar 21)	A$20m
Debt (Mar 21)	A$0m
Net cash ($M):	**20**
Enterprise value ($M):	**214**
52 wk High/Low (ps):	**$0.12** **$0.92**
12m av. daily vol. (Mshs):	**1.04**

Key Metrics: (Scenario 1)

	FY25e	FY26e	FY27e
P/E (x)	6.7	2.3	2.1
EV/EBITDA (x)	1.9	1.1	1.0

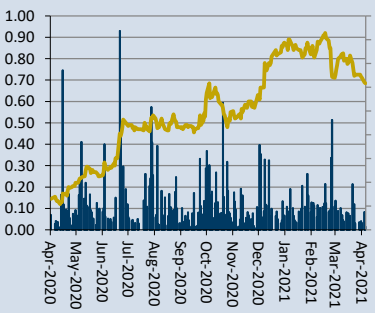
Financials: (Scenario 1)

	FY25e	FY26e	FY27e
Revenue ($M)	185	370	370
EBIT ($M)	67	157	165
NPAT (A$M)	44	127	140
Net assets ($M)	187	228	231
Op CF ($M)	37	68	61

Per share data: (Scenario 1)

EPS (c)	10.4	30.2	33.2
Dividend (cps)	0.0	0.0	0.0
Yield (%)	-	-	-
CF/Share (cps)	9.9	20.5	18.5
Payable Prod Ni (t)	8,044	16,088	16,088

Share Price Graph and trading volumes (msh)



Please refer to important disclosures at end of the report (from page 14)

Thursday, 15 April 2021

Centaurus Metals (CTM)

Jaguar in the scope

Analyst: George Ross

Quick Read

Centaurus Metals (CTM) has released a 'Base-case' Scoping Study for development of the Jaguar nickel sulphide project in Brazil. This scenario incorporates a 2.7Mt flotation plant, fed from eight deposits with open pit and underground mining. The study generates robust financial outcomes over an initial 10-year mine life. We expect a future 'Value-add' project model to provide better financial outcomes than the base-case study. Nickel is well positioned to capture growth from the emerging EV battery market. Nickel metal pricing has recently suffered downward pressure on news of a potentially disruptive technology that may allow conversion of nickel pig iron (NPI) to high quality matte. If this production pathway is technically viable, we expect is to be both financially and environmentally costly. CTM is well positioned to become a low carbon footprint nickel producer and we speculate it will be rewarded through investment by ESG funds and/or environmentally sensitive OEMs.

Main Points

Base case Scoping Study:

The 'Base-case' development envisages a 2.7Mt flotation plant fed from eight deposits with open pit and underground mining. The study generates robust financial outcomes over an initial 10-year mine life.

Updated project valuation:

We have completed updated project valuations for both the 'base case' and 'value add' development scenarios and generated technically risked NPV_9 estimates of $314M & $427M respectively.

Nickel's future is electric:

The nickel market is well positioned to capture growth from the emerging EV battery market. High performance nickel cathode lithium-ion batteries are becoming increasingly popular. See pages 8-12 for an expanded commentary.

Green is good:

When compared to sulphide, laterite operations produce 5-10 times the amount of CO_2 per tonne of nickel produced. CTM is well positioned to brand itself as a low-carbon nickel producer and will be attractive to sources of ESG focussed mining investment funding.

Recommendation

Argonaut has increased CTM's price target to $1.31ps based on the simple average of the 'Base-case' and 'Value-add' development options. A SPEC BUY recommendation is maintained.

Centaurus Metals

Equities Research
Analyst: George Ross

Scenario 1 - Standard Flotation Dev.

Recommendation	**Speculative Buy**	**Sector**	**Metals & Mining**
Current Price	**$0.69**	**Issued Capital (Mshs)**	**332**
Valuation	**$1.03**	**Market Cap (M)**	**$229**
			Tuesday, 13 April 2021

Profit & loss (A$M) 30 June	2025E	2026E	2027E	2028E
Sales Revenue	**185**	**370**	**370**	**402**
+ Other income/forwards	**0**	**0**	**0**	**0**
- Operating costs	-57	-118	-127	-119
- Royalties	-10	-20	-20	-21
- Corporate & administration	-4	-4	-4	-4
Total Costs	**-71**	**-142**	**-151**	**-143**
EBITDA	**114**	**228**	**219**	**258**
- margin	62%	62%	59%	64%
- D&A	-48	-70	-54	-57
EBIT	**67**	**157**	**165**	**202**
+ Finance Income/Expense	-15	-8	0	0
PBT	**51**	**150**	**165**	**202**
- Tax expense	-8	-22	-25	-30
- Impairments and other	0	0	0	0
NPAT	**44**	**127**	**140**	**171**

Cash flow (A$M)	2025E	2026E	2027E	2028E
+ Revenue	185	370	370	402
- Cash costs	-131	-273	-284	-274
-Tax payments	-2	-21	-24	-28
+ Interest & other	-15	-8	0	0
Operating activities	**37**	**68**	**61**	**99**
- Property, plant, mine devel.	-146	-10	-9	-54
- Exploration	-2	-2	-2	-2
- Feasibility Studies	0	0	0	0
Investment activities	**-148**	**-12**	**-11**	**-56**
+ Borrowings	160	0	0	0
- Dividends	0	0	0	0
+ Equity	0	0	0	0
Financing activities	**160**	**0**	**0**	**0**
Cash change	**49**	**56**	**50**	**43**

Balance sheet (A$M)	2025E	2026E	2027E	2028E
Cash	**109**	**165**	**215**	**258**
Other Current Assets	0	0	0	0
Total current assets	**109**	**165**	**215**	**258**
Property, plant & equip.	**196**	**136**	**91**	**89**
Investments/other	0	0	0	0
Total non-curr. assets	**196**	**136**	**91**	**89**
Total assets	**305**	**301**	**306**	**346**
Trade payables	32	36	37	42
Short term borrowings	240	53	0	0
Other	33	37	38	33
Total curr. liabilities	**65**	**73**	**75**	**75**
Long term borrowings	53	0	0	0
Other	0	0	0	0
Total non-curr. liabil.	**53**	**0**	**0**	**0**
Total liabilities	**118**	**73**	**75**	**75**
Net assets	**187**	**228**	**231**	**271**

Resources Feb 2021	Mt	Ni %	Cu %	Co ppm
Jaguar South (II)	18.7	0.97	0.05	206
Jaguar Central (II)	10.2	1.00	0.06	268
Jaguar North (II)	3.3	1.09	0.18	350
Jaguar Central North (I)	5.8	0.80	0.05	210
Jaguar North East (I)	8.3	0.78	0.09	253
Jaguar West (I)	5.7	0.80	0.04	150
Onca Preta (II)	3.3	1.58	0.09	558
Onca Rosa (I)	3.2	0.88	0.06	251
Total (II)	58.5	0.95	0.07	249

Financial ratios	2025E	2026E	2027E	2028E
GCFPS Diluted (Ac)	10	20	18	30
CFR (X)	7.1	3.4	3.7	2.3
EPS Diluted (Ac)	10	30	33	40
PER (X)	6.7	2.3	2.1	1.7
DPS ($)	0%	0%	0%	0%
Yield (%)	0%	0%	0%	0%
Interest cover (X)	4	21	0	0
ROCE (%)	28%	69%	71%	74%
ROE (%)	28%	66%	71%	74%
Avg Gearing (%)	116%	64%	0%	0%

Operations summary	2025E	2026E	2027E	2028E
Jaguar				
Ore processed (Mt)	1.3	2.5	2.5	2.5
Ni Head grade (%)	1.1	1.1	1.1	1.2
Met. Recovery (%)	78	78	78	78
Share of Ni in Final Product (t)	10725	21450	21450	22620
Share of Payable Ni (t)	8044	16088	16088	16965
Cost per milled tonne (US$/t)	53	56	59	56
AISC (US$/lb)	3.2	2.8	3.2	2.8
Growth capital ($M)	109.6	7.5	7.1	40.5

Price assumptions	2025E	2026E	2027E	2028E
AUDUSD	0.75	0.75	0.75	0.75
Nickel (US$/t)	16500	16500	16500	16500
Nickel (A$/t)	22000	22000	22000	22000

Jaguar Project Valuation	A$M	A$/sh
Jaguar Project NPV9 AUD	483	1.46
Risk Discount (Study Maturity 35%)	-169	-0.51
Jaguar Project NPV9 (Risk Discounted 35%)	314	0.95

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 (Risk Discounted 35%)	314	0.95
Jambreiro Project	10	0.03
Exploration, all sites	74	0.22
Corporate overheads	-18	-0.05
Cash and bullion	20	0.06
Current Debt	0	0.00
Tax benefit	0	0.00
Hedging	0	0.00
Option/equity dilution	-57	-0.17
Total	343	1.03

Directors, management	
Didier Murcia	Chairman
Darren Gordon	Managing Director / CEO
Bruno Scarpelli	Executive Director
Mark Hancock	Non-Executive Director
Chris Banasik	Non-Executive Director
Roger Fitzhardinge	Operation Manager
John Westdorp	Chief Financial Officer

Shares	2025E	2026E	2027E	2029E
New shs issued/exerciseable	0	0	0	0
Average issue price	0.00	0.00	0.00	0.00
Ordinary shares - end	422	422	422	422
Diluted shares - end	422	422	422	432

Centaurus Metals

Equities Research
Analyst: George Ross

Scenario 2 - POX Value Add Dev.

Recommendation	**Speculative Buy**
Current Price	**$0.69**
Valuation	**$1.59**

Sector	**Metals & Mining**
Issued Capital (Mshs)	**332**
Market Cap (M)	**$229**
	Tuesday, 13 April 2021

Profit & loss (A$M) 30 June	2025E	2026E	2027E	2028E
Sales Revenue	**265**	**530**	**530**	**571**
+ Other income/forwards	**0**	**0**	**0**	**0**
- Operating costs	-70	-143	-152	-144
- Royalties	-14	-29	-29	-30
- Corporate & administration	-4	-4	-4	-4
Total Costs	**-88**	**-176**	**-185**	**-178**
EBITDA	**177**	**354**	**345**	**393**
- margin	67%	67%	65%	69%
- D&A	-82	-120	-89	-81
EBIT	**96**	**234**	**256**	**312**
+ Finance Income/Expense	-25	-14	-4	-3
PBT	**71**	**220**	**252**	**309**
- Tax expense	-11	-33	-38	-46
- Impairments and other	0	0	0	0
NPAT	**60**	**187**	**214**	**263**

Cash flow (A$M)	2025E	2026E	2027E	2028E
+ Revenue	265	530	530	571
- Cash costs	-145	-294	-309	-296
-Tax payments	-3	-31	-37	-44
+ Interest & other	-25	-14	-4	-3
Operating activities	**93**	**190**	**181**	**228**
- Property, plant, mine devel.	-228	-12	-10	-55
- Exploration	-2	-2	-2	-2
- Feasibility Studies	0	0	0	0
Investment activities	**-230**	**-14**	**-12**	**-57**
+ Borrowings	240	0	0	0
- Dividends	0	0	0	0
+ Equity	0	0	0	0
Financing activities	**240**	**0**	**0**	**0**
Cash change	**103**	**177**	**168**	**171**

Balance sheet (A$M)	2025E	2026E	2027E	2028E
Cash	**149**	**325**	**494**	**665**
Other Current Assets	0	0	0	0
Total current assets	**149**	**325**	**494**	**665**
Property, plant & equip.	**337**	**229**	**149**	**123**
Investments/other	0	0	0	0
Total non-curr. assets	**337**	**229**	**149**	**123**
Total assets	**485**	**554**	**643**	**788**
Trade payables	36	39	40	44
Short term borrowings	267	133	0	0
Other	36	39	41	36
Total curr. liabilities	**72**	**78**	**81**	**80**
Long term borrowings	187	53	53	53
Other	0	0	0	0
Total non-curr. liabil.	**187**	**53**	**53**	**53**
Total liabilities	**259**	**131**	**135**	**134**
Net assets	**227**	**423**	**509**	**654**

Resources Feb 2021	Mt	Ni %	Cu %	Co ppm
Jaguar South (II)	18.7	0.97	0.05	206
Jaguar Central (II)	10.2	1.00	0.06	268
Jaguar North (II)	3.3	1.09	0.18	350
Jaguar Central North (I)	5.8	0.80	0.05	210
Jaguar North East (I)	8.3	0.78	0.09	253
Jaguar West (I)	5.7	0.80	0.04	150
Onca Preta (II)	3.3	1.58	0.09	558
Onca Rosa (I)	3.2	0.88	0.06	251
Total (II)	58.5	0.95	0.07	249

Financial ratios	2025E	2026E	2027E	2028E
GCFPS Diluted (A¢)	25	57	54	69
CFR (X)	3.2	1.2	1.3	1.0
EPS Diluted (A¢)	14	44	51	61
PER (X)	5.7	1.6	1.4	1.1
DPS ($)	0%	0%	0%	0%
Yield (%)	0%	0%	0%	0%
Interest cover (X)	4	16	73	117
ROCE (%)	23%	49%	46%	44%
ROE (%)	31%	52%	50%	47%
Avg Gearing (%)	154%	79%	15%	9%

Operations summary	2025E	2026E	2027E	2028E
Jaguar				
Ore processed (Mt)	1.3	2.5	2.5	2.5
Ni Head grade (%)	1.1	1.1	1.1	1.2
Met. Recovery (%)	85	85	85	85
Share of Ni in Final Product (t)	11688	23375	23375	24650
Share of Payable Ni (t)	11688	23375	23375	24650
Cost per milled tonne (US$/t)	57	59	62	59
AISC (US$/lb)	3.3	2.9	3.3	2.9
Growth capital ($M)	170.9	8.6	7.8	40.9

Price assumptions	2025E	2026E	2027E	2028E
AUDUSD	0.75	0.75	0.75	0.75
Nickel (US$/t)	16500	16500	16500	16500
Nickel (A$/t)	22000	22000	22000	22000

Jaguar Project Valuation	A$M	A$/sh
Jaguar Project NPV9 AUD	949	2.86
Risk Discount (Study Maturity -35% & Technical -20%)	-522	1.57
Jaguar Project NPV9 (Risk Discounted 55%)	427	1.29

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 (Risk Discounted 55%)	427	1.29
Jambreiro Project	10	0.03
Exploration, all sites	144	0.43
Corporate overheads	-18	-0.05
Cash and bullion	20	0.06
Current Debt	0	0.00
Tax benefit	0	0.00
Hedging	0	0.00
Option/equity dilution	-57	-0.17
Total	526	1.59

Directors, management	
Didier Murcia	Chairman
Darren Gordon	Managing Director / CEO
Bruno Scarpelli	Executive Director
Mark Hancock	Non-Executive Director
Chris Banasik	Non-Executive Director
Roger Fitzhardinge	Operation Manager
John Westdorp	Chief Financial Officer

Shares	2025E	2026E	2027E	2029E
New shs issued/exerciseable	0	0	0	0
Average issue price	0.00	0.00	0.00	0.00
Ordinary shares - end	422	422	422	422
Diluted shares - end	422	422	422	432

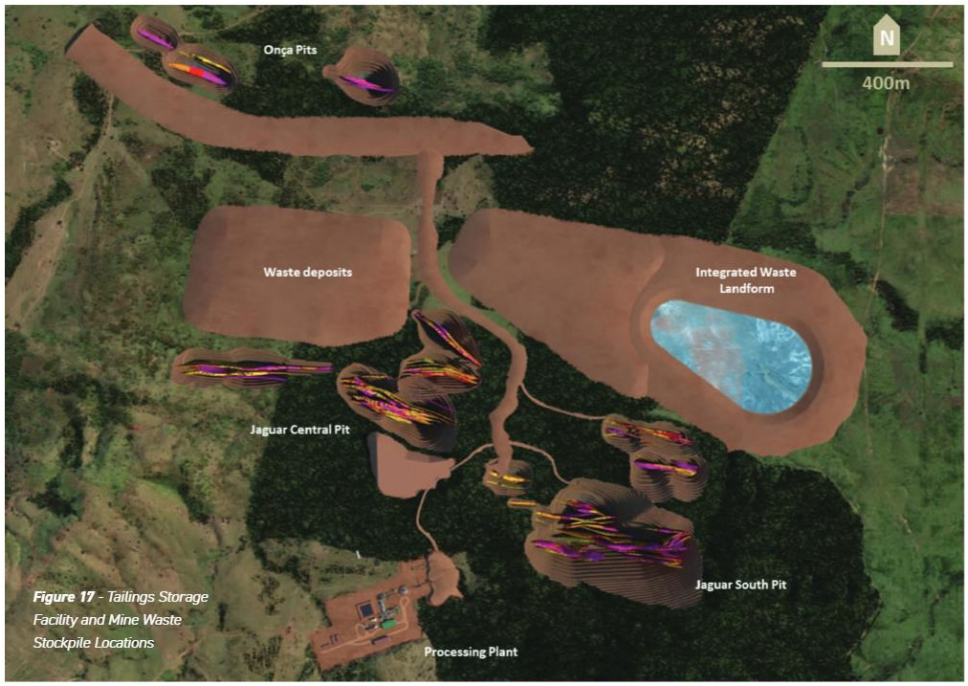
Base-case Scoping Study

CTM's newly released Base-case Scoping Study (BCSS) generates a post-tax NPV_8 of $604M (US$453M) over an initial 10-year mine life (CTM 29/03/2021)

The Study envisages mining 32.8Mt of ore from eight pits and two underground developments. Approximately 20.3Mt of high-grade or (>1.0% Ni) will be sent directly to the plant for processing, while 12.5Mt of ore grading ~0.4% Ni will be progressively sorted to generate ~3.8Mt of supplementary feed grading ~1.0% Ni. The combined total mill feed for the first 10 years will be 24 Mt @ ~1.1% Ni.

Design for base development meets our expectations

Figure 1: BCSS layout envisaging eight pits feeding a southerly located processing plant.



Source: CTM 29/03/2021

Open pit optimisations were generated with a US$12,450/t nickel price and have an average strip ratio of 6:1 over LOM. Mineral Resources were re-blocked to a Smallest Mining Unit (SMU) of 5x4x5m resulting in ore dilution of 25% and ore loss of 10% from the Jaguar deposits. The Onca group of deposits have a higher ore dilution (38%) and lower ore loss (6%) using the same assumed SMU.

High grade underground sourced ore will supplement productive open pits

Underground developments at the Jaguar South and Onca Preta deposits are scheduled to produce 3.2Mt at 1.36% Ni of ore from years four through ten. We expect underground mining will be expanded to other deposits as these are graduated to Indicated and Measured resource categories.

Under CTM's BCSS development scenario a conventional 2.7Mtpa flotation plant is proposed for processing. A front-end ore sorter will beneficiate low grade (0.4% Ni) material to supplement >1% Ni ROM. Crushed ore will be reduced to 75µm through a SAG mill, ball mill and pebble crusher grinding circuit prior to before being fed to flotation cells.

The plant has been optimised on metallurgical tests from the Onca and Jaguar suites of deposits. A combination of multielement assaying and mineralogical studies was completed on metallurgical composites for feed characterisation. The plant will be optimised to produce a sulphide concentrate grading 15.8% Ni, 0.9% Cu and 0.04% Co, generated with recoveries of 78%, 92% and 40% respectively.

Operational costs cheaper than expected and growth capital higher due to ongoing underground development

Pre-production capital expenditure is priced as US$178M with growth capital of US$138M over LOM. Sustaining/deferred capital includes progressive pit pre-strip and cut-backs, underground development, and improvements to tailings and waste storage facilities.

The Study defines a C1 Operating Cost of $45/t ore, equivalent to US$2.41/lb or US$5,318/t Ni. This incorporates a US$18/t ore cost for open pit and US$51/t ore cost for underground mining. Plant processing costs are modelled at US$11.3/t ore. CTM's modelled All-In Sustaining Cost (AISC) for the Base-Case scenario is $2.97/lb.

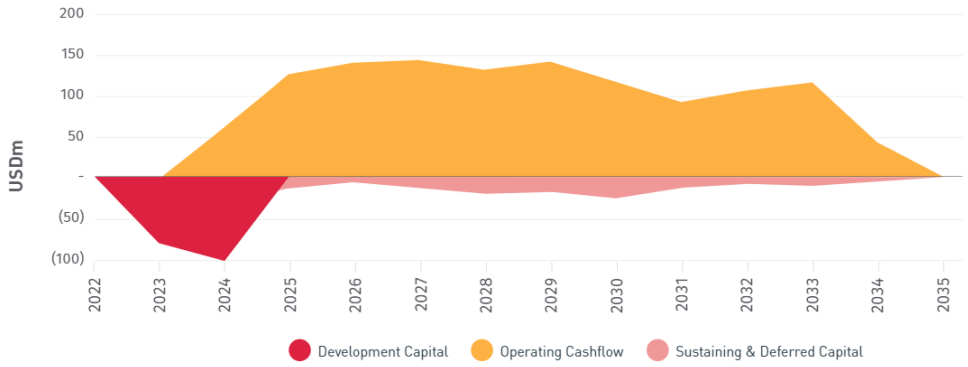
Other key financial modelling parameters include a US$16,530/t nickel price, 8% discount rate, 75% nickel payability and 0.75 AUD/USD exchange rate.

With these assumptions CTM models a Post-Tax NPV_8 outcome of A$604M with an IRR of 54% and capital payback within 1.9 years. Assuming nickel prices are sustained, CTM's project model generates strong positive cash flows following the end of Year 2 (Figure 2).

A robust project cashflow through life of mine with a capital payback of 1.9 years

CTM's valuation is most sensitive to nickel price fluctuations with a -10% shift resulting in $174M reduction in NPV.

Figure 2: Project cashflow for BCSS.



Source: CTM 29/03/2021

Our view on the study

This is an excellent outcome for the base-case and is in line with our prior expectations (see previous research).

BCSS development and sustaining capital costs are slightly higher than we had anticipated. We had expected mining to focus on only four deposits, however, plans for eight have been integrated. Underground development has been included in the study which will require ongoing capital expenditure through life of mine.

Integration of front-end ore sorting was not considered in our previous modelling and will enable beneficiation of waste diluted ore prior to processing.

Operational costs were generally lower than anticipated with both mining and processing costs lower than our assumptions. Even with increased sustaining capital the project AISC of US$2.97/lb is around 10% lower than our US$3.2/lb projected value.

Adopted nickel recoveries are slightly lower than our expected 78%. Final sulphide concentrate product metal content is consistent with our expectations. A slightly higher nickel payability is adopted, presumably indicative of a high-quality marketable concentrate. Concentrate characterisation assays were not published in this study and this is something that we will keep an eye out for in the future.

Macro assumptions in line with our own

CTM's NPV estimation is based on an 8% discount value, lower than our 9% assumption. In our own modelling a 1% change to discount rate has a ~$50M net effect on Post-tax NPV.

CTM's NPV_8 estimate of $604M is higher than our previous NPV_9 valuation of $458M (equivalent to NPV_8 $503M) (previous research). The differential between CTM's and our valuation is primarily driven by assumed operating costs. We trust that costs compiled for the Scoping Study by external consultants are more refined than our own assumptions.

Updated Project Valuation

We have updated the parameters and assumptions of our two development scenario valuations. Changes included additional CAPEX, reductions in mining and processing costs, tuning of grade and payability and provisions for underground mining.

Revisiting our project valuations

Our two project development scenarios remain:

Scenario 1: 'Base Case' operation with flotation concentrator producing a sulphide concentrate product

Scenario 2: 'Value Add' operation with flotation concentrator plus Pressure Oxidation (POX) and Solvent Extraction – Electrowinning (SX-EW) circuits producing pure metal cathode products

In both cases we have retained a 9% discount rate for NPV calculations to reflect jurisdictional risk.

We have applied a 35% risk discount modifier to both scenario valuations that account for uncertainty associated with the early stage of feasibility maturity. This value will be relaxed over time with graduation to Pre-Feasibility (25%) and Definitive Feasibility (15%) levels of study.

An additional 20% risk discount has been applied to the Scenario 2 valuation reflecting additional uncertainty of cost and technical viability of a POX with SX-EW setup.

Project valuation scenarios have been updated refined to reflect changes to the project scope including underground development

Table 1: Detailed discounted cash flow model assumptions for development of Jaguar with and without inclusion of POX circuit. All values in US dollars unless specified.

Timing		
Start Construction	2024	
Start/End Mining	2025/2035	
Initial Mine Life	10+ years	
Mining		
Open Pits	Jaguar Central, Jaguar South, Jaguar North, Jaguar West, Jaguar North-East, Onca Rosa, Onca Preta	
OP Ore Production (LOM)	29.6 Mt at 0.78% Ni	
Pit Design	Max pit depth 290m (Jaguar South)	
Pre-Strip tonnage (LOM)	8 Mt	
Strip Ratio (Excl PS)	LOM Average 6:1	
Mining Costs	~$2.5/t	
Distance from Mill	1-3km	
Underground	Onca Preta, Jaguar South	
Processing		
Scenario	**Scenario 1: Sulphide Concentrator Only**	**Scenario 2: Concentrator with POX Circuit**
Mill	2.7 Mt Capacity/2.5 Mt Throughput	
LOM Throughput	24 Mt at 1.08%	
Ni/Cu/Co Recovery	78%/92%/40%	86%/92%/94%
Ni/Cu/Co Conc grade	15.8%/0.9%/0.2%	10%/0.4%/0.2%
Processing Costs	$12/t	$25/t
Production Statistics		
Final Product/s	Ni-Cu-Co sulphide concentrate (~15.8% Ni)	Metal Cathode (100% Ni)
Ni in Product	~19-22kt	22kt-29kt
Product Transport	$131/t Concentrate ($787/t Ni Metal)	$131 /t Ni Cathode ($131/t Ni Metal)
Ni Payability	75%	100%
Payable Ni	16-21kt	23kt-29kt
Financial Factors		
Royalty Rate	5.6%	
Tax Rate	15%	
AUD/USD FX	0.75	
Ni Price Forecast	$16,500	
Discount Rate	9%	
Capital Expense		
Scenarios	**Scenario 1: Sulphide Concentrator Only**	**Scenario 2: Concentrator with POX Circuit**
Develop. Capex (Excl PS)	$178M	$308M
Pre-Strip (LOM)	$65M	$75M
UG Dev. (LOM)	$52M	$52M
Project Valuation		
Base 2021 NPV_9	A$483M	A$949M
Risk Discount Factors	Scoping Study Maturity -35% Total Discount = -A$169M	Scoping Study Maturity -35% Technical Risk -20% Total Discount = -A$522M
NPV_9 (Risk Discounted)	A$314M	A$427M

Source: Argonaut

Updated variables generate project NPV's slightly higher than our previous estimates

With updated assumptions our NPV$_9$ valuation for Scenario 1 (conventional flotation development) is $483M with a 35% risk discounted valuation of $314M. Our raw valuation for the Scenario 2 development option (inclusion of POX & SX-EW) is $949M and discounted by a factor of 55% to $427M. Note that these outcomes are slightly better than our previous estimates (previous research).

Nickel's future is electric

Long term demand for nickel has risen an average of ~4.5% year-on-year since 1955 with consumption peaking in 2020 at 2.5 million tonnes. Stainless steel and alloy production remain nickel's primary end use applications (~95%), with Electric Vehicle (EV) batteries currently consuming just ~143,000 tonnes per annum (5.7%).

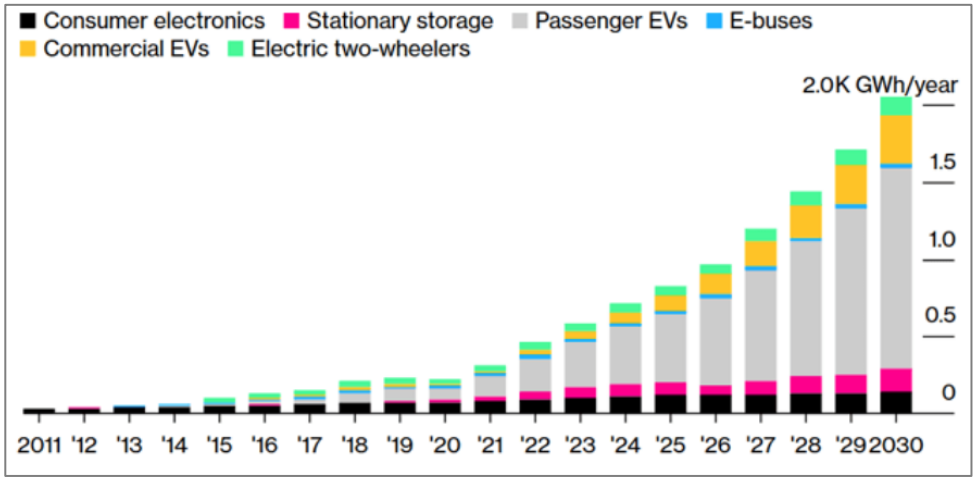
Nickel's future growth is expected to be supercharged by the emerging EV industry

The emerging EV industry remains relatively dynamic with manufacturers continuing to seek best performance solutions in a rapidly evolving technology environment. During the past decade competing battery technologies have jostled for market leadership. Lithium-based cells appear to have arisen the victor, at least for the moment. Across the globe, EV and electronics companies are investing in the development of large scale 'gigafactory' battery plants at a cost of between $2-5 billion per facility. New factories are being configured specifically for lithium-ion batteries and would be expensive to retool, should a change in technology be required. At least for the moment lithium-ion appear to be solidifying themselves as the incumbent for EV and stationary applications.

Lithium-ion battery demand is expected to double by 2024, doubling again by 2029 (Figure 3). This growth is projected to flow through to battery related metals markets, resulting in increased demand for nickel, copper, lithium and cobalt.

Nickel cathodes are a common component of lithium-ion batteries. Several cathode chemistries are utilised with various ratios of nickel, cobalt, manganese and/or aluminium (eg. NCA, NMC 111, NMC 622, NMC 811 & NMC 9.5.5).

Figure 3: Projected demand of lithium-ion batteries



Source: Bloomberg

Nickel batteries come in various flavours and are used in some of the world's most popular EVs

Each Tesla Model 3 and BMW iX3 Electric Vehicle (EV) is equipped with either an NCA (Nickel-Cobalt-Aluminium) or NMC (Nickel-Manganese-Cobalt) cathode battery pack. Each pack contains approximately 50kg of nickel valued at US$825 (US$16,500/t Ni). NMC-811 batteries contain 80% nickel and require approximately 690g of nickel per kWh of storage. This cathode mix is steadily becoming the favoured configuration of both EV and stationary storage manufacturers. In 2020 LG Chem and SK Innovation both initiated production of NMC-811 battery cells at their respective battery 'gigafactories'.

Nickel suppliers will need to meet demand at reasonable prices or risk substitution by competing technology

While non nickel-based cathode battery technologies are in use, these generally fail to compete in EV applications due to trade-offs in cost and mass/volumetric energy density. Tesla is currently deploying cheaper LFP (Lithium-Iron-Phosphate) battery packs into the Chinese market. However, these vehicles have been troubled by slower charge times, restrictive operational range, and poor performance in cold weather. Assuming prices for nickel and other inputs remain palatable to OEMs, we expect nickel cathode batteries to remain the preferred electricity storage technology for most mobile applications over the medium to long term. However, for this to remain the case, it is vital the mining industry meets nickel demand with maintenance of reasonable pricing. Failure to do so would encourage substitution by alternate battery technologies such as LFP. For long term market sustainability, nickel pricing needs to settle at a level acceptable to EV manufacturers, whilst also rewarding mining companies for their risk in exploration and development.

Battery driven demand will stack on top of the traditional 4.5% year-on-year stainless steel – alloy growth

We expect growth in the nickel metal market to accelerate in the medium term as rapidly rising demand from the EV market segment stacks above the traditional 4.5% stainless steel - alloy consumption growth trend.

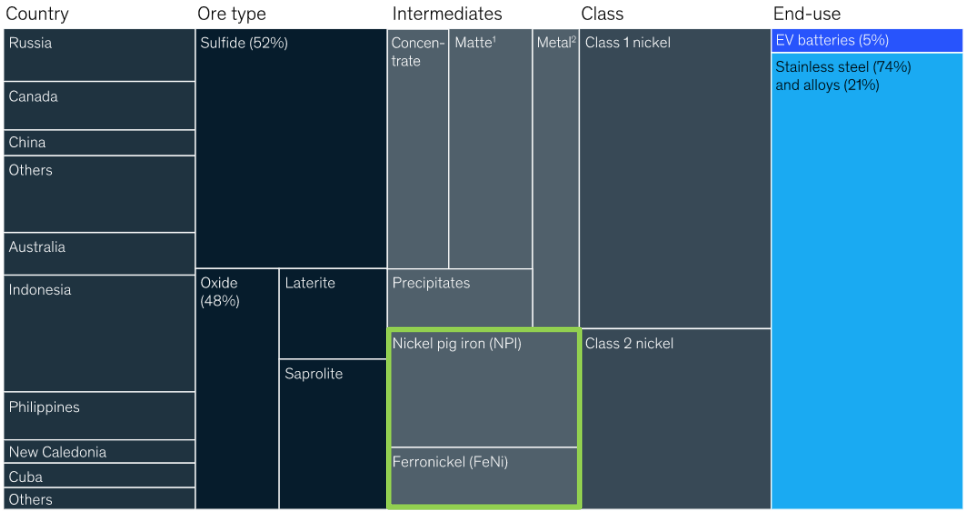
Recent disruption in the nickel market

Due to purity requirements, nickel cathode precursor materials are generally created from high quality 'Class 1' nickel intermediate products, produced from sulphide ores (Figure 4). Oxide ores (laterite and saprolite) have typically been viewed as unsuitable for production of cathode precursors due to the prohibitive processing cost of purifying high iron content 'Class 2' intermediate products; nickel pig iron (4-13% Ni) and ferronickel (~35% Ni). Exceptions to this do exist such as PT Vale's Sorowako operation in Indonesia which produces 78% nickel matte directly from laterite using pyrometallurgical processing.

NPI-Matte conversion a potential supply-side disrupter of the market

In March 2021, leading stainless-steel manufacturer Tsingshan announced it would supply two Chinese battery producers with 100,000 tonnes (total) of purified nickel matte (>75% Ni) upgraded from nickel pig iron (NPI). This deal was specifically targeted at using nickel matte for production of battery cathode precursor nickel sulphate. The announcement caught the market by surprise, as it is the first time an NPI producer has upgraded product to a purity suitable for nickel cathode production.

Figure 4: 2019 Nickel supply chain with Class 2 intermediate products highlighted.



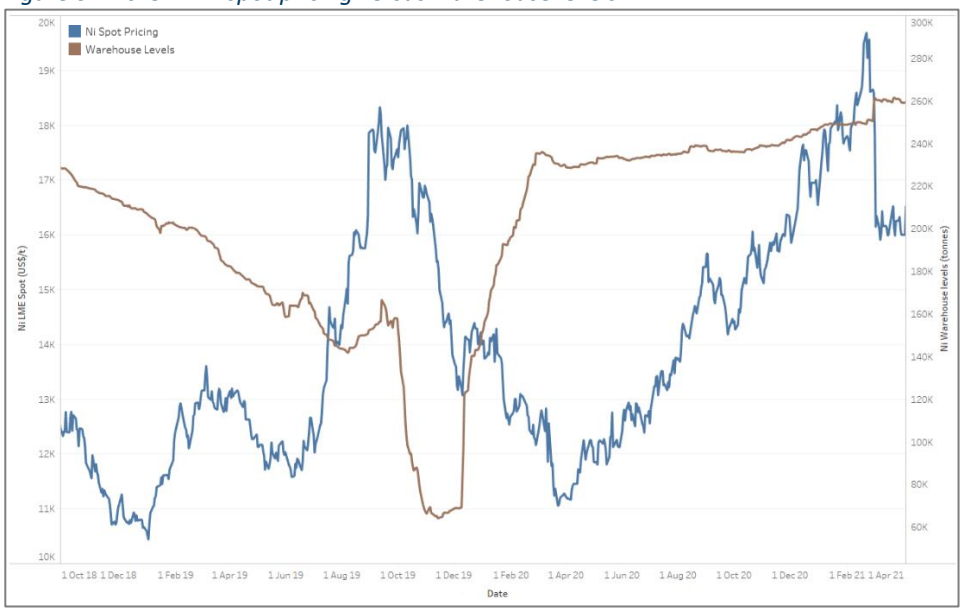
Source: McKinsey and Co 2020

Nickel prices responded with a sharp sell-off from ~US$19,560 to US$15,907/t. Prices have since plateaued above US$16,000 and appear to be strongly supported at this level. While Tsingshan's NPI to Matte process may be technically feasible, the question of financial cost remains unanswered. If NPI-Matte conversion costs are high, production through this pathway may only be viable in a generous nickel pricing environment. Perhaps nickel price support above US$16,000/t represents the market's best guess of NPI to Matte conversion economic viability?

Nickel prices have taken a hit, but NPI-Matte conversion is probably a good thing for long term EV driven market growth

While this news may put a lid on short term nickel pricing upside, we think surety of supply will calm the nerves of industrial consumers who fear potential nickel shortages. Increased confidence in the nickel cathode supply chain will encourage further capital investment in nickel-based battery production and result in wider market adoption. We think this news is a net benefit for the long-term outlook for nickel and producers.

Figure 5: Nickel LME spot pricing versus warehouse levels



Source: Argonaut

Green is good

Life is easier being green

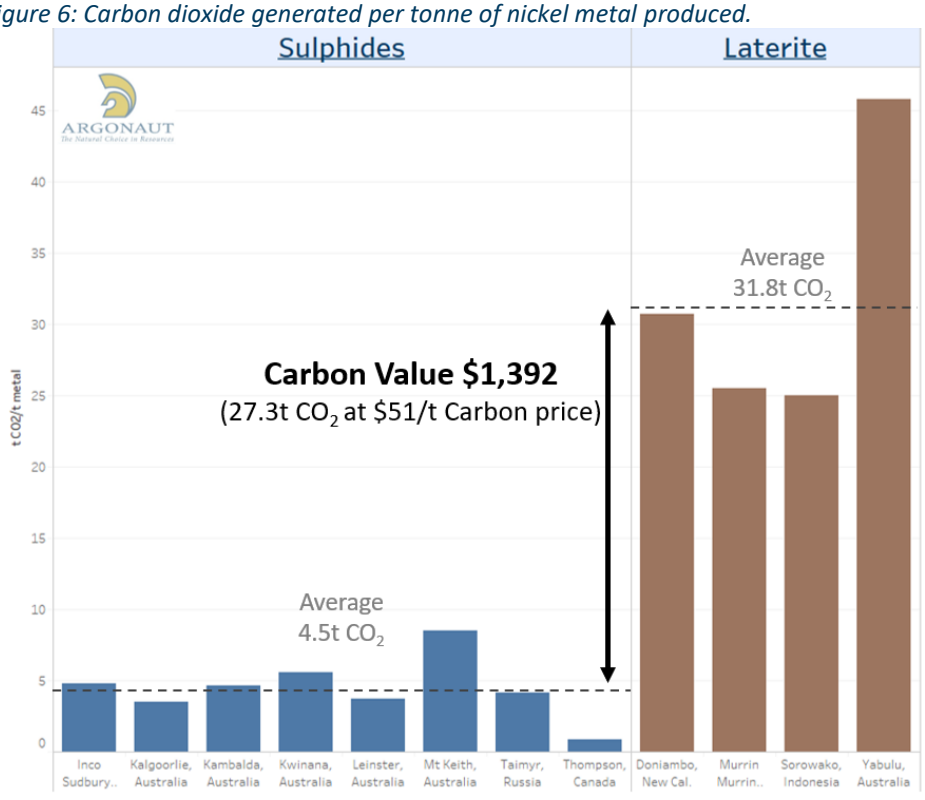
The importance of responsible corporate governance and accounting the triple bottom line continues to gain importance in equity markets. Investment funds are increasingly placing more weight upon a company's ESG performance when deliberating an investment decision. In 2020 ESG focussed funds attracted $51.1 billion in new member investments, up from $21 billion in 2019. Life is certainly easier being green. Adding to this momentum was the March announcement by US president Joe Biden of a US$51/t 'cost of carbon' for released CO_2 gas emissions in the US. We believe low carbon metal producers will be increasingly sought out and rewarded through investment by ESG focussed sources of funding.

Laterite based nickel production is energy intensive and comes at a high carbon cost compared with sulphide

Considering the development of the EV industry has been staged against the backdrop of a greener energy future, we expect EV manufacturers to attract additional scrutiny in their maintenance of low carbon footprint.

Comparing classes of nickel metal producers based on ore type, there is a large gap between the volume of greenhouse gas generated from sulphide versus laterite sources. A 2008 academic study examined this issue, identifying laterite producers generated an average of 31.8t CO_2 per tonne of nickel, versus sulphide producers who emitted only 4.5t CO_2 per tonne of nickel (Figure 6). Applying recently Biden's proposed $51/t cost of carbon to the 27.3t of CO_2 average CO_2 emission difference between sulphide and laterite allows us to financially quantify the differential as US$1,392 per tonne of nickel.

Figure 6: Carbon dioxide generated per tonne of nickel metal produced.



Source: Argonaut with data compiled from Jessup & Mudd (2008)

CTM well positioned to become a green nickel market leader

Jaguar is a sulphide project with a naturally low carbon emission footprint. Carbon emissions will be further minimised by utilisation of predominantly renewable energy sources for powering of the processing plant and infrastructure. We expect Jaguar's nickel production to be rated as some of the cleanest in the world and think CTM will become a highly attractive investment opportunity for ESG focussed funds and/or OEMs.

Company valuation

We have estimated CTM's company valuation based on the simple average of two development scenarios with a mix of debt and equity funding.

Company valuations slightly up on our previous estimates

Based on Scenario 1 we have determined an implied CTM value of A$343M or A$1.03ps and for Scenario 2 we value CTM at A$526M or A$1.59ps. To provide a single figure, we have derived a simple average of the two valuations being A$435M, equivalent to A$1.31ps.

Figure 7: CTM valuation based on 'conventional' development (Scenario 1).

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 (Risk Discounted 35%)	314	0.95
Jambreiro Project	10	0.03
Exploration, all sites	74	0.22
Corporate overheads	-18	-0.05
Cash and bullion	20	0.06
Current Debt	0	0.00
Tax benefit	0	0.00
Hedging	0	0.00
Option/equity dilution	-57	-0.17
Total	343	1.03

Source: Argonaut

Figure 8: CTM valuation based on 'value add' development (Scenario 2).

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 (Risk Discounted 55%)	427	1.29
Jambreiro Project	10	0.03
Exploration, all sites	144	0.43
Corporate overheads	-18	-0.05
Cash and bullion	20	0.06
Current Debt	0	0.00
Tax benefit	0	0.00
Hedging	0	0.00
Option/equity dilution	-57	-0.17
Total	526	1.59

Source: Argonaut

Key Risks to valuation

POX Circuit Capital Costs

For the purposes of this report capital costs for the Pressure Oxidation (POX) circuit scenario and associated accessory infrastructure have been estimated by Argonaut at approximately US$115M. This is based on costs for other POX operations but there are few good analogues.

Mineable inventory

Argonaut has completed in-house resource evaluations and estimates based upon incomplete drill hole information available to the market through public company announcements. Grade variability within and external to reported significant intercepts remain largely undefined and may influence the bulk tonnage grade of assumed mineable inventories. Modelled mineable grade-tonnage inventories are based upon technical speculation rather than formal pit optimisation studies.

Metallurgical performance

Provisional metallurgical testing has been completed upon a limited set of samples and is unlikely to accurately represent true future performance. Additional test-work is required to de-risk economic extraction of metals from project ore.

Marketable product quality

Mineralisation at the Jaguar prospect is considered atypical to common magmatic nickel sulphide deposits. Sulphide concentrate characterisation results released to date have not indicated issues with deleterious abundances. An academic study completed during Vale's custodianship did identify a positive correlation between nickel and fluorine abundance associated with accessory fluorapatite. We are uncertain if this will affect sulphide concentrate payability. Incorporation of a POX circuit with sulphate product output should eliminate this risk.

Commodity Pricing

Value estimates are based on consensus long term commodity price forecasts. A US$1,000 difference to the price of nickel over the modelled life of mine will result in a ~15-18% shift in project valuation.

Costs

Cost assumptions are based on incomplete information or informal estimates. Operating and capital costs assumptions rely on our knowledge of industry rates or those provided by CTM studies.

Exploration success

Valuation assumes that future exploration and investments achieve acceptable returns. Subjective value is attributed to exploration assets at Jaguar.

Interest rates/discount rates

Argonaut takes cash flow risk into account when choosing discount rates for different projects. Our valuation is sensitive to the discount rate used. A 1.0% change to the discount rate shifts project values by approximately 9%.

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