

SHEFFIELD RESOURCES LIMITED (SFX)

Mineral sands prices rising...good for financing

Consensus expectations for mineral sands prices have been increasing, and we have adjusted our estimates accordingly. The consequence is a meaningful increase to our Sheffield Resources Ltd (SFX) valuation. Rising tightness in the market also suggests financing risk is lower as industry and financiers view Thunderbird development as increasingly profitable operation.

Remaining finance seems digestible

Late last year, SFX announced a US\$200m debt facility with Taurus (still conditional on due diligence and equity). The package comprises a US\$175m term loan facility and US\$25m contingent instrument facility.

We estimate that Thunderbird requires ~A\$150m of additional financing, which we assume is new ordinary equity. However, it could be new secured debt (eg against power station infrastructure) or a project level sell-down.

Offtakes almost all done.

The project has five main product streams, which all required offtakes. SFX now has 50% of Stage 1 forecast ilmenite revenue and 100% of Stage 1 forecast zircon revenue under binding offtake agreement (combined 75% of Stage 1 project revenue). The zircon appears an excellent product, and volumes are large at 76ktpa (initially ~50ktpa). The lower grade zircon concentrate volume is ~68ktpa (initially ~50ktpa). Ilmenite volumes of ~390ktpa (initially 265ktpa) are also large volumes to be placed into the market. The meaningful size of the project in the current tight market means Thunderbird has strategic value.

Native Title resolution imminent

The mining licence has been approved to be issued, but has not been enacted by SFX due to a subsequent appeal by a Native Title claimant. To date, previous appeals by the claimant have been dismissed, and it appears SFX is in a strong position. The National Native Title Tribunal determination is scheduled for the next few months and Final Federal environmental approval also expected in Q3 2018. We assume construction can begin early CY19.

Maintain Speculative Buy

Our base case valuation (\$1.26) assumes no project sell down, and we assume ~175m new shares. Our spot price valuation is \$1.58. We use NPV12, while an industry player could use NPV8. Given the mine life, the discount rate assumption has a big upside impact on potential valuation under a takeover scenario. We have a twelve month price target of \$1.47.

Fig. 2: SFX offtakes

Product (% BFS Revenue)	Binding Agreement (% of Stage 1 output)	Offtake Parties
Premium Zircon (43%)	100%	Sukaso, Ruby Ceramics, RZI, Qingyuan Jinsheng, Minchem, CFM, Others
Zircon Concentrate (19%)	100%	Hainan Wensheng, RZI
LTR Ilmenite (29%)	50%	Bengbu, Others
HiTi-88 (5%)	In Progress	
Titano-magnetite (4%)	In Progress	

SFX.asx Speculative Buy

	27 Jul 2018
Share Price	\$0.86
aluation	\$1.26
Price Target (12 month)	\$1.47

Brief Business Description:

Significant and advanced mineral sands development project (Thunderbird project in WA).

Hartleys Brief Investment Conclusion

The Thunderbird project is large. With a debt package now agreed, and rising mineral sands prices, it appears compelling.

Chairman & MD

Will Burbury (Non-Exec Chairman)	
Will Burbury (Non-Exec Chairman)	
Bruce Mcfadzean (MD)	
Top Shareholders	
Blackrock	5.9%
Colonial First State	5.9%
Walter Yovich	5.9%

Company Address

Level 2, 41-47 Colin Street			
West Perth, WA 6005			
Issued Capital			229.0m
- fully diluted (itm)			244.4m
Market Cap			A\$196.9m
- fully diluted			A\$210.2m
Cash (30 Jun 18a)			A\$23.0m
Debt (30 Jun 18a)			A\$0.0m
EV			A\$173.9m
	FY19e	FY20e	FY21e
EBITDA	-9.3	-9.7	105.9
Op Cash Flw	-13.6	-25.4	66.0
Norm NPAT	-19.4	-42.7	59.4
CF/Share (cps)	-4.3	-6.3	16.3
EPS (cps)	-6.1	-10.6	14.7
P/E	-14.0	-8.1	5.8



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Source: SFX

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Sheffield Res Ltd	1			Sh	are Price
SFX				51	\$0.860
Key Market Information					
Share Price Market Capitalisation - ordi	000/				\$0.860 A\$197m
Net Debt (cash)	lialy				-\$23m
Market Capitalisation - fully	diluted				A\$210m
EV					A\$181m
EV inc. assumed new capit	al				A\$510m
Issued Capital					229.0m
Options					15.4
Issued Capital (fully diluted Issued Capital (fully diluted		,	l)		244.4m 419.0m
Valuation					\$1.26
12month price target P&L	Unit	20 km 40	30 Jun 20	30 Jun 21	\$1.47 30 Jun 22
Net Revenue	A\$m	30 Jun 19 0.0	30 Jun 20 0.0	30 Jun 21 209.4	236.6
Total Costs	A\$m	-9.3	-9.7	-103.5	-116.3
EBITDA	A\$m	-9.3	-9.7	105.9	120.3
- margin		-	-	51%	51%
Depreciation/Amort	A\$m	-5.8	-17.3	-25.6	-26.1
EBIT	A\$m	-15.0	-27.0	80.3	94.2
Net Interest	A\$m	-4.4	-15.7	-21.0	-18.9
Pre-Tax Profit	A\$m	-19.4	-42.7	59.4	75.3
Tax Expense	A\$m	0.0	0.0	0.0	-12.2
Normalised NPAT	A\$m	-19.4	-42.7	59.4	63.1
Abnormal Items	A\$m	0.0	0.0	0.0	0.0
Reported Profit	A\$m	-19.4	-42.7	59.4	63.1
Minority	A\$m	0.0	0.0	0.0	0.0
Profit Attrib	A\$m	-19.4	-42.7	59.4	63.1
Balance Sheet Cash	Unit A\$m	30 Jun 19 223.7	30 Jun 20 91.2	30 Jun 21 124.0	30 Jun 22 205.1
Other Current Assets	A\$m	0.8	0.8	42.9	48.5
Total Current Assets	A\$m	224.4	92.0	166.9	253.5
Property, Plant & Equip.	A\$m	114.9	329.6	311.2	288.1
Exploration	A\$m	38.3	42.3	45.1	47.9
Investments/other	A\$m	0.0	0.0	0.0	0.0
Tot Non-Curr. Assets	A\$m	153.2	372.0	356.4	336.1
Total Assets	A\$m	377.7	463.9	523.3	589.6
Short Term Borrowings	A\$m	-	-	-	-
Other	A\$m	2.4	2.5	25.6	28.8
Total Curr. Liabilities	A\$m	2.4	2.5	25.6	28.8
Long Term Borrowings	A\$m	171.6	300.4	277.3	277.3
Other	A\$m	-	-	-	-
Total Non-Curr. Liabil.	A\$m	171.6	300.4	277.3	277.3
Total Liabilities Net Assets	A\$m A\$m	174.0 203.7	303.0 161.0	303.0 220.3	306.1 283.5
Net Debt	A\$m A\$m	-52.1	161.0 209.3	153.4	283.5 72.3
Cashflow	Unit	30 Jun 19	30 Jun 20	30 Jun 21	30 Jun 22
Operating Cashflow	A\$m	30 Jun 19 -9.2	30 Jun 20 -9.7	30 Jun 21 86.9	30 Jun 22 117.9
Income Tax Paid	A\$m	-3.2	-5.7	0.0	-12.2
Interest & Other	A\$m	-4.4	-15.7	-21.0	-12.2
Operating Activities	A\$m	-13.6	-25.4	66.0	86.9
Property, Plant & Equip.	A\$m	-118.0	-232.0	-7.3	-3.0
Exploration and Devel.	A\$m	-4.0	-4.0	-2.8	-2.8
Other	A\$m	0.0	0.0	0.0	0.0
Investment Activities	A\$m	-122.0	-236.0	-10.1	-5.8
Borrowings	A\$m	171.6	128.9	-23.1	0.0
Equity or "tbc capital"	A\$m	164.7	0.0	0.0	0.0
Dividends Paid Financing Activities	A\$m A\$m	0.0 336.3	0.0 128.9	0.0 -23.1	0.0 0.0
Net Cashflow Shares	A\$m Unit	200.7 30 Jun 19	-132.5 30 Jun 20	32.8 30 Jun 21	81.1 30 Jun 22
Ordinary Shares - End	m	403.6	403.6	403.6	403.6
Ordinary Shares - W'ted	m	316.3	403.6	403.6	403.6
Diluted Shares - W'ted	m	316.3	403.6	403.6	403.6
Ratio Analysis	Unit	30 Jun 19	30 Jun 20	30 Jun 21	30 Jun 22
Cashflow Per Share	A\$ cps	-4.3	-6.3	16.3	21.5
Cashflow Multiple	х	-20.0x	-13.7	5.3	4.0
EV (+ cap.)/EBIT	х	-33.9x	-18.9x	6.4x	5.4x
EV (+ cap.)/EBITDA	x	-55.1x	-52.4x	4.8x	4.2x
Earnings Per Share	A\$ cps	-6.1	-10.6	14.7	15.6
	х	-14.0x	-8.1	5.8	5.5
Price to Earnings Ratio					
Price to Earnings Ratio Dividends Per Share	AUD	-	-	-	
Price to Earnings Ratio Dividends Per Share Dividend Yield	AUD %	- 0.0%	0.0%	- 0.0%	- 0.0%
Price to Earnings Ratio Dividends Per Share Dividend Yield Net Debt / Net Debt + Equi	AUD % ty %	- 0.0% -34%	57%	41%	20%
Price to Earnings Ratio Dividends Per Share Dividend Yield	AUD %	- 0.0%			

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David Archer (Technical Director)				+61 8 6	6424 844
Bruce McQuitty (Non-exec. Director)				<i>(</i> ,))	
Top Shareholders			www.sne	effieldresou	irces.con
Blackrock					6'
Colonial First State					6
Walter Yovich Reserves & Resources		Bt	Grade	Metal (Mt)	6 Attr.
Thunderbird (cut-off >3%)		3.24	6.9%	223.6	100.0%
- high grade (cut-off >7.5%)		1.09	11.9%	129.7	100.0%
- Reserve		0.68	11.3%	76.9	100.0%
Eneabba		0.30	2.2%	6.6	100.0%
- high grade McCalls		0.17 4.43	3.0% 1.2%	5.2 53.2	100.0%
Production Summary	Unit	Jun 19	Jun 20	Jun 21	Jun 2
Mill Throughput	Mt	0.00	0.00	8.50	8.5
Strip Ratio	x			0.2	0
HM grade Zircon Recovery	%			15.0% 75.0%	15.0 75.0
Total VHM production	kt			307.4	354
Zr production	kt			45.6	52
Zr concentrate				39.5	45
Leuc. / Hi-Ti production	kt			8.6 253.2	9 291
Sulph. Ilmenite production Magnetite	kt			253.2 165.9	291
Total product volumes				512.9	591
Revenue to Cost ratio	yr			2.4	2
Mine Life	Mt			54.3	53
Costs	Unit	Jun 19	Jun 20	Jun 21	Jun 2
Rev milled tonne Cost per milled tonne	\$A/t \$A/t			24.6 10.6	27. 10.
EBITDA / tonne milled ore	\$A/t			12.5	10.
C1: Operating Cash Cost = (a)	\$A/t final product			281	27
(a) + Royalty = (b)	\$A/t final product			303	29
C2: (a) + depreciation & amortisation = (c)	\$A/t final product			365	35
 (a) + actual cash for development = (d) C3: (c) + Royalty 	\$A/t final product \$A/t final product			281 387	27
(d) + Royalty	\$A/t final product			303	29
Price Assumptions	Unit	Jun 19	Jun 20	Jun 21	Jun 2
AUDUSD Ilmenite	A\$/US\$ US\$/t	0.75 193	0.76 203	0.77 204	0.7
Zircon	US\$/t	1451	1494	1481	147
Rutile	US\$/t	1010	1048	1097	113
Leucoxene	US\$/t	606	629	658	68
Avg selling price / VHM produced Sensitivity Analysis	A\$/t	-		681	66
		Valuation		Ē	Y21 NP
Base Case		1.25			59.4
Spot Prices Spot USD/AUD 0.74, Ilmenite \$175/t,Zircon 5		.58 (26.8%)		57	.0 (-4.0%
AUDUSD +/10%	0.84 / 1.73 (-32.4	% / 38.3%)	43.9 / 8	35.2 (-26.0%	6 / 43.5%
Ilmenite +/10%	1.40 / 1.10 (11.89	% / -11.9%)		55.8 (16.69	
Zircon +/10%	1.49 / 1.01 (18.99			50.6 (25.4%	
Rutile +/10% Leucoxene +/10%	1.25 / 1.25 (0. 1.27 / 1.22 (1.9			5 / 62.5 (5.3 2 / 61.8 (6.5	
Operating Costs +/10%	1.02 / 1.47 (-18.4			71.2 (-9.4%	
Unpaid Capital				,	
Year Expires No. (m) \$m	Avg price	% ord			
30-Jun-19 1.9 1.5	0.81	1%			
30-Jun-20 7.0 2.7 30-Jun-21 4.1 2.1	0.39 0.50	3% 2%			
30-Jun-22 2.4 0.0	0.00	1%			
30-Jun-23 0.0 0.0	0.00	0%			
TOTAL 15.4 6.3	0.41	7%			
Valuation			Êm	/ohr	
100% Eneabba (pre-tax NAV at disc. rate of	12%)		\$m 0	/shr 0.00	
100% Thunderbird (pre-tax NAV at disc. rate			637	1.52	
100% McCalls (pre-tax NAV at disc. rate of 1	14%)		0	0.00	
Other Assets/Exploration			50	0.12	
Forwards			0 -70	0.00	
Corporate Overheads Net Cash (Debt)			-70	-0.17 0.05	
Tax (NPV future liability)			-121	-0.29	
			-121 5	-0.29 0.01 1.26	

Analyst: Trent Barnett +61 8 9268 3052 "tbc capital" could be equity or debt. Our valuation is risk-adjusted for how this may be obtained. Sources: IRESS, Company Information, Hartleys Research

Last Updated: 26/07/2018

Fig. 2: Price	change	e assu	mptior	าร										
Assumptions for valuations														
	Unit	Spot	FY19e	FY20e	FY21e	FY22e	FY23e	Long run	FY19e	FY20e	FY21e	FY22e	FY23e	Long run
			yr avg	assump.	yr avg	yr avg	yr avg	yr avg	yr avg	assump.				
US\$/A\$	/A\$	0.742	0.75	0.76	0.77	0.78	0.78	0.77	-1.4%	-0.6%	-0.1%	0.9%	0.5%	-1.9%
Zircon (US\$)	/tonne	1,450	1,451	1,494	1,484	1,475	1,415	1,234	20.9%	21.9%	18.1%	15.2%	14.5%	15.4%
Zircon (A\$)	/tonne	1,953	1,938	1,969	1,932	1,883	1,804	1,613	22.7%	22.7%	18.3%	14.2%	13.9%	17.7%
Rutile (US\$)	/tonne	1,000	1,010	1,048	1,081	1,128	1,121	1,031	14.7%	8.0%	3.3%	3.4%	3.6%	4.9%
Rutile (A\$)	/tonne	1,347	1,348	1,381	1,407	1,440	1,430	1,348	16.4%	8.6%	3.4%	2.4%	3.1%	7.0%
Ilmenite (US\$) Ilmenite (A\$)	/tonne /tonne	175 236	193 258	203 268	203 265	204 261	201 256	188 246	4.3% 5.8%	9.9% 10.6%	10.0% 10.1%	10.4% 9.4%	8.5% 8.0%	1.6% 3.6%

Source: Hartleys Research Estimates

PRICE TARGET

Our price target is \$1.47 (from \$1.02 previously).

Fig. 3: SFX price target

Price Target Methodology	Weighting	Today	12 mth out
NPV12 base case prices	70%	\$1.26	\$1.43
NPV12 at spot commodity and fx prices	10%	\$1.58	\$1.80
Takeover (20% disc. to NPV, no more dilution)	5%	\$1.26	\$1.44
8.0x FY20 (EV + capital) / EBIT Stage 1	3%	\$1.03	\$1.03
8.0x FY25 (EV + capital) / EBIT Stage 2	3%	\$2.71	\$2.71
NPV8 base case prices	5%	\$1.94	\$2.13
Net cash backing	4%	\$0.10	\$0.10
Risk weighted composite		\$1.32	
12 Months Price Target		\$1.47	
Shareprice - Last		\$0.860	
12 mth total return		71.4%	

Source: Hartleys Estimates

Assumption	Risk of not realising assumption	Downside risk to valuation if assumption is incorrect	Comment
First production in late CY20 or Thunderbird	High	Moderate	This appears reasonable provided funding is arranged.
Zircon prices rise, ilmenite prices flat	Moderate	Significant	There is a wide dispersion of consensus price forecasts at the moment.
55 year mine life	Moderate to high	Moderate	Seems reasonable given very large resource. W have a high strip ratio assumption in outer years and hence impact on valuation is low
Capex for Thunderbird is 5:35 debt/equity	Moderate	Moderate	With the conditional debt package with Taurus now agreed, and mineral sands prices improving the financing risk appears to be diminishing.
Dperating costs	Moderate	Moderate	We assume operating costs in line with the BFS
No sell down in project interest o help fund capex	High	Upside	We assume SFX funds the equity component with new equity. We also have a scenario whereby there is a sell down
Nodest value for other projects	High	Upside	Our valuation is overwhelmingly base on the Thunderbird project. With rising commodity price the other development assets could be valuable

Source: Hartleys

EV/EBITDA BANDS



Source: Hartleys Estimates, IRESS



Source: Hartleys Estimates, IRESS

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Hartleys Recommendation Categories

Buy Accumulate	Share price appreciation anticipated. 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 /	It is anticipated to be unlikely that there will be gains over
Take profits	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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