ARGONAUT
The Natural Choice in Resources

EQUITY RESEARCH

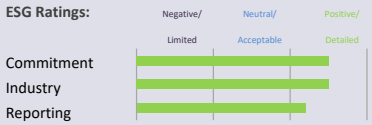
Financial Advisers | Stockbroking & Research | Special Situations Financing
www.argonaut.com +61 8 9224 6888

SPEC BUY

Current Price	$0.77
Valuation	$1.95

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

ESG Ratings:



* All figures in AUD unless stated otherwise

Shares on Issue (M):	**427**
- fully diluted (M)	**439**
Market Cap ($M):	**329**
- fully diluted ($M)	**338**
Net cash ($M):	**23**
Enterprise value ($M):	466
EV/Resource Ni Tonnes	A$638/t
52 wk High/Low (ps):	**$0.82** **$1.53**
12m av. daily vol. (Mshs):	**0.8**

Key Metrics:

	FY27e	FY28e	FY29e
P/E (x)	1,811.6	4.5	3.7
EV/EBITDA (x)	12.4	8.9	6.5

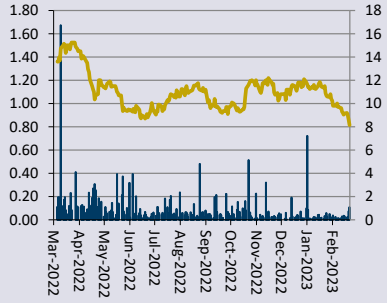
Financials:

	FY27e	FY28e	FY29e
Revenue ($M)	86	483	563
EBIT ($M)	23	222	262
NPAT (A$M)	0	171	209
Net assets ($M)	203	254	364
Op CF ($M)	4	180	205

Per share data:

EPS (c)	0.0	17.0	20.8
Dividend (cps)	0.0	0.0	0.0
Yield (%)	-	-	-
CF/Share (cps)	1.0	42.0	48.0
Prod (kt Ni)	3,222	18,049	21,060

Share Price Graph and trading volumes (msh)



Please refer to ESG comments from page 12 and important disclosures from page 14

Wednesday, 14 June 2023

Centaurus Metals (CTM)

Brazilian Comparisons

Analyst | George Ross

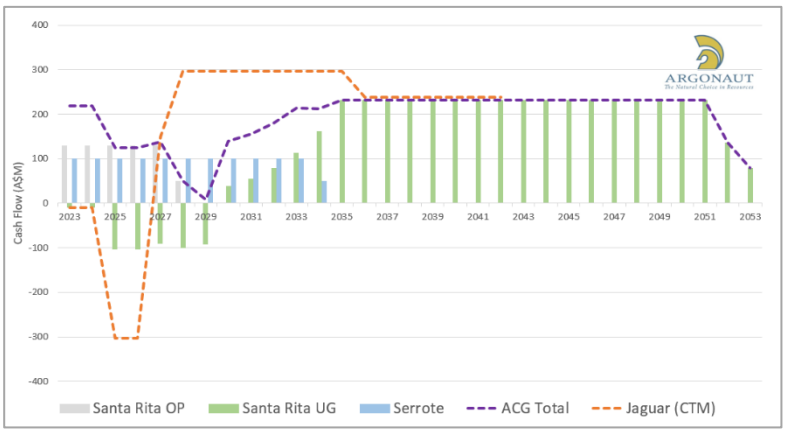
Quick Read

Earlier this week Appian Capital Advisory announced it would sell two of its Brazilian base metals companies (Atlantic Nickel and Mineração Vale Verde) to London listed SPAC, ACG Acquisition Company in a deal valued at US$1.06B. Major assets included as part of the sale are the Santa Rita Ni-Cu-Co and Serrote Cu-Au mines. We follow-up our recent Cat Amongst the Pigeons Centaurus Metals (CTM) comparative research with new information comparing Jaguar to these assets.

Key Points

- Santa Rita has ~6 years of open pit mine life remaining, after which time the operation will transition to 28+ year sub level caving operation. Serrote has remaining Reserves for 12 years of production.
- Jaguar project ore again shines on a value per tonne basis compared with its peers.
- On our numbers, Jaguar's NPAT cash flows during the first 10 years of mine life will exceed that of ACG's combined operations.
- Using our metal price deck we estimate ACG's projects have mineable Reserves/Inventories valued at US$13B versus CTM's US$7.7B for Jaguar.
- Our unoptimized cashflow model (including capital requirements) for ACG's combined operations estimates a present day NPV_7 of A$2.2B (US$1.5B) vs A$1.4B (US$1.0B) for Jaguar.
- The ACG-Appian deal transactional EV of US$1.06B implies an EV/NPV_7 ratio of 0.71x. Applying this ratio to Jaguar's simplified NPV of US$1.0B resolves an equivalent CTM EV of US$0.71B (A$1.07B). CTM's current market capitalisation is A$330M and EV is ~A$309M.

Figure 1: Simplified cashflow models for ACG's assets and CTM's Jaguar development.



Source: Argonaut

Recommendation

We maintain our Speculative Buy recommendation and valuation of A$1.95 per share.

Centaurus Metals (CTM)

Equities Research

Analyst: George Ross

Recommendation	**Speculative Buy**
Current Price	**$0.77**
Valuation	**$1.95**

Sector	**Metals & Mining**
Issued Capital (Mshs)	**427**
Market Cap (M)	**$ 329**

Wednesday, 14 June 2023

Profit & loss (A$M) 30 June	Unit	2026E	2027E	2028E	2029E
Sales Revenue	**A$M**	**0**	**86**	**483**	**563**
+ Other income/forwards	A$M	**0**	**0**	**0**	**0**
- Operating costs	A$M	-4	-29	-144	-172
- Royalties	A$M	0	-4	-22	-26
- Corporate & administration	A$M	-16	-16	-16	-16
Total Costs	**A$M**	**-20**	**-49**	**-182**	**-214**
EBITDA	**A$M**	**-20**	**38**	**300**	**350**
- margin		0%	44%	62%	62%
- D&A	A$M	0	-14	-78	-88
EBIT	**A$M**	**-20**	**23**	**222**	**262**
+ Finance Income/Expense	A$M	-9	-16	-11	-5
PBT	**A$M**	**-29**	**7**	**212**	**257**
- Tax expense	A$M	0	-7	-41	-48
- Impairments and other	A$M	0	0	0	0
NPAT	**A$M**	**-29**	**0**	**171**	**209**

Cash flow (A$M)	Unit	2026E	2027E	2028E	2029E
+ Revenue	A$M	0	86	483	563
- Cash costs	A$M	-22	-64	-260	-305
-Tax payments		0	-2	-33	-48
+ Interest & other	A$M	-9	-16	-11	-5
Operating activities	**A$M**	**-31**	**4**	**180**	**205**
- Property, plant, mine devel.	A$M	-488	-30	-6	-42
- Exploration	A$M	-2	-2	-2	-2
- Feasibility Studies		0	0	0	0
Investment activities	**A$M**	**-490**	**-32**	**-8**	**-44**
+ Borrowings	A$M	257	-57	-114	-114
- Dividends	A$M	0	0	0	0
+ Equity	A$M	0	0	0	0
Financing activities	**A$M**	**257**	**-57**	**-114**	**-114**
Cash change	**A$M**	**-264**	**-85**	**57**	**47**

Balance sheet (A$M)	Unit	2026E	2027E	2028E	2029E
Cash	**A$M**	**98**	**13**	**71**	**118**
Other Current Assets	A$M	0	0	0	0
Total current assets	**A$M**	**98**	**13**	**71**	**118**
Property, plant & equip.	A$M	**488**	**504**	**432**	**386**
Investments/other	A$M	0	0	0	0
Total non-curr. assets	**A$M**	**488**	**504**	**432**	**386**
Total assets	**A$M**	**586**	**517**	**502**	**503**
Trade payables	A$M	64	11	38	41
Short term borrowings	A$M	57	114	114	57
Other	A$M	64	18	39	41
Total curr. liabilities	**A$M**	**185**	**143**	**191**	**140**
Long term borrowings	A$M	286	171	57	0
Other	A$M	0	0	0	0
Total non-curr. liabil.	**A$M**	**286**	**171**	**57**	**0**
Total liabilities	**A$M**	**471**	**314**	**248**	**140**
Net assets	**A$M**	**115**	**203**	**254**	**364**

Resource	Mt	Ni %	Ni Kt
Jaguar South (II)	34.6	0.92	317
Jaguar Central (II)	12.5	0.81	100
Jaguar North (II)	3.2	1.15	37
Jaguar Central North(II)	14.2	0.62	88
Jaguar North East (I)	16.8	0.75	126
Jaguar West (II)	8.7	0.72	63
Onca Preta (II)	14.2	1.23	174
Onca Rosa (I)	1.9	0.98	19
Tigre (II)	2.00	0.77	15
Total Global MRE	**108.1**	**0.87**	**939**

Financial ratios	2027E	2028E	2029E	2030E
GCFPS Diluted (A¢)	1	42	48	48
CFR (X)	76.6	1.8	1.6	1.6
EPS Diluted (A¢)	0	17	21	22
PER (X)	1811.6	4.5	3.7	3.6
DPS ($)	0%	0%	0%	0%
Yield (%)	0%	0%	0%	0%
Interest cover (X)	1	21	52	745
ROCE (%)	6%	71%	72%	55%
ROE (%)	4%	83%	71%	55%
Avg Gearing (%)	170%	97%	33%	2%

Jaguar Operations summary	2027E	2028E	2029E	2030E
Ore processed (Mt)	0.4	2.3	2.7	2.7
Ni Head grade after ore sorting (%)	1.10	1.04	1.00	0.77
Met. Recovery (%)	78%	78%	78%	78%
Share of Ni in Final Product (t)	3222	18049	21060	21060
Cost per milled tonne (US$/t)	74	67	68	70
Cash costs pre royalty (US$/t)	8891	8595	8757	8935
C1 Costs (US$/lb)	4.3	3.9	4.0	3.9
AISC (US$/lb)	4.6	4.5	4.8	4.4

Price assumptions	2027E	2028E	2029E	2030E
AUDUSD	0.700	0.700	0.700	0.700
Nickel (US$/t)	17500	17500	17500	17500
Nickel (US$/lb)	7.94	7.94	7.94	7.94
Nickel (A$/t)	25000	25000	25000	25000

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 AUD	1258	2.94
Risk Discount (Study Maturity 25%)	-314	-0.74
Jambreiro Project	40	0.09
Exploration, all sites	195	0.46
Corporate overheads	-158	-0.37
Cash & Equivalents	23	0.05
Debt	0	0.00
Option/equity dilution	-209	-0.49
Total	834	1.95

^ Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation

Directors, management	
Didier Murcia	Chairman
Darren Gordon	Managing Director / CEO
Bruno Scarpelli	Executive Director
Mark Hancock	Non-Executive Director
Chris Banasik	Non-Executive Director
Natalia Streltsova	Non-Executive Director
Roger Fitzhardinge	GM - Exploration & Growth
Wayne Foote	GM - Operations
John Westdorp	Chief Financial Officer

Top shareholders	M shs	%
McCusker Holdings Pty Ltd	56	13
Sprott Inc.	39	9
Regal	27	6
Harmanis	22	5
Dundee Corporation	23	5
Management	17	4

Shares	2024E	2025E	2027E	2029E
New shs issued/exerciseable	64	186	0	0
Average issue price	0.8	1.3	0.0	0.0
Ordinary shares - end	623	995	995	995
Diluted shares - end	629	995	995	995

Comparison Statistics and Economics

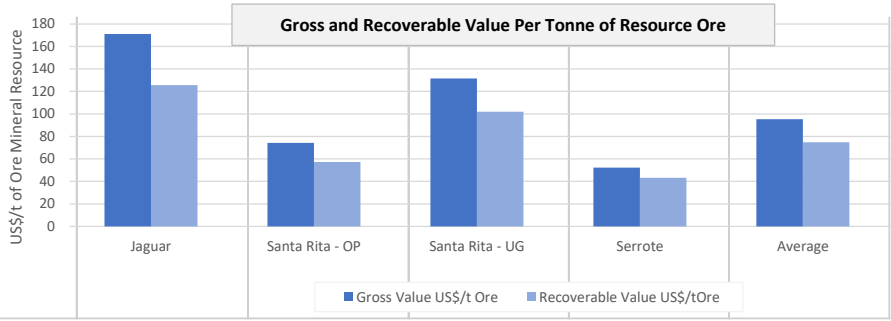
Metal prices used for this comparison are based on Argonaut's standard figures

Table 1: Base case metal price assumptions.

Metal	Base
Ni US$/t	17500
Cu US$/t	8000
Co US$/t	40000
Zn US$/t	2500
3E PGM US$/oz	1698
Au US$/oz	1800
Pt US$/oz	1200
Pd US$/oz	1800

Figure 2: Mineral Resource stats and recovery assumptions.

Owner Name	Centaurus Metals	ACG Electric Metals			*Combined Total/Average*
ASX Company Code	CTM	Pre-IPO	Pre-IPO	Pre-IPO	
Project	**Jaguar**	**Santa Rita - OP**	**Santa Rita - UG**	**Serrote**	
Development Scenario	2.7Mtpa POX Sulph	Open Pit	Underground	Open Pit	
Development Stage	Scoping, DFS 2023	Operating	Planned	Operating	
Resource Type	**MI&I**	**MI&I**	**MI&I**	**MI&I**	
Tonnage (Mt)	108	34.8	141.7	101.6	*278*
Ni % Grade	0.87	0.31	0.56	0	
Cu % Grade	0.06	0.11	0.19	0.54	
Co % Grade	0.0269	0.01	0.02	0	
Zn % Grade	0.32	0	0	0	
3E g/t Grade	0	0.13	0.19	0	
Au g/t Grade	0	0	0	0.1	
Metal Recovery (Source)	MRE/Release	MRE/Release	MRE/Release	MRE/Release	
Ni %	75%	83%	83%	0%	
Cu %	70%	80%	80%	85%	
Co %	55%	40%	40%	0%	
Zn %	70%	0%	0%	0%	
3E g/t	0%	50%	50%	0%	
Au g/t	0%	0%	0%	65%	
Gross Value of MRE (US$B)	**19**	**3**	**19**	**23**	***44***
Recoverable Value of (MRE US$B)	**14**	**2**	**14**	**4**	***20***
Gross Value US$/t Ore	171	74	132	52	*95*
Recoverable Value US$/tOre	126	57	102	43	*75*



Source: Argonaut from company reports

Figure 3: Comparison of development project key assumptions. Please note that ACG payabilities are back calculated from published payability data with corrections for treatment, refining, deleterious element penalties and other smelter associated costs.

ARGONAUT The Natural Choice in Resources		ACG			
Owner Name	Centaurus Metals	ACG Electric Metals			
ASX Company Code	CTM	Pre-IPO	Pre-IPO	Pre-IPO	
Project	**Jaguar**	**Santa Rita**	**Santa Rita**	**Serrote**	***Combined***
Location	Carajas, Brazil	Brazil	Brazil	Brazil	
Development Stage	Scoping, DFS 2023	Operating	Planned	Operating	
Estimated Build Start /FID Date	CY2024		CY2026		
Dominant Payable Metals	Ni-Cu-Co-Zn	Ni-Cu-Co	Ni-Cu-Co	Cu-Au	
Development Scenario	**2.7Mtpa POX Sulph**	**Current OP**	**SL Caving**	**Open Pit**	
Initial Capital Expenditure [excl-prestrip] A$M	607	0	596	0	
Operational Mine Life (Years)	16	7	28	12	
Ore Tonnes Processed (Mtpa)	2.7	6.5	6.5	4.1	
Global Mining Strip Ratio [inc Pre-strip]	11.5	2.8	0	1.7	
Reserve / Inventory	*Inventory*	*Reserve*	*Reserve*	*Reserve*	
Tonnage (Mt)	60	35	134	47	
Ni%	0.85	0.31	0.56	0.00	
Cu%	0.06	0.11	0.19	0.58	
Co%	0.03	0.01	0.02	0.00	
Zn%	0.30	0.00	0.00	0.00	
3Eg/t	0.00	0.13	0.19	0.00	
Aug/t	0.00	0.00	0.00	0.10	
Metal Product	*SS/Announce*	*Study*	*Study*	*Study*	
Nickel	Sulphate	Concentrate	Concentrate	-	
Copper	Unvalued	Concentrate	Concentrate	Concentrate	
Cobalt	Hydroxide	Concentrate	Concentrate	-	
Zinc	Hydroxide	-	-	-	
3E-PGM	-	Concentrate	Concentrate	-	
Gold	-	-	-	Concentrate	
Metal Product Payability Assumption	Study	*Calculated*	*Calculated*	*Calculated*	
Nickel (%)	107%	75%	75%	0%	
Copper (%)	0%	60%	60%	97%	
Cobalt (%)	90%	40%	40%	0%	
Zinc (%)	90%	0%	0%	0%	
3E-PGM (g/t)	0%	60%	60%	0%	
Gold (g/t)	0%	0%	0%	93%	
Payable Metal Produced Per Annum					
Ni (kt)	23.3	12.5	22.7	0.0	
Cu (kt)	0.0	3.4	5.9	19.6	
Co (kt)	0.4	0.1	0.2	0.0	
Zn (kt)	6.4	0.0	0.0	0.0	
3E PGM (koz)	0.0	8.2	11.9	0.0	
Au (koz)	0.0	0.0	0.0	8.0	
Gross Value of Inventory US$B	**10.3**	**2.6**	**17.6**	**2.4**	***22.7***
Recoverable Value of Inventory US$B	**7.5**	**2.0**	**13.7**	**2.0**	***17.7***
Payable Value of Inventory US$B	**7.7**	**1.4**	**9.7**	**1.8**	***13.0***

Source: Argonaut from company reports

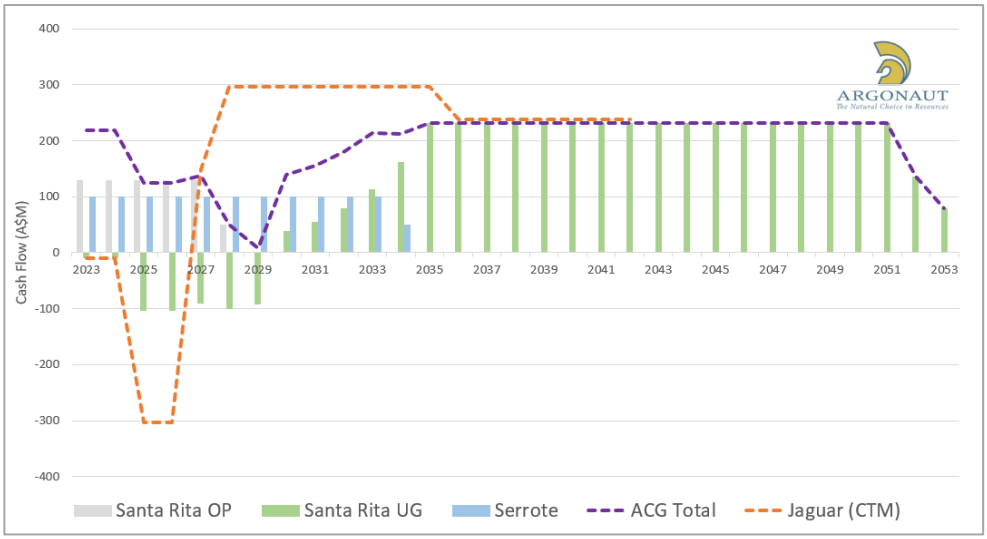
Figure 4: Comparison of Jaguar versus ACG assets.

	Centaurus Metals	ACG Electric Metals				
Project	Jaguar	Santa Rita - OP	Santa Rita - UG	Serrote	Combined Assets	
Gross Value of Inventory US$B	10.3	2.6	17.6	2.4	**22.7**	
Recoverable Value of Inventory US$B	7.5	2.0	13.7	2.0	**17.7**	
Payable Value of Inventory US$B	7.7	1.4	9.7	1.8	**13.0**	
Development Scenario	2.7Mtpa POX Sulph	Current OP	SL Caving	Open Pit		
Development Status	Planned	Operating	Planned	Operating		
Ramp Up Period (Years)	2	NA	7	NA		
Mine Life (Years)	16	7	28	12		
Estimated Build Start /FID Date	2024	NA	2026	NA		
Current Closure Based on Reserves	2042	2028	2053	2034		
	Operation Economics (Australian Dollars)					
					SR OP + Serrote	SR UG + Serrote
Initial Capex (A$M)	607	0	596	0	0	596
Avg Revenues (A$M)	628	379	675	245	623	920
Avg Annual AISC (A$M)	385	232	323	148	380	471
Avg EBITDA (A$ M)	342	151	345	117	269	463
Avg Annual NPAT (A$M) - Early Discount Period	269	129	281	100	228	381
Discounted to Year	(to 2036)	(to 2030)	(to 2030)	(to 2033)		
Avg Annual NPAT (A$M) - After Discount Expiry	209	106	231	77	183	309
Unoptimized Present Day NPV(7) A$M	**1403**	**562**	**878**	**769**	**2210**	
	Operation Economics (US Dollars)					
AUD:USD Exchange Rate	0.7	0.7	0.7	0.7	0.7	0.7
Initial Capex (US$M)	425	0	417	0	0	417
Avg Revenues (US$M)	440	265	473	171	436	644
Avg Annual AISC (US$M)	270	163	226	104	266	330
Avg EBITDA (US$ M)	239	106	242	82	188	324
Avg Annual NPAT (US$M) - Early Discount Period	188	90	197	70	160	266
Discounted to Year	(to 2036)	(to 2030)	(to 2030)	(to 2033)		
Avg Annual NPAT (US$M) - After Discount Expiry	146	74	162	54	128	216
Unoptimized Present Day NPV(7) US$M	**982**	**394**	**615**	**539**	**1547**	

Source: Argonaut from company reports

Using our model assumptions cashflows from Jaguar actually exceed ACG group cashflows although Santa Rita's mine life extends to 2053

Figure 5: Unoptimized cashflows for ACG (Santa Rita & Serrote) versus CTM' Jaguar.



Source: Argonaut from company reports

Centaurus Valuation

Our model includes extraction of 60Mt of ore grading 0.80% Ni plus by-products from an open pit only operation. Our pit model assumes a post-strip ore to waste strip ratio of 1:8.8

We model a 24-month development period starting construction in Q1 CY2025 with commissioning beginning late 2026 and commercial production ramp up from Q1 2027.

Table 2: CTM company level net asset valuation.

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 AUD	1258	2.94
Risk Discount (Study Maturity 25%)	-314	-0.74
Jambreiro Project	40	0.09
Exploration, all sites	195	0.46
Corporate overheads	-158	-0.37
Cash & Equivalents	23	0.05
Debt	0	0.00
Option/equity dilution	-209	-0.49
Total	834	1.95

^ Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation

Source: Argonaut

We assume US$440M in initial capital expenditure including pre-strip. We have increased our underlying operation cost variables to accommodate inflation. Our model generates an average life-of-mine AISC of US$5.2/lb of payable nickel throughout life of mine. We maintain our 107% metal payability for a nickel sulphate product. We use a static long term nickel price of $17,500/t.

We assume project funding will be provided through a ~60:40 debt:equity mix. Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation. We assign a A$40M value to the Jambreiro Iron Ore Project.

We estimate an optimised present day NPV9 of A$1,258M for the Jaguar Project, equivalent to $2.32 per share. We apply a Study maturity risk discount of 25% equivalent to -A$0.74 per share. This risk discount will be unwound with advancement of studies.

Recommendation & Valuation

We maintain our Speculative Buy and valuation to A$1.95 per share. The ACG-Appian transaction provides a good indication of Jaguar's true value, which in our view remains unrecognised by the broader market.

Appendix: Calculation of Value Classes

In this section we detail our methodology for estimation of Gross, Equivalent, Recoverable, Payable (Payable) and Margin comparative values.

Gross Value

Gross Value represents the raw value of metals in either a deposit or per tonne of rock. Gross Value per tonne of ore (or deposit) is calculated by aggregating the multiples of elemental grade and their relevant metal sale value (example shown in Table 3). Comparison by gross value of different ore deposits is flawed due to the fact that it fails to take into account recoveries, payabilities and cost of production.

Table 3: Example calculation of Gross IGV per tonne of ore.

Metal	Ni	Cu	Co
Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
Deposit Raw Metal Grade	0.18% Ni	0.10% Cu	0.02% Co
Gross Value of metal /t of Ore	$32/t	$8/t	$8/t
	(0.18% x 17,500)	(0.10% x 8,000)	(0.02% x 40,000)
Gross Value /t Ore	$46/t Ore		

Source: Argonaut

Equivalent Value

Metal Equivalent Grades (and tonnes) are frequently quoted as part of resource company drilling or resource announcements. However, the derivation and meaning of these values is poorly understood by the general investment community. A common market misconception is that metal equivalent grades of the same type (eg. NiEq or CuEq) can be reliably compared across deposits. A core feature of a Metal Equivalent Grades is that it represents the aggregate value of metals as a primary element including its relevant metal recovery.

When component values are aggregated to a single metal equivalent value with a low metallurgical recovery, the resulting grade can appear inflated because few readers instinctively consider recovery factors. An example of this is our derivation of $46/t ore Gross Value calculated from individual metals in Table 3 versus our Nickel Equivalent Value of $53/t ore calculated in our Table 4 example.

In an ideal world we would prefer that regulators enforced statement of recovery whenever Equivalent Values were used. For example the Nickel equivalent grade of 0.305% NiEq presented in Table 4 would be stated as “0.305% NiEq / 45% Recovery”.

The below example outlines the most common method to calculate metal equivalent values for resources and drill holes from a suite of multi element assay. In this example we calculate the nickel equivalent value for a deposit containing nickel, copper and cobalt at various grades and recoveries.

Equivalent Metal Calculation Method:

A. Assign metal price assumptions and calculate value conversion factors for the chosen metal (in this case nickel).

B. Calculate the recoverable grade of each metal by multiplying the raw value by recovery.

C. Calculate the recoverable nickel value of each metal by multiplying the recoverable grade by the conversion factor calculated in step A.

D. Reinflate the recoverable nickel grades to ‘raw’ nickel equivalent deposit grade by dividing by the nickel recovery (45%)

E. Sum these values to attain a ‘Nickel Equivalent’ value for the deposit

Table 4: Method for calculation of nickel equivalent values for a Ni-Cu-Co deposit.

	Metal	Ni	Cu	Co
A	Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
	Value Conversion Factor for Nickel	1	0.46	2.29
		(17500/17500)	(8000/17500)	(40000/17500)
Deposit Raw Metal Grade		0.18% Ni	0.10% Cu	0.02% Co
Deposit Metal Recovery		45%	85%	45%
B	Recoverable Grade of Metal	0.081%	0.085%	0.008%
		(0.18%*45%)	(0.1%*85%)	(0.02%*45%)
C	Recoverable Nickel Equivalent Value	0.081	0.039	0.017
		(0.081*1)	(0.085*0.46)	(0.008*2.29)
D	Inflate to Equivalent Ni Grade of Ore	0.18	0.086	0.039
		(0.081/45%)	(0.039/45%)	(0.008/45%)
E	Deposit Nickel Equivalent Grade	0.305% NiEq		
		(0.18+0.086+0.039)		

Source: Argonaut

Recoverable Value

We define recoverable value as the total value of metals recoverable from a tonne of ore (or deposit). In our view this a superior measure compared with Gross or Equivalent Value as it accounts for losses from mineral processing recoveries. Recoverable value is calculated by multiplying the Gross Value components (or Equivalent Value) by their respective recoveries. Table 5 and Table 6 provide examples of Recoverable Value calculations from raw and equivalent grades respectively (note they are equal).

Table 5: Calculation of Recoverable value /t Ore from individual metals grades.

Metal	Ni	Cu	Co
Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
Value Conversion Factor for Nickel	1	0.46	2.29
	(17500/17500)	(8000/17500)	(40000/17500)
Deposit Raw Metal Grade	0.18% Ni	0.10% Cu	0.02% Co
Deposit Metal Recovery	45%	85%	45%
Recoverable Grade of metal /t of Ore	0.081%	0.085%	0.008%
	(0.18% x 17,500)	(0.10% x 8,000)	(0.02% x 40,000)
Recoverable Value /t of Ore	$14/t	$7/t	$3/t
	(0.081% x 17,500)	(0.085%x 8,000)	(0.008% x 40,000)
Recoverable Value /t Ore	$24/t Ore		

Source: Argonaut

Table 6: Calculation of Recoverable Value /t Ore from Nickel Equivalent grade.

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)

Source: Argonaut

Payable Value

Determination of 'Payable', provides us with a guide for how much revenue will be generated per unit of ore after refinement. Our Payable value calculation includes corrections for metal 'payabilities'. The term payablility refers to the percentage of value returned to the miner from the refiner of the product. The percentage of payability varies depending on the metal and product type. For example, gold miners who produce almost pure doré bars will be paid close to 100% payability for their product. The applicable payable percentage for metals reflects the associated refinement expense, yield, technical complexity and the impact of deleterious elements.

The nickel producers are subject to a wide variety of metal payabilities depending on product produced. A traditional nickel miner selling at 16% Ni sulphide concentrate to a pyrometallurgy refiner may only be paid 70% of contained nickel, 40% for copper and nothing for platinum group elements. However, if the same miner sells to a hydrometallurgical refiner they could expect higher profitable recoveries for all metals. If the miner was to invest in its own hydrometallurgical refinement equipment then it would gain direct exposure to value upside. If a nickel miner produces a purified Nickel Sulphate or pCAM product they can potentially early greater that 100% metal payability.

Table 7: Example payability ranges for various nickel products.

Product Produced	Nickel Payability Range
Sulphide Concentrate	70-75%
Mixed Hydroxide Precipitate (MHP)	82-86%
Battery Grade Sulphate (NiSO4)	102-107%
Battery Grade precursor cathode (pCAM)	120-140%

Source: Argonaut industry knowledge

Payable Value is calculated by recoverable metal value by percentage of metal payability for the applicable product.

Table 8: Calculation of Payable Value /t Ore from Nickel Equivalent grade.

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)
Payable Percentage	85% (MHP Product)
Payable Value /t Ore	$20.4 /t Ore
	(24 x 85%)

Source: Argonaut

Margin Value

Finally, we calculate the Margin Value per tonne of ore by subtracting costs per unit of production from the payable cost. Each project will have its own cost profile associated with scale, mining method, processing requirements etc. Determination of the Marginal Value provides us with a simple profit per unit of production and enables some basic economic modelling.

Figure 6: Calculation of Margin Value

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)
Payable Percentage	85% (MHP Product)
Payable Value /t Ore	$20.4 /t Ore
	(24 x 85%)
Costs /t Ore	$15/t Ore
Margin Value	$5.4 /t Ore
	(20.4 – 15)

Key Risks to valuation

Timelines

Our discounted cash flow model is time dependant. Any delay to scheduled development or production will adversely effect on our valuation.

Metallurgical performance

Provisional metallurgical testing has been completed upon a limited set of samples and is unlikely to accurately represent true future performance. Pilot POX test programmes have been completed with positive outcomes.

Fluro-apatite is associated with mineralisation at the Jaguar project. Sulphide concentrate characterisation studies have concluded that fluorine is present in quantities that may attract a penalty. Production of a sulphate product via POX will eliminate this penalty risk.

Commodity Pricing

Value estimates are based on consensus long term commodity price forecasts. A 10% difference to the price of nickel over the modelled life of mine will result in a ~25% shift in project valuation.

Costs

Cost assumptions are based on operating and capital costs from CTM documentation and our knowledge of industry rates.

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.

ESG credentials and sustainability

In this section we collate information regarding CTM's Environmental, Social and Governance performance. Refer to the disclosures section for commentary on Argonaut's approach to ESG.

Table 9: Environmental, Social, and Governance comments

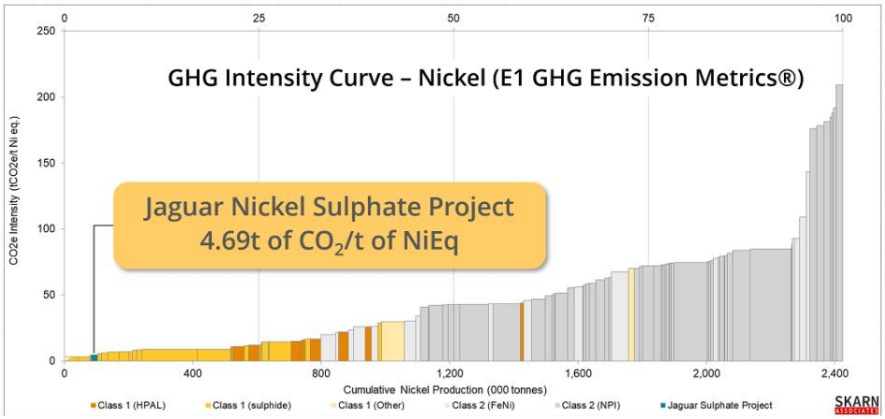
COMMITMENT / DELIVERY	Positive
• Our view on commitment and delivery needs to be considered in the light of the stage of operations • ESG issues are addressed in announcements and on the Company's website • CTM has displayed strong engagement with local communities and various levels of government • More than 90% of the current Jaguar project workforce are from the south-eastern region of the state of Para • More than 80% of Jaguar project expenditure related to exploration and development work has been award to local community and regional suppliers • CTM has constructed a plant nursery on site in partnership with local municipalities • The Company has implemented an internship program with the University of Maraba in the fields of geology, mining and engineering • CTM has improved access roads to the Jaguar site. These are also used by the local communities • CTM donated a 20,000L water tank to the nearby village of Minerasul • Survey data suggests that 95% of the local community interviewed support the Jaguar Project	

INDUSTRY	Positive
• Nickel is vital to the manufacture of NCM lithium-ion batteries. The demand for lithium-ion batteries is expected to grow with a global economic shift towards decarbonisation • The current development plan for CTM is to produce an intermediate nickel sulphate product via treatment through Pressure Oxidation • A greenhouse gas emission analysis of CTM's planned sulphate product is expected to be lower than 95% of global nickel production. This low production emission profile is driven by availability of hydroelectricity and the hydrometallurgical route of processing	

REPORTING	Acceptable
• CTM provides information about sustainability within various company announcements • A formal ESG Framework was implemented in late 2021. This framework is based on the Towards Sustainable Mining Principles and the United Nations-supported Principles of Responsible Investment • In May 2023 CTM published its first sustainability report.	

** Please refer to disclosures section for Argonaut's approach to sustainability*

Figure 7: Modelled greenhouse gas emissions for Jaguar versus global nickel production.



Source: CTM/Skarn Associates

RESEARCH:

Ian Christie | Director, Head of Research
+61 8 9224 6872

John Macdonald | Director, Metals & Mining Research
+61 8 9224 6835

George Ross | Senior Analyst, Metals & Mining Research
+61 8 9224 6840

Ben Crooks | Analyst, Metals & Mining Research
+61 8 9224 6818

Pat Streater | Analyst, Metals & Mining Research
+61 8 9224 6818

INSTITUTIONAL SALES:

Chris Wippl | Executive Director, Head of Institutional Sales
+61 8 9224 6875

Damian Rooney | Director, Institutional Sales Trader
+61 8 9224 6862

Josh Welch | Institutional Research Sales
+61 8 9224 6868

George Ogilvie | Institutional Research Sales
+61 8 9224 6871

Matt Middlemas | Associate, Institutional Sales
+61 8 9224 6803

John Santul | Consultant, Institutional Sales & Research
+61 8 9224 6859

CORPORATE AND PRIVATE CLIENT SALES:

Glen Colgan | Executive Director, Desk Manager
+61 8 9224 6874

Kevin Johnson | Executive Director, Corporate Stockbroking
+61 8 9224 6880

Ben Willoughby | Senior Dealer, Corporate Stockbroking
+61 8 9224 6876

David Keogh | Senior Dealer, Corporate Stockbroking
+61 8 9224 6852

Geoff Barnesby-Johnson | Senior Dealer, Corporate Stockbroking
+61 8 9224 6854

Rob Healy | Dealer, Private Clients
+61 8 9224 6873

James Massey | Dealer, Corporate Stockbroking

+61 8 9224 6849

Cameron Prunster | Dealer, Private Clients

+61 8 9224 6853

Harry Massey | Dealer, Private Clients

+61 8 9224 6829

Jake Solomon | Dealer, Private Clients

+61 8 9224 6855

Matej Mandic | Dealer, Private Clients

+61 8 9224 6887

Amanda Fu | Provisional Provider, Private Clients

+61 8 9224 6805

Important Disclosure
The publishing analyst owns CTM shares.

Argonaut holds or controls 161,638 CTM shares.

Information Disclosure
Each research analyst of this material certifies that the views expressed in this research material accurately reflect the analyst's personal views about the subject securities and listed corporations. None of the listed corporations reviewed or any third party has provided or agreed to provide any compensation or other benefits in connection with this material to any of the analyst(s).

ESG and Sustainability Commentary
Argonaut has introduced sustainability analysis for selected companies under coverage. Our intention is to highlight ESG-related attributes or risks, as it is believed these will increasingly impact investment attractiveness, cost of capital, and valuation. It is considered in the context of the size and life-cycle stage of the company. Where sustainability risk is high relative to company size/maturity, the analyst will consider adjusting the valuation and/or opinion to reflect this risk. A brief rationale behind the view and its impact on the analysis may be provided in the report.

The following table summarises how we have approached this issue. It is not all inclusive and we do not purport to provide a rating that is inclusive of all the factors that may be considered in a full ESG ratings report.

Measure	Selected Analysis factors	View
Commitment, operational delivery & risk mitigation	Largely subjective: • Visible efforts to embrace a more sustainable future • Nature of operations, jurisdiction and environmental impact • Comparison to peers in the same industry/sector • Efforts to mitigate identified risks • Engagement with stakeholders • Corporate governance considerations and good citizenship • Diversity, equality, and inclusion • Company actions supportive of aspirational targets • Energy usage and efforts to mitigate climate risks • Any reported ESG-related/corporate governance issues	Positive Neutral Negative
Industry/Sector sustainability	Largely subjective: • Commodity/product/service contribution to sustainable future • Industry/sector/business model resilience as pertains to ESG factors • Sector energy intensity and/or carbon emissions • Downstream/supply chain impact on sustainability	Positive Neutral Negative
Company ESG reporting	Largely objective (but in context of company size/maturity): • Sustainability/corporate governance report/audit • Availability of data to back up narrative (emissions, water usage etc.) • Reference to ESG-related framework (GRI, SASB, TCFD, UN SDGs, MSA) • Rating from a recognised global ESG ratings agency	Detailed Acceptable Limited

In the absence of uniform global reporting standards Argonaut's current approach and views are necessarily largely subjective. Argonaut will consider ways to formalise ratings as the ESG ratings industry and measurement criteria evolve, but in the meantime investors should do their own analysis and/or obtain independent ratings from ratings providers.

Note that in this context Argonaut uses sustainability and ESG interchangeably.

For U.S. persons only
This research report is a product of Argonaut Securities Pty Limited, which is the employer of the research analyst(s) who has prepared the research report. The research analyst(s) preparing the research report is/are resident outside the United States (U.S.) and are not associated persons of any U.S. regulated broker-dealer and therefore the analyst(s) is/are not subject to supervision by a U.S. broker-dealer, and is/are not required to satisfy the regulatory licensing requirements of FINRA or required to otherwise comply with U.S. rules or regulations regarding, among other things, communications with a subject company, public appearances and trading securities held by a research analyst account.

This report is intended for distribution by Argonaut Securities Pty Limited only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the U.S. Securities and Exchange Act, 1934 (the Exchange Act) and interpretations thereof by U.S. Securities and Exchange Commission (SEC) in reliance on Rule 15a 6(a)(2). If the recipient of this report is not a Major Institutional Investor as specified above, then it should not act upon this report and return the same to the sender. Further, this report may not be copied, duplicated and/or transmitted onward to any U.S. person, which is not the Major Institutional Investor.

In reliance on the exemption from registration provided by Rule 15a-6 of the Exchange Act and interpretations thereof by the SEC in order to conduct certain business with Major Institutional Investors, Argonaut Securities Pty Limited has entered into an agreement with a U.S. registered broker-dealer, Marco Polo Securities Inc. ("Marco Polo"). Transactions in securities discussed in this research report should be effected through Marco Polo or another U.S. registered broker dealer.

General Disclosure and Disclaimer

This research has been prepared by Argonaut Securities Pty Limited (ABN 72 108 330 650) ("ASPL") for the use of the clients of ASPL and other related bodies corporate (the "Argonaut Group") and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this report in any way. ASPL is a holder of an Australian Financial Services License No. 274099 and is a Market Participant of the Australian Stock Exchange Limited.

Nothing in this report should be construed as personal financial product advice for the purposes of Section 766B of the Corporations Act 2001 (Cth). This report does not consider any of your objectives, financial situation or needs. The report may contain general financial product advice and you should therefore consider the appropriateness of the advice having regard to your situation. We recommend you obtain financial, legal and taxation advice before making any financial investment decision.

This research is based on information obtained from sources believed to be reliable and ASPL has made every effort to ensure the information in this report is accurate, but we do not make any representation or warranty that it is accurate, reliable, complete or up to date. The Argonaut Group accepts no obligation to correct or update the information or the opinions in it. Opinions expressed are subject to change without notice and accurately reflect the analyst(s)' personal views at the time of writing. No member of the Argonaut Group or its respective employees, agents or consultants accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

Nothing in this research shall be construed as a solicitation to buy or sell any financial product, or to engage in or refrain from engaging in any transaction. The Argonaut Group and/or its associates, including ASPL, officers or employees may have interests in the financial products or a relationship with the issuer of the financial products referred to in this report by acting in various roles including as investment banker, underwriter or dealer, holder of principal positions, broker, director or adviser. Further, they may buy or sell those securities as principal or agent, and as such may effect transactions which are not consistent with the recommendations (if any) in this research. The Argonaut Group and/or its associates, including ASPL, may receive fees, brokerage or commissions for acting in those capacities and the reader should assume that this is the case.

There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment.

The analyst(s) principally responsible for the preparation of this research may receive compensation based on ASPL's overall revenues.

Copyright