

15 December 2022

## Element 25 Limited (E25)

**Buy**

**Share Price: A\$1.04**

### Strategic value in ex-China manganese

**Target Price:**

**A\$3.79**

E25 is a manganese concentrate producer via its Butcherbird project in WA. It plans to upgrade the value of its concentrate by building a battery quality manganese plant, with FID early next year. The macro outlook for manganese is strong and underpinned by the decarbonisation of vehicles and energy systems. Additionally, the US Inflation Reduction Act has placed an economic incentive for customers to use non-China manganese, difficult in a market dominated by China (Figure 2). We maintain our Buy on an improved A\$3.79/sh price target (prev. A\$3.60/sh).

#### Company Data

Shares – ordinary (M)	184
Market capitalisation (\$M)	191
12 month low/high (\$)	0.43/ 1.71
Average monthly turnover (\$M)	15.1
GICS Industry	Metals & Mining

### 95% of battery grade manganese produced in China

#### Financial Summary (fully diluted/normalised)

Year end June	2022A	2023F	2024F	2025F	2026F
Revenue (\$M)	27.3	49.9	166.8	240.2	290.3
Costs (\$M)	42.9	45.2	96.3	134.4	152.1
EBITDA (\$M)	-15.6	4.7	70.5	105.8	138.2
NPAT (\$M)	-17.6	4.6	52.7	67.1	83.1
EPS (¢ps)	-11.7	2.6	28.7	36.5	45.2
EPS growth (%)	62.8	552.1	1003.6	27.2	23.8
PER (x)	-8.9	40.0	3.6	2.9	2.3
Op. Cashflow (\$M)	-19.5	5.8	68.2	70.0	101.1
OCFPS (¢ps)	-13.1	3.9	45.9	47.0	67.9
POCFPS (x)	-8.0	26.9	2.3	2.2	1.5
Enterprise Value (\$M)	140	116	188	273	180
EV / EBITDA (x)	-9.0	24.8	2.7	2.6	1.3
Payout ratio (%)	0.0	0.0	0.0	0.0	0.0
Dividends (¢ps)	0.0	0.0	0.0	0.0	0.0
Yield (%)	0.0	0.0	0.0	0.0	0.0
Franking (%)	0.0	0.0	0.0	0.0	0.0

- Manganese is the cheapest and most abundant of the NMC cathode materials (nickel, manganese and cobalt). NMC make up the majority of battery designs
- Nippon Denko in Japan and Vibrantz Technologies in Belgium are the only ex China suppliers of battery quality manganese, representing a 5% market share
- Both use imported ores and with supply chain security in focus, we see strategic value in E25's integrated business model (Figure 2)
- E25's maiden 65ktpa line could satisfy 8% of global battery quality manganese demand when it starts in 2025, falling to 2% by 2030 as the market grows

### Offtake discussions ongoing, news near term

- E25 is expected to advance offtake discussions with an agreement by the end of the year, likely in the USA
- The company is targeting a combined offtake/finance solution with OEM and cathode manufacturers
- This could provide the bulk of the capital required to construct a battery quality manganese facility

### Changes to our forecasts

- We incorporate the recent A\$35m raising at A\$1.12/sh in our forecasts (we had assumed A\$40m at A\$0.80/sh)
- The funds allow E25 to invest in its Butcherbird plant to lower costs and increase throughput, while continuing to advance its battery manganese division
- We have increased capex for the battery division from US\$150m to US\$200m in line with industry inflation and increased production rates to 65ktpa from 60ktpa
- We update our AUD and Mn price as outlined in Figure 4, largely to align with the movements in spot
- Overall our NPV increases 5% to A\$3.79/sh

### Key Dates Ahead

- Dec.Q'22 – Much improved production and sales
- Mar.Q'23 – Battery manganese FS, offtake expected
- Sept.Q'25 – First production of battery grade Mn

### E25 – performance over one year



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This report must be read with the disclosure and disclaimer on the final page of this document. The analyst preparing this report has a beneficial interest in 78,044 shares in this company. Petra Capital was lead manager and bookrunner for this company's placement to raise \$35m at A\$1.12/sh on 15 November 2022, for which fees were received.

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## Analysis

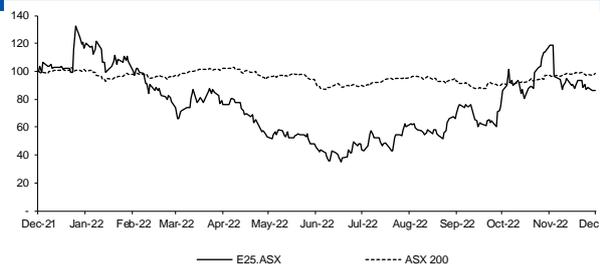
### Element 25 Limited (E25)

Year end 30 June

#### Recommendation

Price	\$	1.04
<b>Target Price (12-month)</b>	<b>\$</b>	<b>3.79</b>
Upside / (Downside)	%	265%
52 week high / low	\$	1.6 - 0.43
<b>Market capitalisation</b>	<b>\$m</b>	<b>191</b>
Shares on issue	no.	184
Options	no.	32
Shares on issue (diluted)	no.	216

#### Buy



PROFIT & LOSS	2022A	2023E	2024E	2025E	2026E
Revenue	\$M 27	50	167	240	290
Operating Costs	\$M (38)	(41)	(92)	(130)	(148)
Exploration	\$M (1)	(1)	(1)	(1)	(1)
Other	\$M (4)	(4)	(4)	(4)	(4)
<b>EBITDA</b>	<b>\$M (16)</b>	<b>5</b>	<b>71</b>	<b>106</b>	<b>138</b>
Dep. & Amort.	\$M (2)	(1)	(2)	(3)	(11)
EBIT	\$M (17)	4	69	103	127
Net Interest	\$M (0)	1	(3)	(7)	(8)
Pre-Tax Profit	\$M (18)	5	66	96	119
Tax	\$M -	-	(13)	(29)	(36)
<b>Net Profit</b>	<b>\$M (18)</b>	<b>5</b>	<b>53</b>	<b>67</b>	<b>83</b>
Abnormal	\$M -	-	-	-	-
Reported Profit	\$M (18)	5	53	67	83

CASH FLOW	2022A	2023E	2024E	2025E	2026E
Revenue	\$M 21	50	167	240	290
Costs	\$M (41)	(45)	(96)	(134)	(152)
Tax Payable	\$M -	-	-	(29)	(29)
Other	\$M 1	1	(3)	(36)	(38)
Operating Cashflow	\$M (19)	6	68	70	101
Capex	\$M (2)	(17)	(140)	(154)	(7)
Exploration	\$M -	(1)	(1)	(1)	(1)
Acquisitions	\$M -	-	-	-	-
Other	\$M -	-	-	-	-
Investing Cashflow	\$M (2)	(17)	(140)	(155)	(8)
Equity Issues	\$M 1	35	-	-	-
Debt Raised / (repaid)	\$M -	-	160	-	-
<b>Free Cashflow</b>	<b>\$M (21)</b>	<b>(11)</b>	<b>(72)</b>	<b>(85)</b>	<b>93</b>
Surplus Cash Flow	\$M (20)	24	88	(85)	93

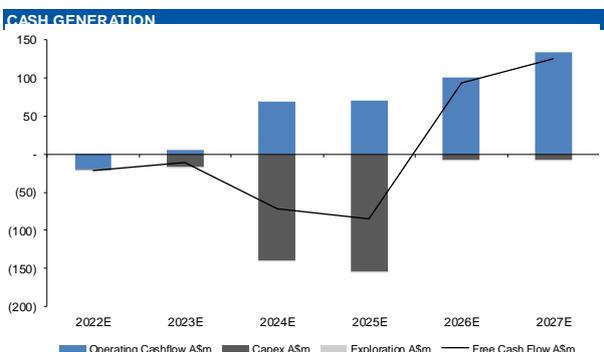
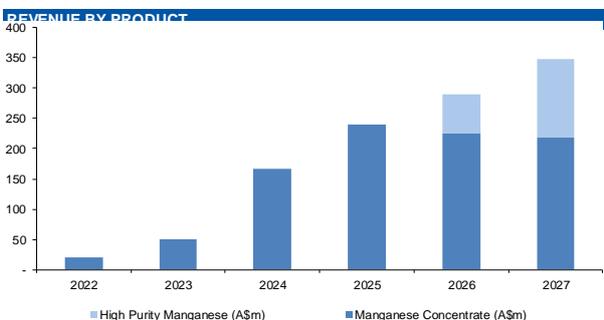
BALANCE SHEET	2022A	2023E	2024E	2025E	2026E
<b>Cash</b>	<b>\$M 15</b>	<b>39</b>	<b>127</b>	<b>42</b>	<b>135</b>
Other Current	\$M 16	16	16	45	74
Total Current	\$M 31	55	143	87	209
PP&E & Exploration	\$M 22	37	175	327	324
Other	\$M 2	2	2	2	2
Total NC Assets	\$M 24	39	178	329	326
Total Assets	\$M 55	94	320	416	535
Current Liab	\$M 8	8	8	8	8
Non Current Liab	\$M 1	1	161	161	161
Total Liabilities	\$M 9	9	169	169	169
<b>Net Assets</b>	<b>\$M 46</b>	<b>85</b>	<b>151</b>	<b>247</b>	<b>366</b>
Equity	\$M 46	85	151	247	366
Total Debt	\$M -	-	160	160	160
Net Debt	\$M (15)	(39)	33	118	25

RATIO ANALYSIS	2022A	2023E	2024E	2025E	2026E
EPS	¢ (11.7)	2.6	28.7	36.5	45.2
PER	x (8.9)	40.0x	3.6x	2.9x	2.3x
EPS Growth	% 63%	552%	1004%	27%	24%
EV/EBITDA	x (11.3)	32.6x	3.2x	2.9x	1.6x
<b>EVOCF</b>	<b>x (9.1)</b>	<b>26.5x</b>	<b>3.3x</b>	<b>(8.5)</b>	<b>(5.8)</b>
FCFPS	¢ (11.4)	(6.1)	(39.2)	(46.1)	50.7
<b>FCF Yield</b>	<b>% (11%)</b>	<b>(6%)</b>	<b>(38%)</b>	<b>(44%)</b>	<b>49%</b>
DPS	¢ -	-	-	-	-
Yield	% -	-	-	-	-
Franking	% -	-	-	0%	0%
Payout Ratio	% -	-	-	-	-
Gearing D/E	% -	-	106%	65%	44%
Interest Cover	x (221)	n.m.	24	14	15
<b>EBITDA Margin</b>	<b>% (57%)</b>	<b>9%</b>	<b>42%</b>	<b>44%</b>	<b>48%</b>
EBIT Margin	% (64%)	8%	41%	43%	44%
Return On Assets	% (81%)	11%	39%	32%	39%
Return On Equity	% (38%)	5%	35%	27%	23%
Eff Tax rate (cash tax)	% -	-	-	30%	30%

ASSUMPTIONS	2022A	2023E	2024E	2025E	2026E
A\$/US\$ exchange rate	\$ 0.73	0.67	0.70	0.73	0.75
Mn Conc ref price (44%)	US\$/dmu 5.83	5.53	5.98	6.20	6.20
Realised Mn price	US\$/dmu 3.24	3.98	5.00	5.22	5.22
Realised Mn conc price	US\$/t 94	123	166	173	173
High Purity Mn price	US\$/t 1,725	1,950	1,950	1,950	1,950

BUTCHERBIRD MINE LIFE	Contained Mn	Grade (%)	Years
Reserves	4.3	10%	13
Resources	21.6	10%	65
<b>Petra Mining Inventory</b>	<b>6.0</b>	<b>10%</b>	<b>20</b>

PRODUCTION & COSTS	2022A	2023E	2024E	2025E	2026E
Tonnes processed	Mpa 0.9	1.1	2.7	3.9	3.9
Grade	g/t 10.8%	10.3%	10.3%	10.3%	10.3%
Recovery	% 77%	79%	83%	83%	83%
Mn Conc Production	kt 224	276	702	1,007	1,007
<b>Mn Conc Sales</b>	<b>kt 162</b>	<b>271</b>	<b>702</b>	<b>1,007</b>	<b>977</b>
Operating Costs	US\$/t 104	98	92	93	95
HP Mn Sales	kt -	-	-	-	25
Operating Costs	US\$/t -	-	-	-	800

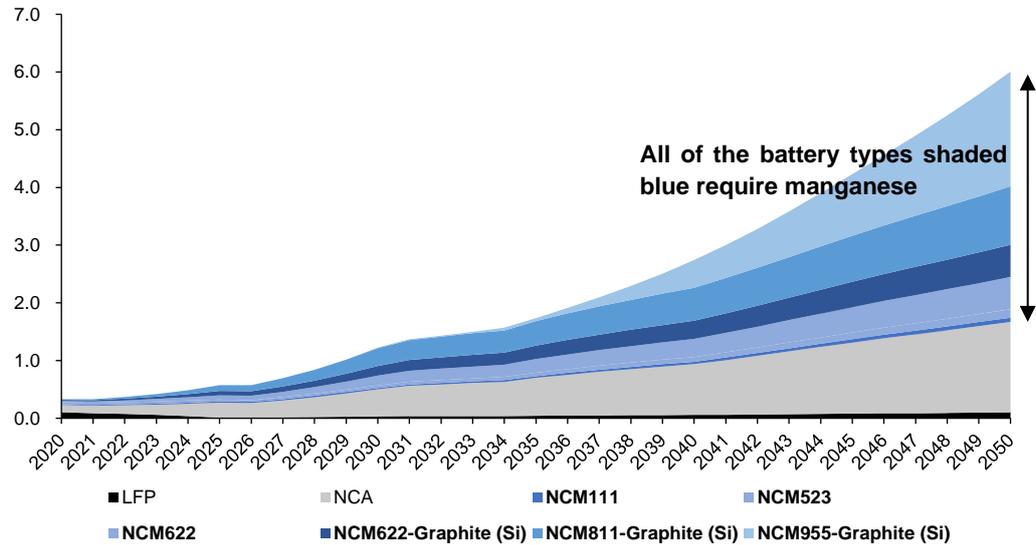


VALUATION (10% discount rate)	A\$m	A\$/Sh	%
Butcherbird Manganese Conc	448	2.08	
High Purity Manganese	371	1.72	
Exploration	10	0.05	
Net Cash	28	0.13	
Corporate	(38)	(0.18)	P/NPV
<b>Group NPV</b>	<b>818</b>	<b>3.79</b>	<b>0.27</b>

## How does manganese fits into battery chemistry?

Manganese is the cheapest and most abundant of the NMC cathode materials (nickel, manganese and cobalt). These cathodes make up the majority of battery designs (Figure 1).

**Figure 1: EV battery capacity by type (TWh) – Manganese is in most cathodes**



Source: Future material demand for automotive lithium-based batteries - Chengjian Xu, Qiang Dai, Linda Gaines, Mingming Hu, Arnold Tukker & Bernhard Steubing

Given supply and cost constraints with Nickel and Cobalt, automakers have been looking to increase manganese content where possible. For example, VW is moving to a high manganese cathode for most of its vehicles. In China, lithium-iron-phosphate batteries dominate market share. Battery behemoth CATL announced that with the addition of manganese, its LMFP batteries will have 15-20% higher energy density, at a similar price point to its LFP offering ([link](#)).

Given its relative abundance vs. competing materials, we believe manufacturers could favour high purity manganese sulphate in their battery chemistry. E25 is well positioned with its targeted entry into this market from 2025.

## China produces 95% of the worlds battery grade manganese

Nippon Denko in Japan and Vibrantz Technologies in Belgium produce a small quantity of high-purity manganese sulphate using imported ore (Figure 2). Combined these two facilities produce around 5% of the global high-purity manganese sulphate supply.

The Inflation Reduction Act that was passed this year in the United States provides tax credits on the sales of electric vehicles. To obtain the credit, batteries must be made with a certain percentage of the value of critical minerals be mined or processed in the US or in a country with which it has a Free Trade Agreement. In addition, there are restrictions on minerals or components from China. This has led to increased customer interest in manganese that is produced outside of China.

E25 believes it can secure offtake agreements in the coming months to underpin production facilities either in Malaysia or Louisiana. Given the strong economics outlined in recent feasibility studies, the offtake should be the last piece required for project financiers.

**Figure 2: Only two companies outside of China produce battery quality manganese**



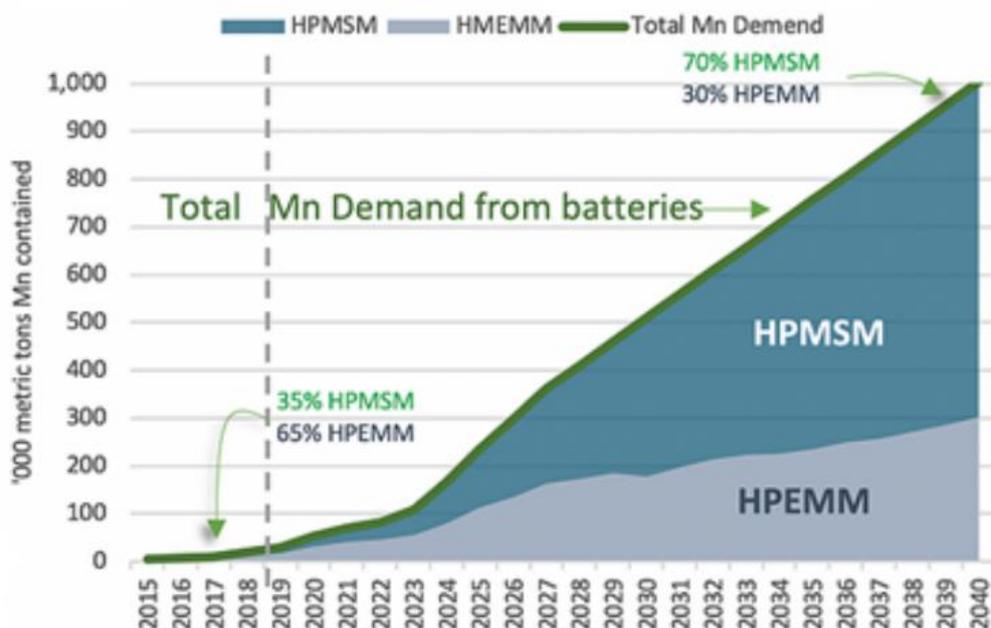
Source: Benchmark Mineral Intelligence

### Plenty of manganese units, not enough upgrading facilities

The global manganese market is circa 20mtpa of contained manganese, with 90% of demand coming from steel markets. Battery quality manganese is a miniscule portion of this market but is expected to grow materially to 1mtpa by 2040 (Figure 3). Unlike some other battery materials, manganese doesn't require a material increase in mining, but does require significant investment in upgrading facilities.

With existing non-China sources using imported ores and supply chain security increasingly a focus from customers, we see strategic value in E25's integrated business model. E25's business plans are advanced and well placed to take a first mover advantage.

**Figure 3: Manganese demand from Li-ion batteries**



Source: Company Reports

**Figure 4: Summary of changes**

		2023			2024			2025		
		New	Old	% var	New	Old	% var	New	Old	% var
Revenue	A\$m	50	54	(7%)	167	159	5%	240	232	4%
EBITDA	A\$m	5	8	(38%)	71	63	12%	106	98	8%
EBIT	A\$m	4	7	(41%)	69	62	12%	103	95	8%
NPAT	A\$m	5	7	(38%)	53	48	9%	67	65	4%
<b>NPV/sh</b>	<b>A\$/sh</b>	<b>3.79</b>	<b>3.60</b>	<b>5%</b>						
Mn conc prod	kt	276	280	(2%)	702	702	-	1,007	1,007	-
Op costs	US\$/t conc	98	107	(8%)	92	98	(6%)	93	96	(3%)
AUDUSD	x:x	0.67	0.72	(8%)	0.70	0.75	(7%)	0.73	0.75	(3%)
Price	US\$/t conc	123	140	(13%)	166	170	(2%)	173	173	0%

Source: Company reports, Petra Capital

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