Hartleys

IRONBARK ZINC LTD (IBG)

All of a sudden it looks like it could generate a lot of EBITDA

Ironbark Zinc Limited is developing the very large Citronen zinc project in Greenland. The project has a higher grade resource (M&I) of 29.9Mt @ 6.6% Zn and 0.5% Pb within a total resource (M+I+Inf) of 132Mt @ 4.0% Zn and 0.4% Pb. Due to the scale of the project (large production and long mine life), the upside leverage to zinc prices is very significant.

Hartleys estimates pre-tax NPV_{12} A$650m on spot prices

We assume ~US$500m of capex spent over two years (includes working capital). Using our zinc price profile (which is now lower than spot) our pre-tax NPV_{12} is ~$230m (~33cps after assumed dilution). At spot prices, our pre-tax valuation is ~$650m, and we estimate the project would generate an average of A$200m EBITDA pa.

We have seen credible forecasts for zinc to peak near US$1.80/lb. While forecasters do not anticipate zinc could remain at such levels for long, we estimate that IBG could generate A$500-600m EBITDA pa if zinc held that level in the early years of production. At such prices, capital payback would be <2 years. Hence, even a relatively brief extreme zinc spike is material.

Citronen is at an advanced stage of development studies

Project development is at an advanced stage with a pre-feasibility study released in 2009 followed by a BFS/DFS (and lowered capex) in early 2013. With subsequent cost deflation, we expect the DFS can be improved (see our note "Rally seems it could be just around the corner" 3rd May 2016). We expect the award of the mining licence any day (although we have already been disappointed substantially this year on timing). Subsequently, finance will be the final hurdle to development.

Retain Speculative Buy

We retain our Speculative Buy recommendation. IBG offers significant leverage to rising zinc prices. As we have recently seen with gold and lithium developers, small market cap companies can hide significant value of potential projects. We believe now that zinc prices have improved, the market should recognise the potential significance of the Citronen project.

Current zinc prices are now high enough, in our view, for the equity market to consider funding the project (NPV is approximately equal to capex). Our price target implies ~A$175m mkt cap. The low cash balance is an obvious near term risk. Zinc price volatility is another substantial risk.

Fig. 1: Hartleys profit estimates based on spot prices

P&L	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Net Revenue	**A$m**	**0.0**	**0.0**	**314.0**	**727.6**
Total Costs	**A$m**	**-2.5**	**-2.6**	**-168.4**	**-358.2**
EBITDA	A$m	-2.5	-2.6	145.5	369.4
- margin		-	-	46%	51%
Depreciation/Amort	A$m	-7.7	-26.7	-56.1	-70.8
EBIT	**A$m**	**-10.2**	**-29.3**	**89.4**	**298.6**
Net Interest	A$m	-9.5	-19.9	-21.2	-21.1
Pre-Tax Profit	**A$m**	**-19.8**	**-49.1**	**68.3**	**277.4**
Tax Expense	A$m	0.0	0.0	0.0	-104.0
Normalised NPAT	**A$m**	**-19.8**	**-49.1**	**68.3**	**173.4**

Source: IRESS

Zinc: Developer / Explorer

IBG.asx
Speculative Buy

	29 Nov 2016
Share Price	$0.105
Valuation	$0.29
Price Target (12 month)	$0.33

Brief Business Description:
Very large zinc development project in Greenland

Hartleys Brief Investment Conclusion
Deposit is large and implies long mine life. Economic on spot prices and consensus estimates, very profitable at industry (the upper end of sell-side consensus) forecasted prices.

Chairman & MD
Peter Bennetto (Non Executive Chairman)
Jonathan Downes (Managing Director)

Major Shareholders

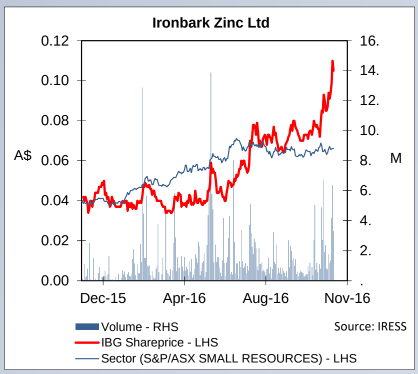
Nyrstar Int	19.3%
Glencore	8.3%

Company Address
Level 1, 350 Hay St
Subiaco, WA, 6008

Issued Capital	505.9m
- fully diluted	526.9m
Market Cap	A$53.1m
- fully diluted	A$55.3m
Cash (30 Sep 16a)	A$1.9m
Debt (30 Sep 16a)	A$0.0m
EV	A$51.2m
EV/Resource Zn	A$0.0044/lb
EV/Reserve Zn	-

Prelim. (A$m)	FY19e	FY20e	FY21e
Prod (kt Zn eq)	0.0	83.8	194.4
Op Cash Flw	-22.2	57.6	153.3
Norm NPAT	-48.6	34.7	123.5
CF/Share (cps)	-2.4	1.7	6.0
EPS (cps)	-3.1	2.2	7.7
P/E	-4.5	6.2	1.8

	Zn	Pb
Resources (Billion lb)	11.7	1.3
Reserves (Billion lb)	0.0	0.0



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Hartleys has completed a capital raising in the past 12 months for Ironbark Zinc Limited ("Ironbark"), for which it has earned fees. Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Ironbark, for which it has earned fees and continues to earn fees. Analyst has a beneficial interest in IBG. See back page for details.

Ironbark Zinc Ltd
IBG

Share Price
$0.105

29 November 2016
Speculative Buy

Key Market Information	
Share Price	**$0.105**
Market Capitalisation - ordinary	A$55m
Net Debt (cash)	-$2m
Market Capitalisation - fully diluted	A$55m
EV	A$53m
Issued Capital	505.9m
Options	21.0
Issued Capital (diluted for options)	526.9m
Issued Capital (diluted inc. options and new capital)	1904.4m
12month price target	**$0.33**

P&L	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Net Revenue	**A$m**	**0.0**	**0.0**	**267.0**	**594.9**
Total Costs	**A$m**	**-2.5**	**-2.6**	**-156.0**	**-326.7**
EBITDA	A$m	-2.5	-2.6	111.0	268.2
- margin		-	-	42%	45%
Depreciation/Amort	A$m	-7.7	-26.4	-55.4	-69.8
EBIT	**A$m**	**-10.2**	**-29.0**	**55.6**	**198.4**
Net Interest	A$m	-9.4	-19.6	-20.9	-21.0
Pre-Tax Profit	**A$m**	**-19.6**	**-48.6**	**34.7**	**177.4**
Tax Expense	A$m	0.0	0.0	0.0	-53.9
Normalised NPAT	**A$m**	**-19.6**	**-48.6**	**34.7**	**123.5**
Abnormal Items	A$m	0.0	0.0	0.0	0.0
Reported Profit	A$m	-19.6	-48.6	34.7	123.5
Minority	A$m	0.0	0.0	0.0	0.0
Profit Attrib	**A$m**	**-19.6**	**-48.6**	**34.7**	**123.5**

Balance Sheet	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Cash	**A$m**	**655.0**	**296.9**	**85.2**	**238.1**
Other Current Assets	A$m	0.2	0.2	33.1	73.5
Total Current Assets	**A$m**	**655.1**	**297.0**	**118.3**	**311.6**
Property, Plant & Equip.	A$m	32.3	341.4	554.8	485.1
Exploration	A$m	96.4	96.8	97.2	97.6
Investments/other	A$m	1.2	1.2	1.2	1.2
Tot Non-Curr. Assets	**A$m**	**129.9**	**439.4**	**653.2**	**583.9**
Total Assets	**A$m**	**785.0**	**736.4**	**771.5**	**895.5**
Short Term Borrowings	A$m	-	-	-	-
Other	A$m	0.1	0.1	0.5	0.9
Total Curr. Liabilities	**A$m**	0.1	0.1	0.5	0.9
Long Term Borrowings	A$m	362.7	362.7	362.7	362.7
Other	A$m	-	-	-	-
Total Non-Curr. Liabil.	**A$m**	**362.7**	**362.7**	**362.7**	**362.7**
Total Liabilities	**A$m**	**362.8**	**362.8**	**363.2**	**363.6**
Net Assets	**A$m**	**422.2**	**373.7**	**408.4**	**531.8**
Net Debt	A$m	-292.3	65.8	277.5	124.6

Cashflow	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Operating Cashflow	A$m	-2.5	-2.6	78.5	228.2
Income Tax Paid	A$m	0.0	0.0	0.0	-53.9
Interest & Other	A$m	-9.4	-19.6	-20.9	-21.0
Operating Activities	**A$m**	-11.9	-22.2	57.6	153.3
Property, Plant & Equip.	A$m	-53.3	-335.5	-268.8	0.0
Exploration and Devel.	A$m	-0.4	-0.4	-0.4	-0.4
Other	A$m	0.0	0.0	0.0	0.0
Investment Activities	**A$m**	**-53.7**	**-335.9**	**-269.2**	**-0.4**
Borrowings	A$m	362.7	0.0	0.0	0.0
Equity or "tbc capital"	A$m	362.7	0.0	0.0	0.0
Dividends Paid	A$m	0.0	0.0	0.0	0.0
Financing Activities	**A$m**	**725.4**	**0.0**	**0.0**	**0.0**
Net Cashflow	**A$m**	**659.8**	**-358.1**	**-211.6**	**152.9**

Shares	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Ordinary Shares - End	m	2063.9	2063.9	2063.9	2063.9
Ordinary Shares - W'ted	m	1963.2	2063.9	2063.9	2063.9
Diluted Shares - W'ted	m	1973.2	2063.9	2063.9	2063.9

Ratio Analysis	Unit	30 Jun 18	30 Jun 19	30 Jun 20	30 Jun 21
Cashflow Per Share	A$ cps	-0.6	-1.1	2.8	7.4
Cashflow Multiple	x	-17.4	-9.8	3.8	1.4
Earnings Per Share	A$ cps	-1.0	-2.4	1.7	6.0
Price to Earnings Ratio	x	-10.5	-4.5	6.2	1.8
Dividends Per Share	AUD	-	-	-	-
Dividend Yield	%	0.0%	0.0%	0.0%	0.0%
Net Debt / Net Debt + Equity	%	-225%	15%	40%	19%
Interest Cover	X	na	na	2.7	9.4
Return on Equity	%	na	na	8%	23%

Directors	Company Information
Peter Bennetto (Non Executive Chairman)	Level 1, 350 Hay St
Jonathan Downes (Managing Director)	Subiaco, WA, 6008
David Kelly (Non Exec, Glencore representative)	Ph +61 8 6461 6350
Jason Dunning (Non Exec, Nyrstar representative)	Fax +61 8 6210 1872
Gary Comb (Non Exec.)	
	www.ironbarkgold.com.au

Top Shareholders	Ordinary	
	m sh.	%
Nyrstar Int	97.7	19.3%
Glencore	42.0	8.3%

Reserves & Resources			Mt	Zn %	Pb %
Citronen - High Grade	M+I	5% cut	22.6	6.7%	0.5%
Citronen - High Grade	Inf	5% cut	7.3	6.2%	0.5%
Citronen - High Grade	**Total**	**5% cut**	**29.9**	**6.6%**	**0.5%**
Citronen - High Grade	**Reserve**	**5% cut**	**none**		
Citronen - Global	M+I	2% cut	94.3	4.1%	0.4%
Citronen - Global	Inf	2% cut	37.7	3.8%	0.4%
Citronen - Global	**Total**	**2% cut**	**132.0**	**4.0%**	**0.4%**
Citronen - Global	**Reserve**	**2% cut**	**none**		

Production Summary	Unit	Jun 18	Jun 19	Jun 20	Jun 21
Unbeneficiated Mill Throughput	Mt	0.00	0.00	1.64	3.28
Processed Mill Throughput	Mt	0.00	0.00	1.10	2.20
Mined grade Zn	%	0.0%	0.0%	6.4%	7.4%
Produced Zn	kt	0.0	0.0	93.9	219.1
Payable Zn	kt	0.0	0.0	79.8	186.3
Payable Zn Equiv	kt	0.0	0.0	83.8	194.4
M&I Resource Mid Grade Conversion	%	89.3%	89.3%	215.4%	236.9%
Mine Life	yr			13.75	12.75
Assumed Mining Inventory	Mt	46.0	46.0	45.1	41.9
Assumed Mining Inventory - Zn grade	%	5.2%	5.2%	5.2%	5.0%
Assumed Mining Inventory - Pb grade	%	0.5%	0.5%	0.5%	0.5%
Capex		- 53.3	- 335.5	- 268.8	-

Costs	Unit	Jun 18	Jun 19	Jun 20	Jun 21
Cost per milled tonne	$A/t			85.6	89.9
EBITDA / tonne milled ore	$A/t			67.6	81.7
Total cost per milled tonne				95.0	99.5
Total Cash Costs (as per P&L)	$A/lb Zn eq			0.85	0.76
C1: Operating Cash Cost = (a)	$A/lb Zn eq			0.76	0.69
(a) + Royalty = (b)	$A/lb Zn eq			0.83	0.76
C2: (a) + depreciation & amortisation = (c)	$A/lb Zn eq			1.06	0.85
(a) + actual cash for development = (d)	$A/lb Zn eq			2.22	0.69
AISC: (c) + Royalty	$A/lb Zn eq			1.13	0.92
(d) + Royalty	$A/lb Zn eq			2.29	0.76
AISC: (c) + Royalty	$US/lb Zn eq			0.86	0.71

Price Assumptions	Unit	Jun 18	Jun 19	Jun 20	Jun 21
AUDUSD	US$/A$	0.75	0.76	0.76	0.77
Zinc	US$/lb	1.18	1.18	1.10	1.07
Lead	US$/lb	0.90	0.93	0.92	0.90

Hedging	Unit	Jun 18	Jun 19	Jun 20	Jun 21
none					

Sensitivity Analysis	Valuation	FY21 NPAT
Base Case	**0.29**	**123.5**
Spot Prices	0.64 (120.4%)	173.4 (40.5%)
Spot USD/AUD 0.75, Zinc $1.27/lb,Lead $1.00/lb.		
AUDUSD +/--10%	0.27 / 0.32 (-7.4% / 8.7%)	113.9 / 135.1 (-7.7% / 9.4%)
Zinc +/--10%	0.45 / 0.10 (53.2% / -67.1%)	145.0 / 101.9 (17.4% / -17.4%)
Lead +/--10%	0.30 / 0.28 (2.9% / -2.9%)	124.4 / 122.5 (0.8% / -0.8%)
Production +/--10%	0.46 / 0.07 (57.7% / -74.5%)	146.8 / 100.2 (18.9% / -18.9%)
Operating Costs +/--10%	0.15 / 0.41 (-49.7% / 41.6%)	110.3 / 136.7 (-10.7% / 10.7%)

Unpaid Capital (excluding convertible notes which are assumed to be never used)

Year Expires	No. (m)	$m	Avg price	% ord
30-Jun-17	1.0	0.1	0.10	0%
30-Jun-18	20.0	3.5	0.17	4%
30-Jun-19	0.0	0.0	0.00	0%
30-Jun-20	0.0	0.0	0.00	0%
30-Jun-21	0.0	0.0	0.00	0%
30-Jun-22	0.0	0.0	0.00	0%
TOTAL	**21.0**	**3.6**	**0.17**	**4%**

Valuation	$m	$/shr
100% Citronen (pre-tax NAV at disc. rate of 12%)	628	0.33
Other Assets/Exploration	30	0.02
Forwards	0	0.00
Corporate Overheads	-13	-0.01
Net Cash (Debt)	2	0.00
Convertible notes (assumed converted to equity)	0	0.00
Tax (NPV future liability)	-96	-0.05
Options & Other Equity	2	0.00
Total	**553**	**0.29**

Analyst: Trent Barnett
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29 Nov 16

"tbc capital" could be equity or debt. Our valuation is risk-adjusted for how this may be obtained.

Sources: IRESS, Company Information, Hartleys Research

VALUATION

The DFS mine plan is for underground ore to be mined first (11 years), and then progress to the lower grade open pits in years 11-14. The operation is expected to have a mining rate of 3.3mtpa (2.2mtpa processing). Operating costs are low at ~US$52/t ore, although the remote and isolated location means that shipping and logistics costs are meaningful, adding an extra ~$10/t ore. There are additional smelter fees of ~12-25c/lb, with the fee linked to the prevailing zinc price (adds 15c/lb or $14/t ore in our model). Consequently total cash costs are expected to be reasonably high. We assume costs of US$0.72/lb Zn net of credits (CFR, including royalties and our assumed smelter fees). Based on the feasibility study, capex is expected to be US$484m.

We assume a 46Mt mining inventory at 5.2% zinc and 0.5% lead. We assume a ~15 year mine life and ~90% conversion of the mid-grade resource. The resource remains open to further mineralisation but is unproven at this time.

We assume a 3.3mtpa mine operation beginning in late CY20. We assume payable zinc equivalent of >200k tonnes (~400kt concentrate) for the first two years before declining to ~120-160ktpa.

We assume costs of ~$66/t mined ore which equates to <$0.70/lb zinc in early years rising to $0.82/lb in later years.

We assume ~A$650m of capex spent over two years, funded ~50% debt and ~50% new equity at ~25cps. Conservatively, we don't assume NFC exercises its right to purchase 19.9% of the project. We assume the debt is funded at 6% (it could be lower). We use a 12% discount rate.

We assume the convertible notes ($50m) are never drawn.

Fig. 2: Hartleys Cost Assumptions

	Underground only			Open Pit					
	Total	US$/t ore	US$/t Zn eq	Total	US$/t ore	US$/t Zn eq	Total	US$/t ore	US$/t Zn eq
Mine life	11			3			14		
Ore	36.1			9.9			46.0		
grade Zn	5.8%			3.1%			5.2%		
grade Pb	0.5%			0.6%			0.5%		
Payable Zn Mlb	3,522			500			4,022		
Payable Pb Mlb	198			60			258		
Payable Zn eq Mlb*	3,695			553			4,248		
Mining	897	24.8	0.24	67	6.8	0.12	964	21.0	0.23
Processing	447	12.4	0.12	145	14.7	0.26	592	12.9	0.14
Overheads (inc corporate)	320	8.9	0.09	61	6.1	0.11	381	8.3	0.09
Logistics	246	6.8	0.07	67	6.8	0.12	313	6.8	0.07
Royalties	142	3.9	0.04	31	3.2	0.06	173	3.8	0.04
Smelter fees	553	15.3	0.15	82	8.3	0.15	635	13.8	0.15
Operating Costs	1,665	46.1	0.45	273	27.7	0.49	1,938	42.2	0.46
+ logistics	1,911	52.9	0.52	340	34.5	0.61	2,250	49.0	0.53
+ royalties	2,052	56.8	0.56	371	37.7	0.67	2,423	52.7	0.57
+ smelting	2,605	72.1	0.71	453	46.0	0.82	3,058	66.5	0.72
TOTAL CASH COSTS	**2,605**	**72.1**	**0.71**	**453**	**46.0**	**0.82**	**3,058**	**66.5**	**0.72**

Source: Hartleys Dilution and leverage

The table below shows our base case valuation (assuming large dilution) and two more optimistic scenarios. Our "Lower Bull Case" valuation assumes the project is funded 100% equity, but at prices closer to the full project value. Our "Maximum Bull Case" valuation assumes the project is funded entirely with debt (or funded with internal cash flow from a larger company).

Fig. 3: IBG leverage to long term zinc prices

Zinc Price per lb		Base Case (aggressive dilution)		Lower Bull Case (100% equity funded)		Maximum Bull Case (100% debt funded)	
AUD*	USD	IBG Val. (A$/shr)	New Shares (m)	IBG Val. (A$/shr)	New Shares (m)	IBG Val. (A$/shr)	New Shares (m)
0.80	0.60		n/a		n/a		0
0.94	0.70		n/a		n/a		0
1.07	0.80		n/a	$ 0.03	n/a	$ 0.03	0
1.20	0.90	$ 0.02	15847	$ 0.01	34436	$ 0.22	0
1.34	1.00	$ 0.18	1629	$ 0.18	2841	$ 0.44	0
1.47	1.10	$ 0.29	1030	$ 0.36	1509	$ 0.66	0
1.60	1.20	$ 0.40	813	$ 0.55	1028	$ 0.89	0
1.74	1.30	$ 0.50	702	$ 0.75	779	$ 1.11	0
1.87	1.40	$ 0.60	633	$ 0.95	628	$ 1.34	0
2.00	1.50	$ 0.69	587	$ 1.16	526	$ 1.56	0
2.14	1.60	$ 0.78	554	$ 1.37	452	$ 1.78	0
2.27	1.70	$ 0.87	529	$ 1.58	397	$ 2.01	0
2.41	1.80	$ 0.97	510	$ 1.79	353	$ 2.23	0
2.54	1.90	$ 1.05	494	$ 2.01	318	$ 2.45	0
2.67	2.00	$ 1.14	481	$ 2.22	290	$ 2.67	0

AUD/USD 0.75*

Source: Hartleys. Valuations based on a 12% discount rate.

PRICE TARGET

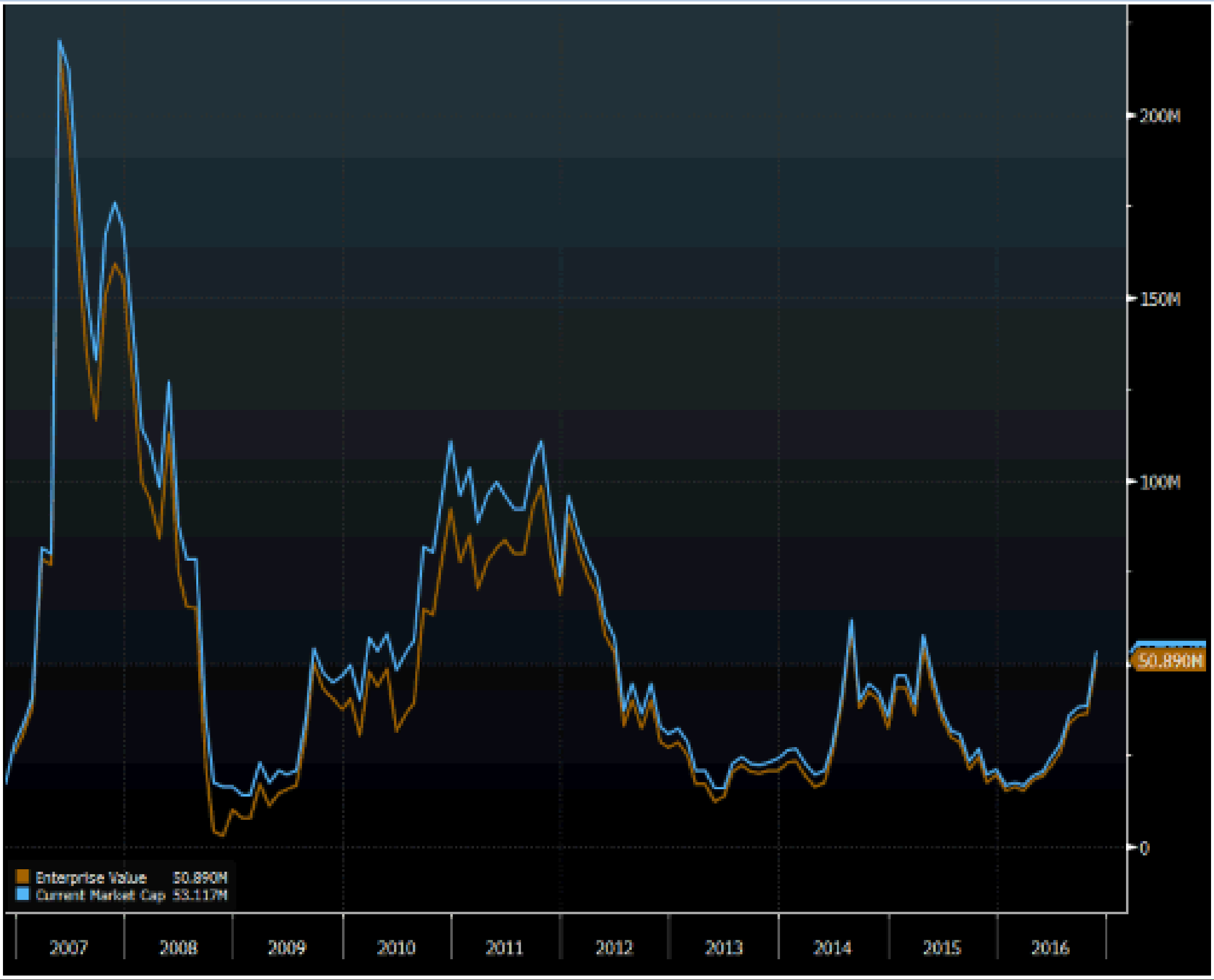
Our price target is a blended valuation based on a scenario of different of commodity price assumptions and capital raising prices. We have increased it to 33cps (from 19cps).

Fig. 4: Price Target Methodology

Price Target Methodology	Weighting	Spot	12 mth out
NPV base case, assuming significant equity dilution	52%	$0.29	$0.32
NPV at spot commodity and fx prices	15%	$0.64	$0.71
NPV using spot fx, but zinc prices a US$1.37/lb	1%	$0.60	$0.67
NPV using spot fx, but zinc prices a US$1.60/lb	1%	$0.78	$0.88
AUD zinc price calls (1.8Mt over 12yrs, avg strike @A$0.98/lb)	5%	$0.66	$0.66
Net cash	25%	$0.00	$0.00
NPV using spot fx, but zinc prices at US$1.30/lb, no equity dilution	1%	$1.11	$1.24
Risk weighted composite		**$0.31**	
12 Months Price Target		**$0.33**	
Shareprice - Last		$0.105	
12 mth total return (% to 12mth target + dividend)		**219%**	

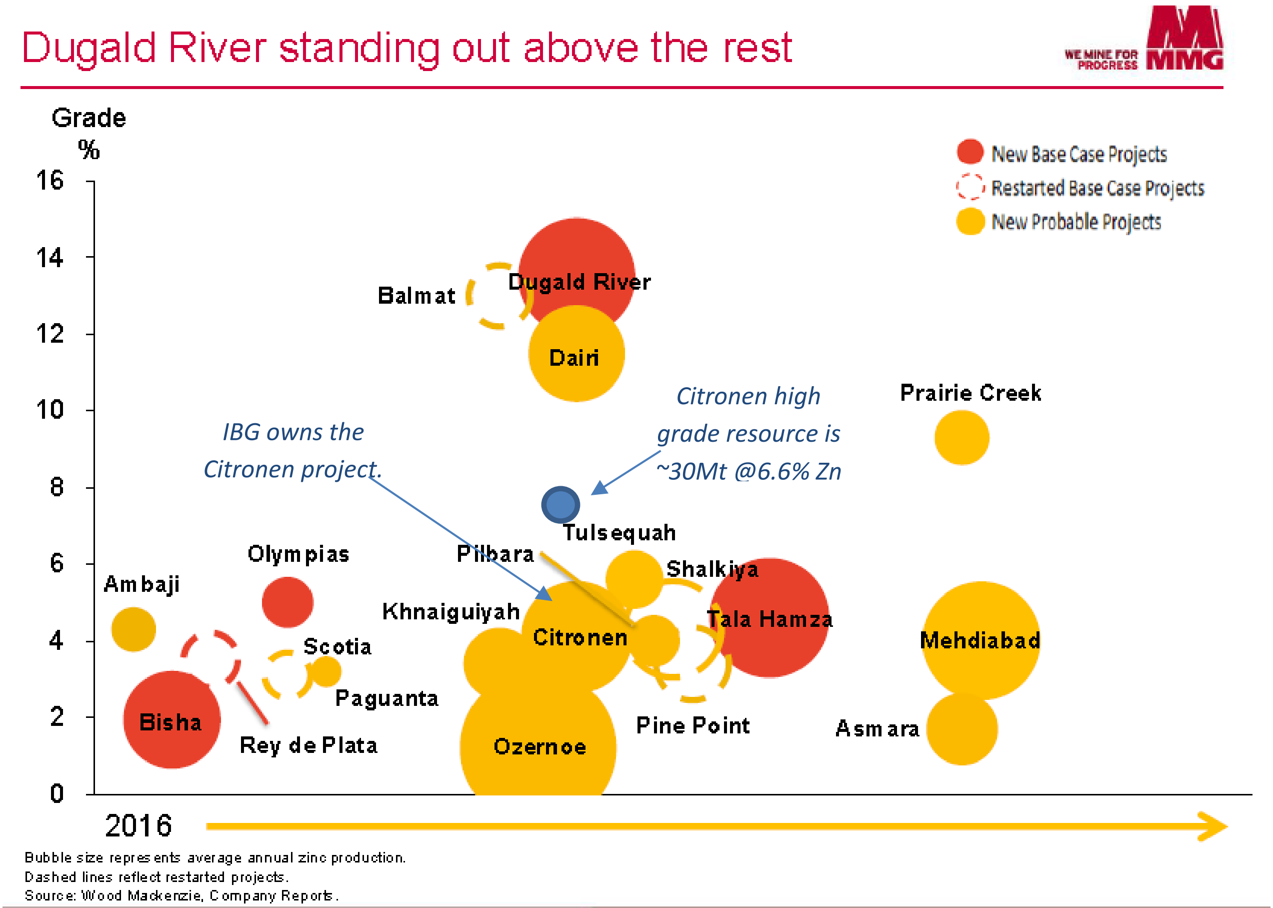
Source: Hartleys

Fig. 5: Historic peak and low Market Cap (Blue) and Enterprise Value (Orange)



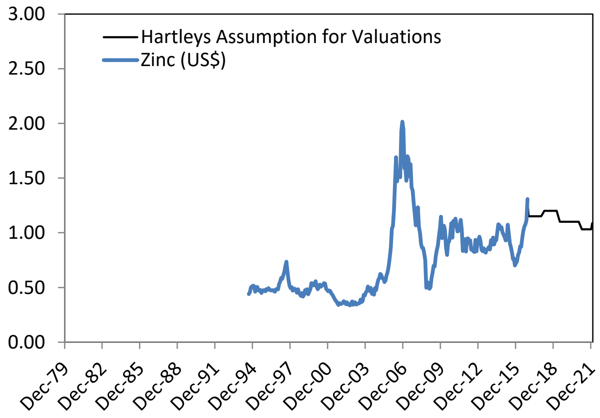
Source: Bloomberg

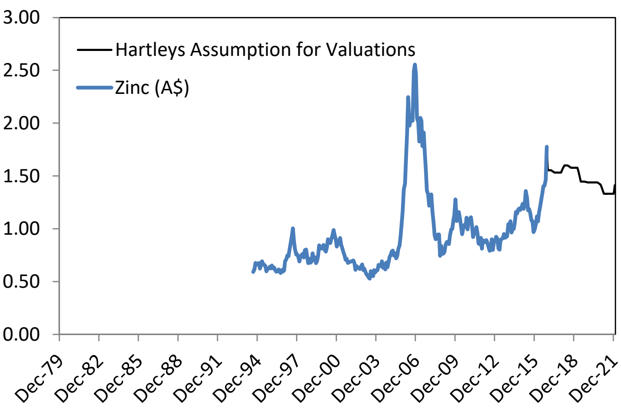
Fig. 6: Citronen one of the largest undeveloped zinc mines



Source: MMG, Hartleys

Fig. 7: Zinc Price assumptions





Source: Hartleys, IRESS

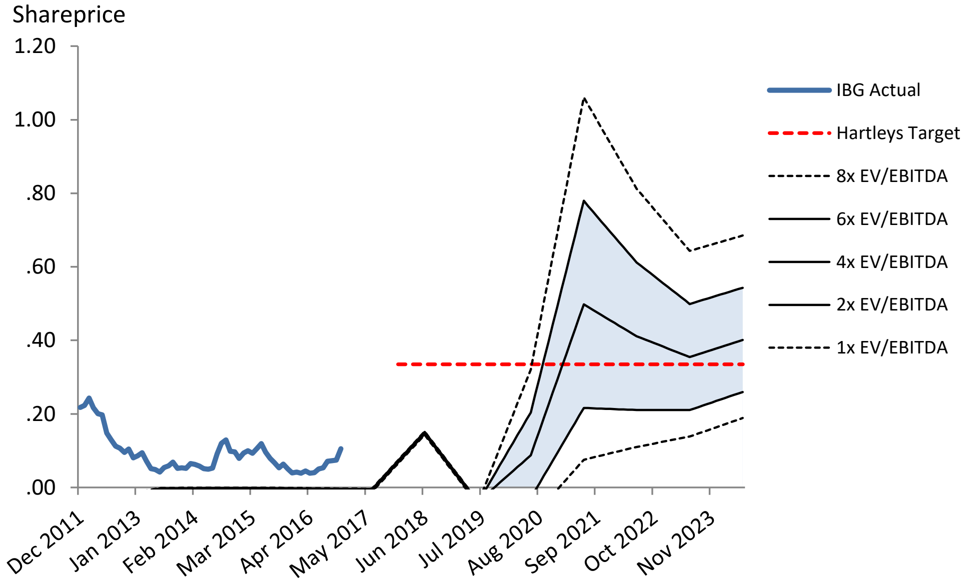
Fig. 8: Key assumptions and risks for valuation

Assumption	**Risk of not realising assumption**	**Downside risk to valuation if assumption is incorrect**	**Comment**
Fourteen year mine life	Low	Upside	The current high grade resource implies a mine life of >15years.
Zinc price fall	Moderate	Substantial	Our zinc price assumptions imply prices fall over coming years.
Large proportion of capex is funded with debt	Moderate to high	Not meaningful	The long mine life should support debt funding
Equity can be raised at prices higher than current	Moderate to high	Substantial	We assume that if the project is developed, it will be because the economics (zinc price) are compelling, and the shareprice will better reflect the fundamental value of Citronen in a high zinc price environment
Conservatively, we don't assume NFC exercises its right to purchase 19.9% of the project.	Moderate	Upside	We assume the project equity is financed by IBG shareholders, and they do not receive an equity injection from any "farm-out"
Limited value for exploration and other projects	Moderate	Upside	The other assets may have exploration success
Conclusion	*IBG still has funding risk, which reduces as zinc prices increase (in our view). Consequently, we view IBG as leveraged to rising zinc prices.*		

Source: Hartleys

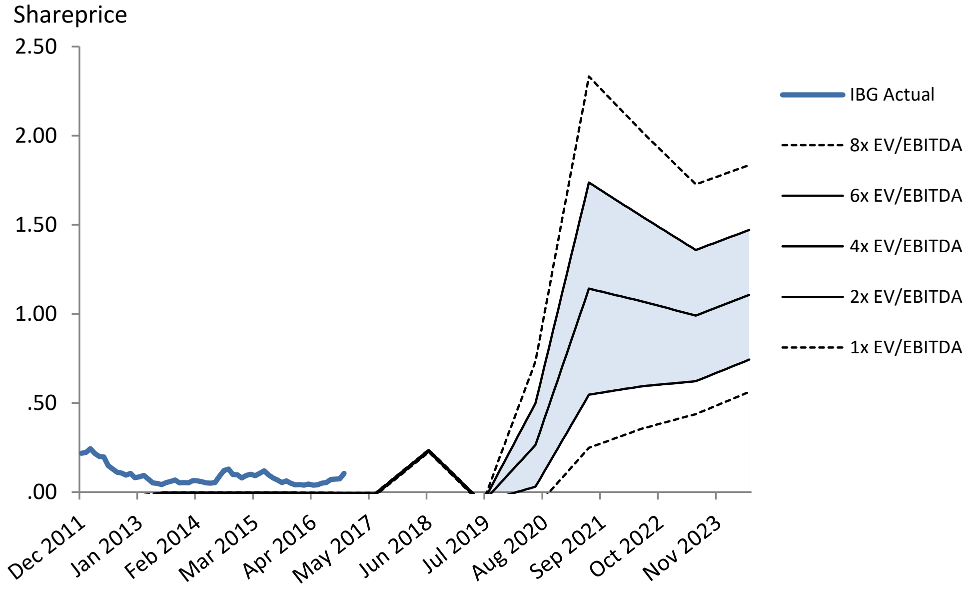
EV/EBITDA BANDS

Fig. 9: Using Hartleys base case commodity forecasts



Source: Hartleys Estimates, IRESS

Fig. 10: Using spot commodity prices



Source: Hartleys Estimates, IRESS

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Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

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