

Highlights

Operational Optimisation Continues

- Throughput improvements continue, **record daily production of 1,209 tonnes** for concentrate produced on 3 January 2022.
- Plant production bottlenecks remain around three areas – clay content of ore, plant uptime, and plant throughput.
- Identified and procured new equipment to **improve comminution material handling** and mitigate clay content issues – installation in progress.
- Ore-sorter performance shows potential to exceed nameplate throughput rates.
- Preventative maintenance and operational procedure optimisation now the final hurdles to achieve plant uptime and throughput targets for nameplate production.
- Optimisation of geological procedures progressing to maximise product grades.
- **Expansion studies** considering a DMS alternative/adjunct to improve grade and recoveries.



Manganese Price Increases Offset Shipping Costs

- Manganese ore prices at **cyclical highs of over \$8.00/dmtu** for 44% cif China material (Reference: Petra Capital).
- Under offtake terms this will flow through to higher prices for future E25 cargoes which are factored from a 44% benchmark price (Reference: ASX Announcement 28 January 2021).

Robust Scoping Study Delivered for HPMSM Project

- Compelling NPV and a healthy Internal Rate of Return (IRR).
- Three stages of development modelled on a southeast Asian site. Further expansion expected to follow.
- Study confirms that a HPMSM Project represents a **long life, low operating cost opportunity**.
- Multiple inquires received in relation to supplying **high quality, low-carbon cathode grade MnSO₄**.
- Offtake discussions with **multiple Asian and European end users** progressing.

COMPANY SNAPSHOT

Market Summary

ASX code:	E25
Shares on issue:	153M
Share price:	\$0.845

Board of Directors:

Seamus Cornelius	Chairman
Justin Brown	MD
John Ribbons	NED

Element 25 Limited is developing the world class Butcherbird Manganese Project in Western Australia to produce high quality manganese concentrate and high purity manganese products for traditional and new energy markets.

Element 25 Limited (E25 or Company) (ASX: E25) is pleased to provide an update on operational and corporate activities completed from across the business during the three-month period ended 31 March 2022.

Operations continued at the Company’s 100% owned **Butcherbird Manganese Project (Project)** in Western Australia, highlighted by strong daily production numbers in early January 2022 following several planned updates to the Butcherbird processing facility. Throughput and production volumes remain a priority and good progress has been made to identifying the areas for improvement, particularly around the primary comminution circuit where clay continues to be a challenge.

Commenting on the March quarter, E25’s Managing Director Justin Brown said: *“We continued to advance key operational objectives during the quarter, with a particular focus on improving the performance of our Butcherbird Processing Plant. Following the implementation of several processing plant modifications in late last year, our processing team delivered record daily production numbers in early January and the aim now is to maintain those production rates on a continuous basis.*

Equally importantly, our team delivered a compelling HPMSM plant scoping study which was reported in January which outlined a low operating cost, long-life High Purity Manganese Sulphate Project with compelling economics. This study provides a glimpse into the potential for the Company’s HPMSM strategy with further news-flow expected in the coming quarter.

Part of our global strategy is to be a leader in not only delivering high quality manganese materials for traditional and new energy markets but also materials with industry leading ESG credentials and to this end, E25 was pleased to announce a collaboration with Circular to develop the first ESG transparent manganese supply chain”

Butcherbird Operational Summary

In January 2022, the Company reported that plant production volumes had improved since re-commissioning of the plant in December 2021, with a **new daily production record of 1,209 tonnes** being achieved on 3 January 2022, well above the target nameplate production of 1,000 tpd for the Stage 1 production plant.

Production Summary	March 2022 Qtr.	December 2021 Qtr.
Mined Ore Tonnes	224,490	208,157
Product Tonnes	51,288	32,348
Increase/Decrease	+18,940	
Closing Stockpiles	26,164	8,973
Increase/Decrease	+17,191	

Figure 1. Butcherbird Production Summary

The plant process continues to confirm the test-work that has underpinned the design, and E25 is of the view that with simple improvements to operating systems and process flows can resolve these throughput challenges.

There are three target areas which are being addressed to de-bottleneck the process:

1. Boggging due to clays resulting in restricted throughput over the grizzly located in front of the primary jaw crusher.
2. Plant uptime operating below a target of 85%, primarily due to issue around unexpected equipment failures.
3. Sub-optimal ore-sorter performance resulting in elevated dilution which reduces grade and payability.

Each of these areas has been analysed in detail and in each case, solutions are readily available and low cost. In summary each of these areas is being addressed as follows:

1. The ROM has been redesigned to provide for the sub 65mm material to bypass the jaw crusher, eliminating the need for the grizzly and reducing the load on the jaw crusher and the risk of unplanned outages due to blockages.
2. A maintenance planning consultant is working to improve the maintenance planning function and shift outages from multiple, unplanned outages to fewer, planned maintenance shut-downs where preventative maintenance can be undertaken resulting in improved uptime and allowing the equipment to be operated at closer to design conditions.
3. Improvements in sorting algorithms and material presentation to provide for better sorting effectiveness and a reduction in dilution.

In addition to these steps, work continues in relation to the expansion plan. Data gathered since commissioning will inform and optimise the design decisions before commencing procurement of new equipment to increase production towards a planned 1M tpa expanded case. Permitting for the expanded case is also in progress.

This includes design work around a more permanent and resilient comminution circuit, decisions around screen configurations log-washer sizing and trade off analysis between expanding ore-sorter capacity versus installing a dense media circuit to perform the final beneficiation step.

Mining has and continues to perform to planned production rates with current equipment showing sufficient capacity to meet the immediate and medium-term production requirements. The free-dig mining method continues to ensure operating costs in line with forecasts. No bottlenecks are foreseen in this area.



Figure 2. Scalper being prepared for mobilisation.

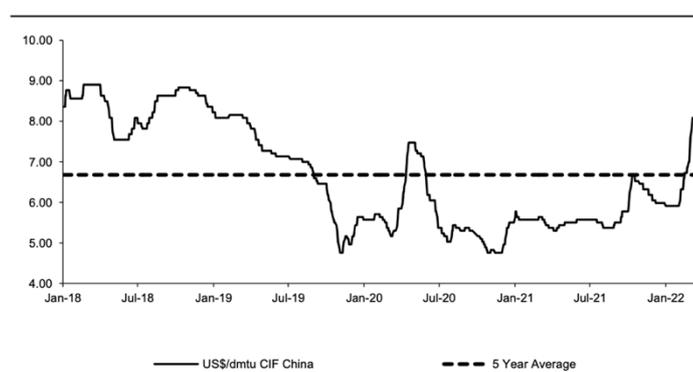
Staff Shortages and Elevated Freight Rates

Shipping costs remain at elevated levels, although they have improved somewhat since the peak of COVID impacts. Market observers expect rates to continue to normalise as world markets recover from the COVID related supply chain disruptions.

Labour markets in Western Australia continue to be very tight which has impacted on the Company’s ability to recruit sufficient skilled labour to fully complement the required rosters. This is an effect felt across the industry, large companies and small¹.

Recent easing of restrictions has resulted in some improvement, with staffing levels approaching target numbers, and with further easing expected, it is hoped that this trend will continue.

Manganese Prices



Source: Asia Metal, Petra Capital

Global supply chain and other disruptions have resulted in cost pressures on all manganese ore producers with customers markets in China and this has put upward pressure on ore prices.

According to recent data from Asia Metal and Petra Capital, recent benchmark pricing for 44% manganese grade material cif China has exceeded \$8/dmtu, a cyclical high. This will have a positive impact on received pricing

for E25 and could significantly impact cashflows as production increases with the continued production improvements at site. Under the terms of the offtake agreement with OM Materials (S) Pte Ltd (OMS), subsidiary of ASX-listed company OM Holdings Limited (ASX:OMH) (OMH)² cargo pricing is set by a formula based on the 44% cif China price.

HPMSM Plant Scoping Study

MnSO₄
50,000 t/a
 expanding to 150ktpa over three expansion stages

\$1.52 billion
 NPV₈ post-tax

\$200 million
 capital cost including working capital

December 2024
 commissioning scheduled

¹ <https://www.afr.com/companies/mining/driver-shortage-threatens-bhp-iron-ore-exports-20210529-p57waf>

² Reference: Company ASX release dated 28 January 2021

In January 2022, E25 reported that a Scoping Study (Study) into the construction and operation of a High Purity Manganese Sulphate Monohydrate (HPMSM) plant has returned a robust set of financial metrics over a 20-year project life. The project is strongly leveraged to the emerging Electric Vehicle (EV) industry. EV's typically use lithium-ion batteries for energy storage and battery cathode materials contain HPMSM³.

High Purity Manganese, also known as battery grade manganese, is purchased by cathode and battery manufacturers in either a metal or sulphate form. More specifically, High Purity Electrolytic Manganese Metal (HPEMM) or HPMSM.

HPEMM is a 99.99% of contained manganese, low impurity metal and HPMSM is a pale pink inorganic compound with typically 32% contained manganese. The chemical symbol of this low impurity salt is MnSO₄·H₂O. High Purity Manganese is used in lithium-ion battery cathodes, specialty steels, aluminium, and chemicals.

The forecast demand for high purity manganese is heavily skewed towards HPMSM, with new capacity coming online demanding HPMSM, not HPEMM.

The Study assumed that the Project will be built in an industrial park located in southeast Asia, leveraging local low cost of power and the local supply of process reagents. A final site has not yet been determined and this will be further considered in the definitive Feasibility Study (FS)

The HPMSM Project includes the construction of a HPMSM conversion plant as well as supporting administrative, packaging and laboratory facilities. The site will most likely be located on an industrial park, near a deep sea, bulk cargo port and will most likely have established water, power and communications facilities.

The Company is moving directly into a definitive Feasibility Study (FS) for the development of a HPMSM project and expects that study to be finalised in the second half of 2022. Marketing and offtake discussions are occurring in parallel and discussions are underway with a number of Tier 1 Asian and European end users of battery grade manganese sulphate.

Full details on the HPMSM Scoping Study are available in the ASX announcement dated 18 January 2022.

 <p>Mn²⁵ 95-98% Recovery Repeatable high recoveries and fast kinetics in leach tests</p>	 <p>Waste Volumes Reduction (~50%) in waste production simplifies plant, lowers costs.</p>	 <p>Reagent Usage Significant reduction in reagent consumption reduces operating costs.</p>	 <p>Leach Selectivity Fe & Si selectivity improves repurposing options and environmental outcomes.</p>
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³ Reference: ASX Release dated 18 January 2022.



Figure 3. The Feasibility Study into the conversion of Butcherbird manganese concentrate into HPMSM is considering a number of potential locations in line with areas of strong forecast demand growth⁴.

Circular Partnership Strengthens Zero Carbon Manganese Focus

In February 2022, E25 entered a collaborative partnership with Circular Ltd (**Circular**) to establish full manganese traceability and dynamic tracking of CO₂, environmental, social and governance (ESG) standards for products produced from the Project.

The tracking and tracing will include the current manganese concentrate products, as well as the planned production of **HPMSM** battery materials that will be manufactured through the downstream processing of Butcherbird manganese concentrate.

Globally, there is increasing awareness about the impacts associated with extractive industries, including the supply of

Element 25
Manganese Sulphate
ESG metrics summary, January 2025

This is a digital summary of the ESG metrics attributed to the Manganese products received from Element 25 (ACN 119 711 929).

BAG IDENTIFICATION ID#1437847

Your product has been tracked using Circular's blockchain traceability platform, including relevant Element 25 ESG metrics and product specifications.

ESG METRICS AND SPECIFICATIONS

Weight	1t
Carbon intensity (t CO ₂ -e / t)	5.5t
Metal content	32%

Production Timeline:

- 01 Jan, 2025: HPMSM Refinery
 - HPMSMR_1004000 - Goods-Out
 - HPMSMR_1003000 - End-Of-Production
 - HPMSMR_1002000 - Start-Of-Production
 - HPMSMR_1001000 - Goods-In
- 21 Dec, 2024: Mine
 - MN_1001000 - Goods-Out

⁴ Reference: ASX Release dated 7 April 2022.

raw materials that are key to meeting growing demand for critical minerals in Lithium-ion batteries industry and electric vehicles. End users are increasingly requiring greater traceability and precise carbon accounting for their supply chain inputs. E25’s partnership with Circular plays a critical role in the Company demonstrating traceability and ESG compliance for its manganese products.

Further details on the partnership with Circular are available in the ASX announcement dated 2 February 2022.

Exploration Drilling

A number of exploration RC drillholes were completed during the quarter. Assays are pending and will be reported when they become available, expected in June 2022. In total, 34 holes were drilled for 904m.

The drilling was targeting extensions to the known manganese mineralisation as well as sterilising potential infrastructure locations as part of the planning for the proposed expanded production case.

E52/2350	
No Holes	22
Total m Drilled	610
Metres Sampled	600
E52/3606	
No Holes	12
Total m Drilled	294
Metres Sampled	288
Total	
No Holes	34
Total m Drilled	904
Metres Sampled	888

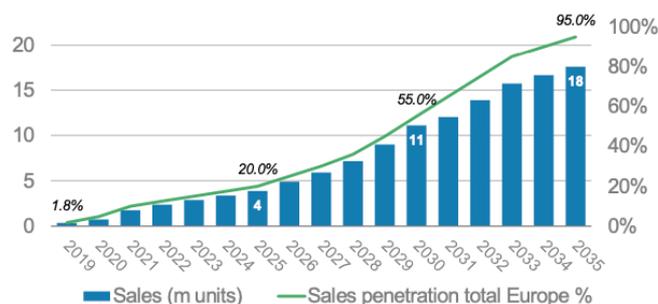
Table 1. Exploration drilling summary

Project team focus

E25’s Business Development team is focussing on the next stages of the multi-stage development strategy, including a Stage 2 expansion of the concentrate business followed by a Stage 3 development to convert the concentrate material into HPMSM for electric vehicle EV batteries to power the global transition away from fossil fuel powered mobility.

Manganese is emerging as an increasingly important

ingredient for EV batteries, with potential supply constraints for nickel and cobalt forcing battery manufacturers to look to high manganese cathodes to produce the vast amount of cathode material required by the EV industry in coming years⁵.



Source: ACEA, Morgan Stanley Research estimates

Table 2. Europe BEV sales volumes (m) and penetration (%)

⁵ <https://thenextavenue.com/2021/01/22/svolt-opens-orders-for-its-nmx-nickel-manganese-batteries/>

The Project is ideally placed to feed this potential demand, with advanced flowsheet development work undertaken in 2019 and 2020 confirming a simple leach process for E25 ores which, when combined with offsets, will target the world's first Zero Carbon Manganese™ for EV cathode manufacture⁶.

Battery EV Penetration Rate Forecast to Increase Further

As battery electric vehicle (BEV) makers seek to increase the uptake of electric vehicles, one commercial driver is cost



reduction. VW's Power Day suggested a 50% cost reduction for batteries with cell design (-15%), production process (-10%), cathode/anode materials (-20%) and battery systems (-5%) driving the change. Global BEV penetration is expected to rise to 15.2% by 2025 and 39.5% in 2030 – led by Europe and China, according to Morgan Stanley's latest report⁷. The main driver in the cathode materials is a shift to a high manganese cathode material for the volume production, which is expected to underpin strong demand growth for battery-grade manganese sulphate. Current estimates put demand by 2030 at 13 times current supply and a deficit of 1.3Mt even factoring in planned supply increases⁸.

⁶ Reference: Company ASX release dated 12 February 2019.
⁷ Morgan Stanley Research published 3 September 2021
⁸ Euromanganese company presentation dated September 2011

About the Butcherbird Manganese Project

E25's Butcherbird Manganese Project is a world-class manganese resource with current JORC resources of more than 263Mt of manganese ore⁹. In May 2020, the Company completed a Pre-Feasibility Study (PFS)¹⁰ with respect to developing the deposit to produce manganese concentrate for export to generate early cashflow with a modest capital requirement¹¹. Stage 1 of the Project development plan is complete and E25 has commenced shipping ore to offtake partners.

The PFS also highlighted the Project's potential for significant growth beyond the initial Stage 1 production volumes (the studies examined the potential for a 2X and 3X expansion to Stage 1 within 12 months of initial commissioning), and the Company expects to expedite the expansion of the Project in 2H FY2022.

In addition to the concentrate export business, the Company has completed extensive research and development and laboratory test work into the production of high purity manganese products including battery grade manganese sulphate (HPMSM) and High Purity Electrolytic Manganese Metal (HPEMM). The work has highlighted that the Butcherbird ores are amenable to an ambient temperature, atmospheric pressure leach process, resulting in a very efficient extraction of the manganese into solution, the key requirement for the cost effective and sustainable production of HPMSM and HPEMM. The Project straddles the Great Northern Highway and the Goldfields Gas Pipeline, providing turnkey logistics and energy solutions. The Company plans to integrate renewable energy into the power solution over time to target a zero-carbon footprint for the Project, which is expected to also reduce energy costs. A cleaner, lower carbon flowsheet and high penetration renewable energy will place Butcherbird at the forefront of sustainable high purity manganese production.

Mineral Resources

Category	Tonnes (Mt)	Mn (%)	Si (%)	Fe (%)	Al (%)
Measured	16	11.6	20.6	11.7	5.7
Indicated	41	10.0	20.9	11.0	5.8
Inferred	206	9.8	20.8	11.4	5.9
Total	263	10.0	20.8	11.4	5.9

Notes:

- Reported at a 7% Mn cut-off for the Measured and Indicated categories and an 8% Mn cut-off for the Inferred categories.
- All figures rounded to reflect the appropriate level of confidence (apparent differences may occur due to rounding)

⁹ Reference: Company ASX release dated 17 April 2019.

¹⁰ Reference: Company ASX release dated 19 May 2020.

¹¹ Reference: Company ASX release dated 3 December 2020

Mining Reserve

Based on the results of the Pre-Feasibility Study completed in May 2020, E25 has published a Maiden Ore Reserve for the Project of 50.55Mt in the Proved and Probable categories¹².

Classification	Tonnes (Mt)	Grade (Mn%)	Contained Mn (Mt)	Recovered Mn (Mt)
Proved	14.4	11.5	1.65	1.35
Probable	36.2	9.8	3.56	2.92
Total	50.6	10.3	5.21	4.27

Corporate

Appointment of Joint Chief Financial Officer and Joint Company Secretary

Subsequent to the end of the quarter, the Company announced the appointment of Mr Errol Turner and Mr Michael Jordon as Joint Chief Financial Officer and Joint Company Secretary, effective 4 April 2022. Mr Errol Turner and Mr Michael Jordon have been appointed to replace Ms Melissa Chapman and Ms Catherine Grant-Edwards.

Mr Turner has over 30 years' experience as a key executive across a broad range of companies and industry sectors. He has held positions of Chief Executive Officer and Chief Financial Officer/Company Secretary. Over the period he has led pre IPO and IPO's particularly in the technology sector and has worked internationally in Europe, North America and the USA, responsible for the establishment of new offices, acquisitions, legal, banking and taxation matters.

Mr Jordon has over 25 years' experience across many industries with a focus on manufacturing and service delivery sectors. He has most recently held positions of Chief Financial Officer and Chief Operating Officer. He has been responsible for business start up development, merger and acquisition and business financing activities across Australia, Europe and America.

E25 Investor Presentation at Battery Minerals Conference

Post quarter end, Managing Director Justin Brown presented at the Battery Minerals Conference which was held between the 6th-7th April 2022 at the Pan Pacific Hotel in Perth. A copy of the presentation delivered at the conference was lodged on the ASX platform on 7 April 2022.

¹² Reference: Element 25 Limited Reserve Statement lodged with ASX 19 May 2020.

Investment Portfolio (as at 31 March 2022)

In addition to cash reserves, the Company also currently holds securities in the following listed entities:

Listed securities at market value:	No. Held	Closing Price	Market Value
Anova Metals Ltd (ASX:AWV)	7,000,000	\$0.015	\$105,000
Buxton Resources Ltd (ASX:BUX)	356,001	\$0.105	\$37,380
Duketon Mining (ASX:DKM)	1,450,000	\$0.49	\$710,500
Danakali Limited (ASX:DNK)	6,001,331	\$0.30	\$1,800,399
Total			\$2,653,279

Justin Brown

Managing Director

Company information, ASX announcements, investor presentations, corporate videos and other investor material in the Company's projects can be viewed at: <http://www.element25.com.au>.

ASX Additional Information

The ASX Appendix 5B quarterly report covering the 3-month period from 1 January 2022 to 31 March 2022 is attached to and lodged with this report. The company recognised revenue of \$4,007k from its fourth shipment of manganese concentrate. Exploration and evaluation expenditure was \$2k, associated with tenement compliance costs. Mining development activities totalled \$589k, predominately associated with stage 2 expansion plan costs. Production costs, including mining, processing, haulage, port, royalties, and site administration, totalled \$8,352k. Staff costs in the quarter totalled \$915k. Corporate and administration expenses totalled \$513k. The Company received government tax incentives of \$404k in the quarter. Net cash outflows from investing activities were \$239k for expenditure on processing plan engineering modifications and upgrades. Net cash outflows from financing activities were \$5k for expenditure on costs associated with issues of equity securities.

Appendix 5B Quarterly Report and Statement of Cash Flows

The ASX Appendix 5B quarterly report covering the threemonth period ending 31 March 2022 is attached and lodged with this report.

Payments to Related Parties and their Associates

In accordance with ASX Listing Rule 5.3.5, payments to related parties of the Company and their associates during the quarter totalled \$96,000.

Competent Persons Statement

The company confirms that in the case of estimates of Mineral Resource or Ore Reserves, all material assumptions and technical parameters underpinning the estimates in the market announcements dated 17 April 2019 and 19 May 2020 continue to apply and have not materially changed. The company confirms that the form and context in which the competent person's findings are presented has not been materially modified from the original market announcements.

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Justin Brown who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Exploration Results and Exploration Targets were compiled, Mr Brown was an employee of Element 25 Limited. Mr Brown is a geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Brown consents to the inclusion of this information in the form and context in which it appears in this report.

This announcement is authorised for market release by Element 25 Limited's Board of Directors.

ASX Additional Information for Quarterly Report to 31 March 2022

	Tenement reference	Location	Interest at beginning of quarter	Acquired/Disposed	Interest at end of quarter
The mining tenements held at the end of the quarter and their location	E09/2415	Isle Bore WA	100%	N/A	100%
	E20/659	Eelya Hill WA	10%	N/A	10%
	E28/2577	Pinnacles WA	100%	N/A	100%
	E28/2761	Flanker South WA	100%	N/A	100%
	E46/1366	Black Hill WA	100%	N/A	100%
	E52/1529	Mt Padbury WA	100% (Note 1)	N/A	100% (Note 1)
	E52/2350	Butcher Bird WA	100%	N/A	100%
	E52/3606	Yanneri Bore WA	100%	N/A	100%
	E52/3706	Yanneri Pool WA	100%	N/A	100%
	E52/3735	Limestone Bore WA	100%	N/A	100%
	E52/3769	Kumarina WA	100%	N/A	100%
	E52/3779	Beyondie Bluff WA	100%	N/A	100%
	E52/3789	Corner Bore WA	100%	Disposed	0%
	E52/3840	Woolgatharra Pool WA	100%	N/A	100%
	E52/3858	Yanneri Well WA	100%	N/A	100%
	E52/3947	Weelarrana WA	100%	Disposed	0%
	E52/3973	Neds Gap WA	100%	N/A	100%
	E52/4022	Corner Bore WA	100%	N/A	100%
	E52/4055	Weelarrana WA	0%	Acquired	100%
	L52/211	Limestone Bore WA	100%	N/A	100%
	L52/215	Butcherbird East 1 WA	100%	N/A	100%
	L52/216	Butcherbird East 2 WA	100%	N/A	100%
	L52/217	Butcherbird East 3 WA	100%	N/A	100%
	L52/218	Butcherbird East 4 WA	100%	N/A	100%
	L52/220	Butcherbird East 5 WA	100%	N/A	100%
	L52/221	Butcherbird East 6 WA	100%	N/A	100%
	L52/225	Butcherbird East 7 WA	100%	N/A	100%
	M52/1074	Yaneri Ridge WA	100%	N/A	100%
E57/1060	Victory Well WA	20%	N/A	20%	
E63/2027	Lake Johnston WA	100%	N/A	100%	

Notes:

- 1) 100% interest held in all minerals other than iron ore and manganese.