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Building an Ethical Global Manganese Business

Supplying low-carbon sustainable manganese ore and EV battery grade HPMSM to global markets.

Paydirt Battery Minerals Conference – April 2024

APRIL 2024

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This presentation contains only a brief overview of Element 25 Limited and its associated entities ("Element 25") and their respective activities and operations. The contents of this presentation, including matters relating to the geology of Element 25's projects, may rely on various assumptions and subjective interpretations which it is not possible to detail in this presentation and which have not been subject to any independent verification.

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Corporate Summary

Element 25

 Owner of the Butcherbird Manganese Mine in Western Australia which is currently being expanded to produce >1Mt of high-quality manganese oxide concentrate¹.

 Developing a USA-based refinery to supply ethical battery-grade High Purity Manganese Sulphate Monohydrate (HPMSM) products².

Offtake and funding agreements in place with our partners General Motors and Stellantis to supply HPMSM for Electric Vehicle batteries.



ASX Ticker:	E25	Shares on Issue:	218M
OTCQX Ticker:	ELMTF	Debt:	Nil



Company Leadership



BOARD OF DIRECTORS



John Ribbons Chairman CPA



Justin Brown Managing Director **Geologist**

PROJECT DEVELOPMENT AND OPERATIONS TEAM



Fanie van Jaarsveld Non-Executive Director Analytical Chemist



Sam Lancuba Non-Executive Director **Chemical Engineer**

Experienced, multidisciplinary Board & Management



Michael Jordon Chief Financial Officer CPA



Neil Graham VP Battery Materials **Chemical Engineer**



Sias Jordaan VP Marketing & Logistics Accountant



lan Huitson Study Manager **Mining Engineer**



Gideon van Wyk GM Manganese Ore Bus. **Mechanical Engineer**



Leon Lima Technology Manager **Chemical Engineer**



Company Strategic Vision







Best in class, low carbon, ethically produced, scalable HPMSM for electric vehicle batteries: Sustainably Supplying Global EV Markets

Large, long-life manganese asset in Western Australia





Established Australian manganese operations







Butcherbird Expansion – Sustainable margins through lower costs



Key goals of Butcherbird expansion design:

- Increase production volume.
- Reduce unit operating costs.
- Reduce labour intensity.
- Improved reliability, clay (and moisture) handling.
- Increased profitability.

Release dated 23 January 2024

- Feasibility Study^{*} provides Compelling Economics:
 - Equipment selection and capital cost estimate complete.
 - Detailed engineering and design in progress.
 - Implementation timeline estimated at 12 months from FID.

Mineral Sizer Improved clay handling & reliability



DMS Drum Improved recoveries and grade

Key Design/Equipment Selection Outcomes

Butcherbird Expansion – Feasibility Study delivers robust economics



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- Butcherbird Expansion Feasibility Study targets 1.1 Mtpa manganese ore production
- Production to capture Economies of Scale with reduced operating costs.
- Moves Element 25 down the global manganese ore cost curve.
- Negotiations underway with current offtake partners and other industry players.
- Demand for additional volumes robust.
- Approximately 12 months to deliver post FID.
- NAIF Strategic Assessment Phase successfully completed, currently undergoing due diligence.

Capital Cost	NPV ₈	IRR	Cashflow	Payback
AU\$49.8	AU\$228M	113%	AU\$57.3M	1.2
(incl. contingency)	(Pre-tax, real)		(annual)	(years)
Task Name	Duration	Month 0 Month 1 Month 2 Month 3 Mo	onth 4 Month 5 Month 6 Month 7 Month 8 M	onth 9 Month 10 Month 11 Month 12 Month
Butcherbird Operation	371 days			
Board Approval	1 day	♦		
Design Phase	77 days			
Project Kick-Off Meeting	1 day	Ь		
Appointment of Contractors	2 wks	1		
Detail Design	8 wks			
Signoff	1 wk	Ĭ]	
Implimentation	363 days			
Procure materials	16 wks			
Order Long Lead Items	26 wks	•		
Manufacturing	16 wks	Ť		
Packing	2 wks		—	
Import / Export Authorization	2 wks		—	
Transport	8 wks		T	
Civil Design and Construction	10 wks		•	
On Site Construction	6 wks			
Commisoning	62 days			
Dry Commissioning	2 wks			
Wet Commissioning	6 wks			
Final Handover	1 wk			

Vertically integrated global HPMSM supply





Manganese Ore Supply

Australia

Production of high-quality Australian manganese ore concentrate as feed-stock for HPMSM refinery to be built in the USA.

Ore which is not used for HPMSM production will be sold to existing customers in the ferro alloy industry.



Louisiana HPMSM Refinery

USA

Louisiana manganese refinery will utilise the Australian ore as feedstock to produce high purity low carbon IRA compliant battery grade manganese sulfate.



Electric Vehicle (EV) uptake accelerating as the world decarbonises

"...S-curve modelling, based on the EV growth so far and the lessons of other technology shifts, suggests EV sales will grow at least four-fold by 2030, and make up between 62 percent and 86 percent of global car sales in 2030..." RMI-Energy Transformed 2023



Lifetime CO₂e emissions by vehicle powertrain United States

Element



¹Estimated use phase of 243,000 km. ²Production emission references global average vehicle C-segment. Source: McKinsey & Company, 2024

Transition to higher manganese cathodes is beginning

Element 25

Manganese Rich Cathode chemistries help to solve supply, ESG and supply security challenges



"High-manganese represents the **optimum cost-benefit ratio**." *Volkswagen, March 2021*



Reference: Umicore Capital Markets Day 2022

Li-Mn-rich technology shown as "cost" solution in electrification roadmap. BMW, November 2021

Tesla is **working on new manganese battery cell**. *Tesla, March 2022*







Reference: Benchmark Mineral Intelligence, South 32 Limited

Transition to higher manganese cathodes is beginning





Reference: Umicore 2023, McKinsey & Company

Improved, cost-competitive process technology



Problems with Current Technologies

- Large volumes of waste residues Toxic Reagents
- Inefficient
- Higher Cost Outdated processing technology

The Element 25 Process makes significant changes & improvements:



Reagents/Cost



Carbon Emissions

Waste Residue

Element 25 Process

More effic Minimises Reduced Lower vol Non-toxic

More efficient (fast kinetics, reduced energy) Minimises reagent requirements Reduced carbon intensity Lower volumes of waste residues Non-toxic residues may be able to be <u>repurposed</u>.

LCA demonstrates a low-carbon, ethical process



Global Warming Potential

- LCA covers Scope 1, 2 and 3 emissions from mining through to the proposed USA-based HPMSM processing plant. E25 HPMSM to produce ~1.7kg of CO₂ for every 1kg of HPMSM:
 - ~ ~ 67% lower than competitors in China.
 - o up to **47% lower** than competitors outside China.
 - ~26% lower than next lowest project's optimised case.
- E25 process is **not yet fully optimised** for carbon reduction.
- E25 to explore renewable energy and other potential carbon reduction strategies to further reduce CO_2 .



THE E25 PROCESS IS THE LOWEST CARBON INTENSITY OPTION FOR HPMSM TODAY

eference: Company ASX Release dated 16 February 202

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Global refining capacity in the longer term



EU & UK policy shifts are competing with the IRA for investment in battery and related plants Japan & Korea remain important region in terms of battery technology and innovation

First HPMSM Facility: Louisiana USA IRA is driving capital flows into US electrification infrastructure. E25 partnering with Stellantis & GM

Mn Concentrate Feedstock (33% Mn): Up to 1M tonnes per annum manganese concentrate production planned at the Butcherbird Project in Western Australia.

Design One, Build Many

E25 manganese concentrate is a very stable, easily transported feedstock. Allows location optionality for the processing facility. Multiple potential sites being explored.

Feasibility Study delivers compelling economics







Proposed HPMSM facility in Louisiana, USA





¹Reference: Element <u>25 Limited ASX release</u> dated 29 September 2023

Resources & Reserves

Maiden Ore Reserve¹

Category	Tonnes (Mt)	Mn (%)	Contained Mn (Mt)
Proved	14.4	11.5	1.65
Probable	36.2	9.8	3.56
Total	50.6	10.3	5.22

Global Mineral Resource¹

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

Element 25

- 89% conversion of measured and indicated resources to reserve.
- Maiden Reserve only exploits approximately 20% of global mineral resource.
- Excellent potential for future expansion.
- More drilling has potential to add to global resource.

Competent person's statement



The information in this presentation that relates to Exploration Results is based on information compiled by Mr Justin Brown who is a full-time employee of the Company and is a member of the Australasian Institute of Mining and Metallurgy. Justin Brown 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'. Justin Brown consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

All references to Mineral Resources pertain to the ASX release dated 29 September 2023. The Company confirms that all material assumptions, underpinning the estimations continue to apply and have not materially changed. All references to Mineral Reserves pertain to the ASX release dated 29 September 2023. The Company confirms that all material assumptions, underpinning the estimations continue to apply and have not materially changed.

For further information on Element 25 Limited and its Projects please visit its website at www.element25.com.au which contains copies of all continuous disclosure documents to ASX, Competent Persons' Statements and Corporate Governance Statement and Policies.



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