

## Building a Global Manganese Business

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

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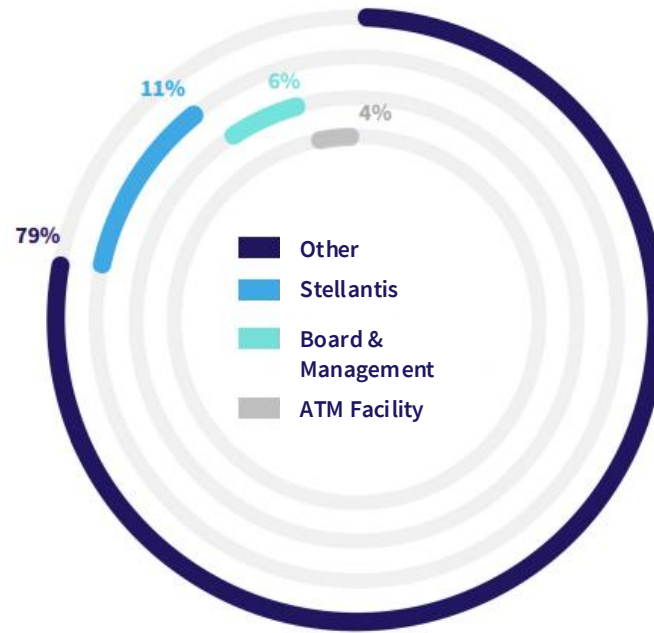
# Element 25 Introduction

Expanding the 100% owned Butcherbird Manganese Mine in Western Australia to produce high-quality manganese oxide concentrate.

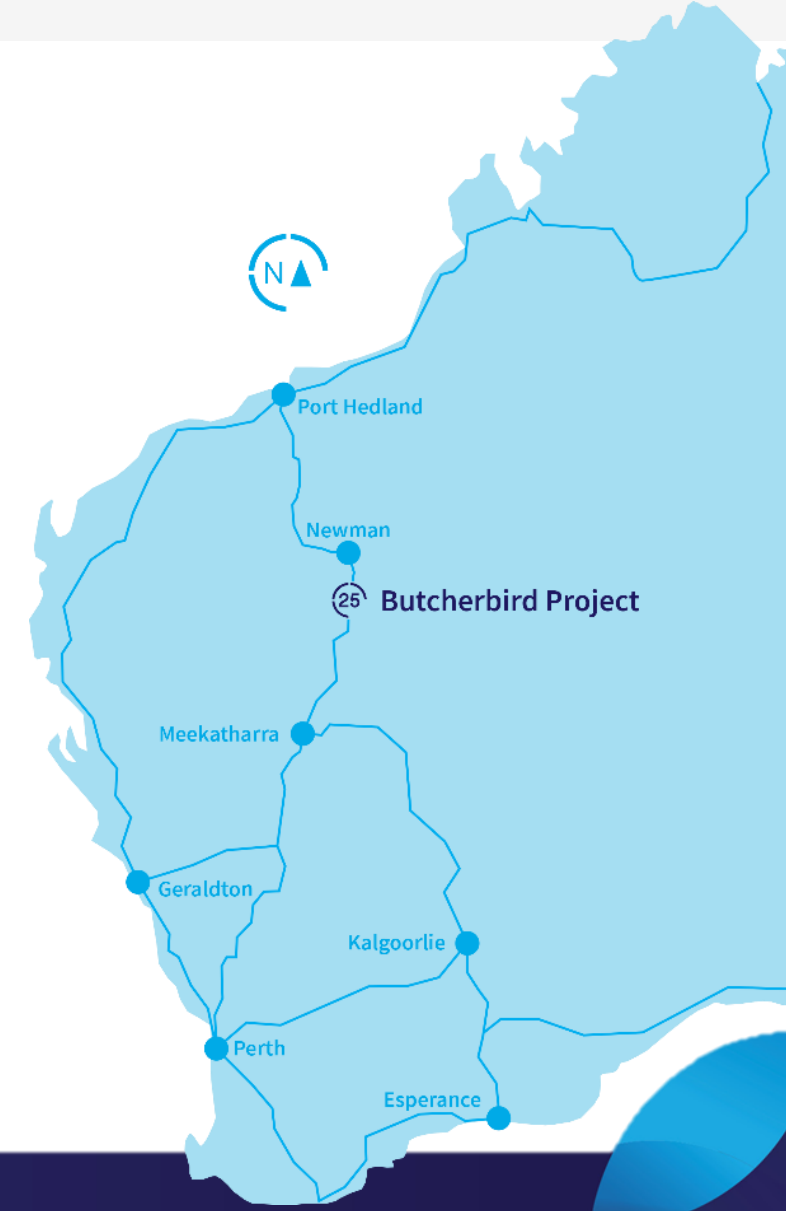
Developing a USA-based refinery to supply ethical battery-grade High Purity Manganese Sulphate Monohydrate (HPMSM) products.

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

Share Register:



 ASX Ticker: <b>E25</b>	 OTCQX Ticker: <b>ELMTF</b>	 Shares on Issue: <b>229M</b>	 Debt: <b>NIL</b>
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## Board of Directors



John Ribbons  
Chairman  
CPA



Justin Brown  
Managing Director  
Geologist



Fanie van Jaarsveld  
Non-Executive Director  
Analytical Chemist



Sam Lancuba  
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Chemical Engineer

Experienced,  
Multi-disciplinary Board &  
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CPA



Neil Graham  
VP Battery Materials  
Chemical Engineer



Sias Jordaan  
VP Marketing & Logistics  
Accountant



Chad Moloney  
Technical Services  
Mining Engineer



Leon Lima  
Technology Manager  
Chemical Engineer



Liam O'Connor  
Business Systems  
Chemical Engineer

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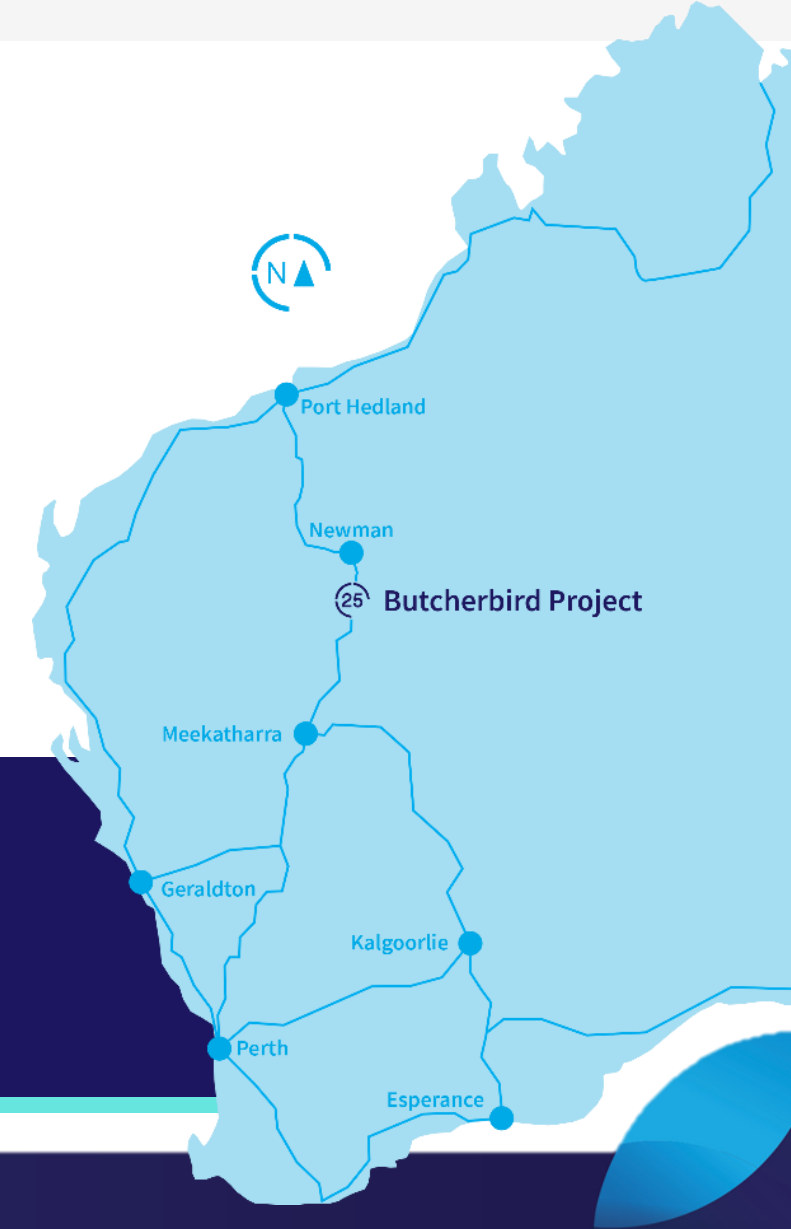
# The Butcherbird Manganese Project

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Element  25

# Butcherbird Manganese Project

- World-class manganese resource.
- Located in a Tier-1 jurisdiction with strong ESG regulation.
- Over 270 million tonnes in resources with potential to expand (2024 resource update<sup>1</sup>).
- > 18-year Reserve at 1.1Mt per annum production supported by an updated Feasibility Study<sup>2</sup>.
- Long mine-life with further upside by converting Inferred Resources.
- Very clean metallurgically – no toxic contaminants.
- Produces a low carbon, high-quality manganese concentrate ideal for manganese alloys and high-purity manganese sulphate monohydrate (HPMSM)<sup>3</sup>.



Providing high quality manganese for traditional and new energy markets.



<sup>1</sup>Reference: Company ASX Release Dated 29 October 2024

<sup>2</sup>Reference: Company ASX Release Dated 22 January 2025

<sup>3</sup>Reference: Company ASX Release Dated 21 February 2023

## Ore Reserve<sup>1</sup>

Deposit	Classification	Tonnes (Mt)	Grade (Mn%)	Contained Mn (Mt)
Yanneri Ridge	Proved	11.3	11.8	1.33
	Probable	70.4	10.2	7.15
Coodamudgi	Proved	-	-	-
	Probable	19.1	10.3	1.97
Stockpiles	Proved	0.6	9.2	0.06
<b>Total</b>		<b>101.4</b>	<b>10.4</b>	<b>10.5</b>

## Mineral Resource<sup>2</sup>

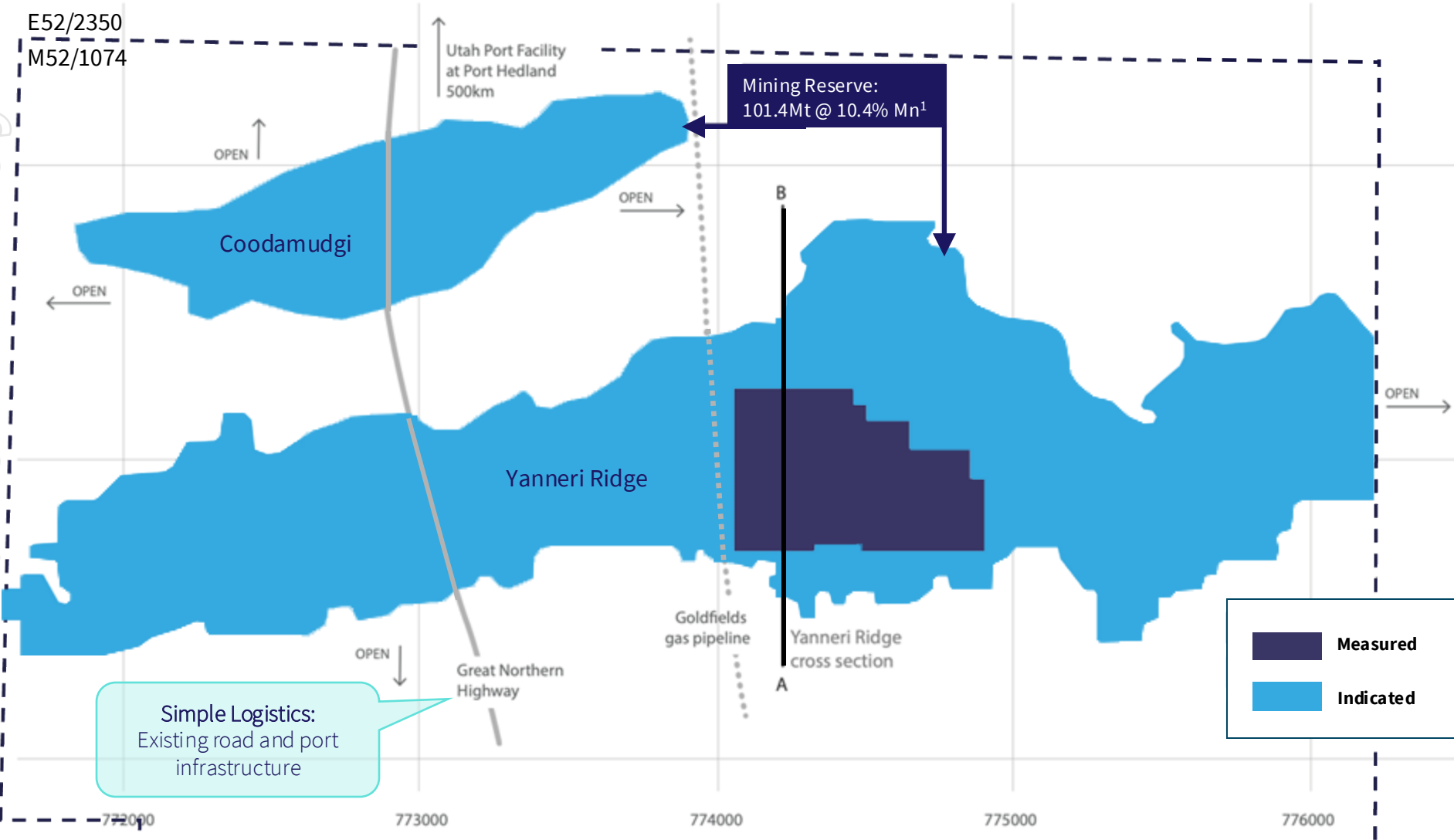
Resource Category	Tonnes (Mt)	Mn (%)
Measured	14	11.3
Indicated	116	10.1
Inferred	144	9.8
<b>Total</b>	<b>274</b>	<b>10.0</b>

- Current Reserve:
  - Only utilises approximately ~40% of global Mineral Resource;
  - Provides for a mine life of >18 years<sup>1</sup>.
- High conversion of measured and indicated resources to reserve.
- Excellent potential for future expansion with known mineralization outside resource areas.
- Simple geology, low technical risk.
- Global resources not closed off.

<sup>1</sup> Reference: Company ASX Release Dated 22 January 2025 (Ore Reserve Update)

<sup>2</sup> Reference: Company ASX Release Dated 29 October 2024 (Mineral Resource Estimate Update)

# Large, long-life manganese ore mine in Western Australia



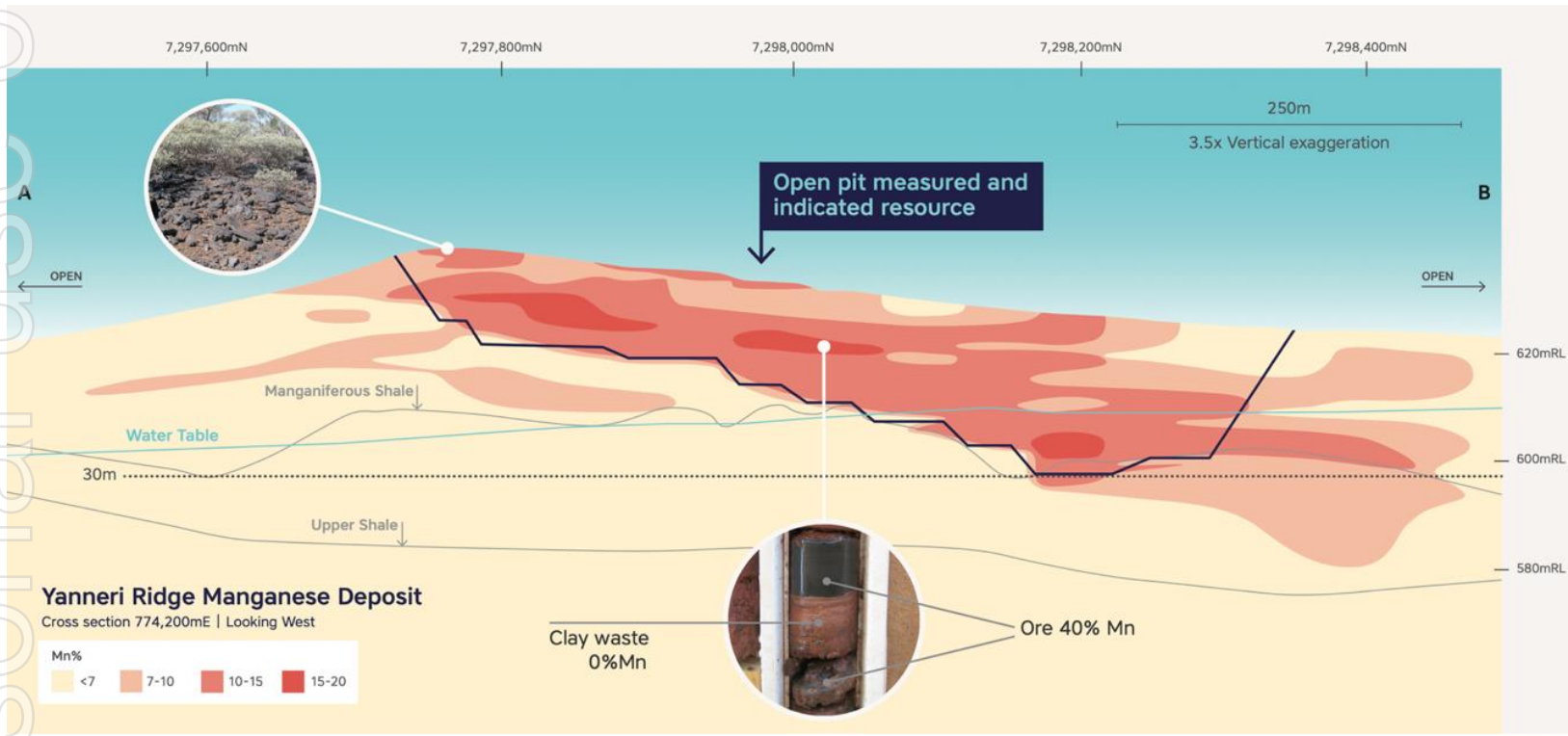
- Granted Mining Lease
- Fully Permitted
- >18 Year Reserve (1.1 Mtpa)
- Early Procurement Started
- ~12 Month Construction

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<sup>1</sup>Reference: Company ASX Release dated 22 January 2025

# Simple Geology: low-cost, low-impact operations

Classification	Tonnes (Mt)	Mn (%)	Contained Mn (Mt)
Resource <sup>1</sup>	274	10.0	27.4
Reserve <sup>2</sup>	101.4	10.4	10.5



## RESOURCE GROWTH POTENTIAL

- Large resource offers long term operating potential.
- Mineralisation outside existing resource provides upside.
- Ore suitable for ferroalloys, battery grade HPMSM and EMM.

## ENVIRONMENTALLY BENIGN OPERATION

- Ore from surface.
- Low strip-ratio.
- No explosives required.
- No dewatering required.
- One reagent – water.
- Very low levels of contaminants.

<sup>1</sup> Reference: Company ASX Release Dated 29 October 2024 (Mineral Resource Estimate Update)

<sup>2</sup> Reference: Company ASX Release Dated 22 January 2025

## Butcherbird Expansion

1.1Mt/a Manganese Ore<sup>1</sup>

Build and commission a full large-scale processing facility at the 100% owned Butcherbird Manganese Mine in WA.



## Louisiana HPMSM

USA EV Critical Raw Materials<sup>2</sup>

Construct the first US HPMSM processing facility (Louisiana), producing 65,000 tonnes per annum of battery-grade HPMSM with GM and Stellantis



## Expand Globally

HPMSM Expansion - EU & Asia

Multiple HPMSM modules globally to deliver sustainable HPMSM supply to global EV markets targeting Europe and Asia.

1-Year Plan

3-Year Plan

10-Year Plan

Best in class, low carbon<sup>3</sup>, ethically produced, scalable HPMSM for electric vehicle batteries:

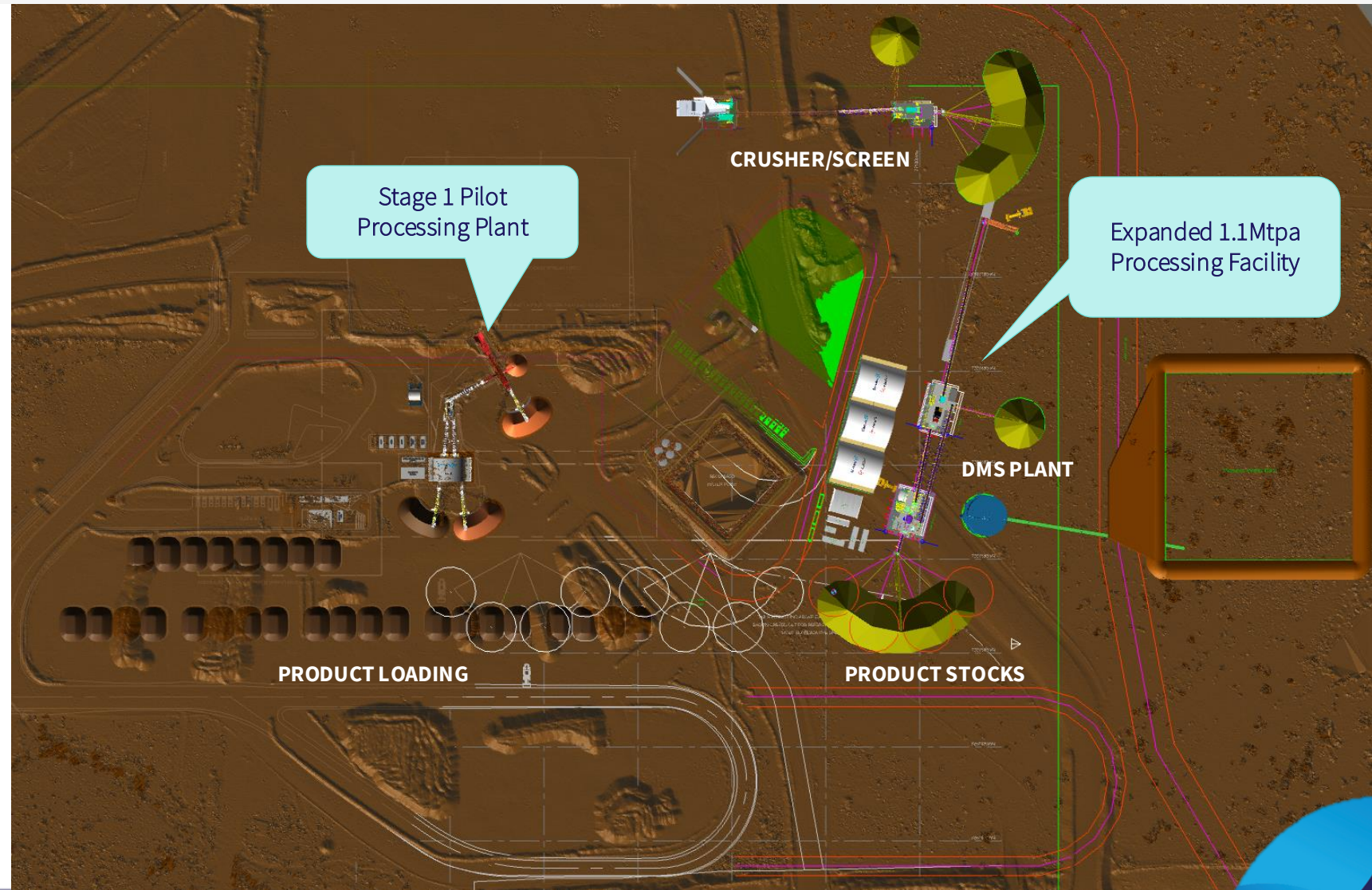
**Sustainably Supplying Global EV Markets**

<sup>1</sup> Reference: Company ASX Release Dated 22 January 2025

<sup>2</sup> Reference: Company ASX Release Dated 12 April 2023

<sup>3</sup> Reference: Company ASX Release Dated 21 February 2023

- New processing facility to optimise and scale the process.
- Scale and improved efficiencies target lower costs and increased profits<sup>1</sup>.
- CO<sub>2</sub> emission intensity and ESG outcomes will be improved by:
  - Integration of renewable energy (targeting year 3 of operations).
  - Equipment selection criteria for energy efficiency.
  - Investigating potential for autonomous mining fleet<sup>2</sup>.
  - Transition to EV mining fleet (targeting Year 2 of operations).








<sup>1</sup>Reference: Company ASX Release Dated 22 January 2025

<sup>2</sup>Reference: Company ASX Release Dated 7 October 2024

# Butcherbird Expansion – Feasibility Study<sup>1</sup> delivers robust economics

- 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 successfully completed, currently undergoing due diligence.

				
<b>Capital Cost</b>	<b>NPV<sub>8</sub></b>	<b>IRR</b>	<b>Cashflow</b>	<b>Payback</b>
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
<b>AU\$64.8</b>	<b>AU\$561M</b>	<b>96%</b>	<b>AU\$70.5M</b>	<b>1.3</b>
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
(incl. contingency)	(Pre-tax, real)		(annual)	(years)



The expansion will establish Butcherbird as a low-cost manganese operator (US\$ 2.86/dmtu C1 cost) able to produce high-quality manganese concentrate at a globally competitive operating cost.



The Feasibility Study utilises all the available measured and indicated resources within the 18.3-year mine plan supporting this Study.



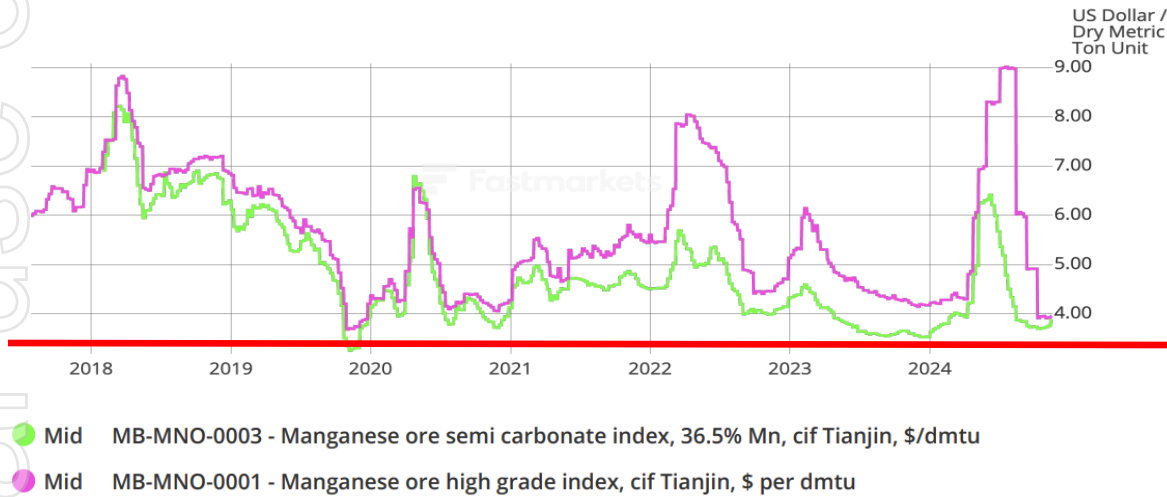
Low capital requirement of AU\$64.8M capital in total construction costs including process and non-process infrastructure. Average base case annual operating cashflow of AU\$ 70.5M at full production.



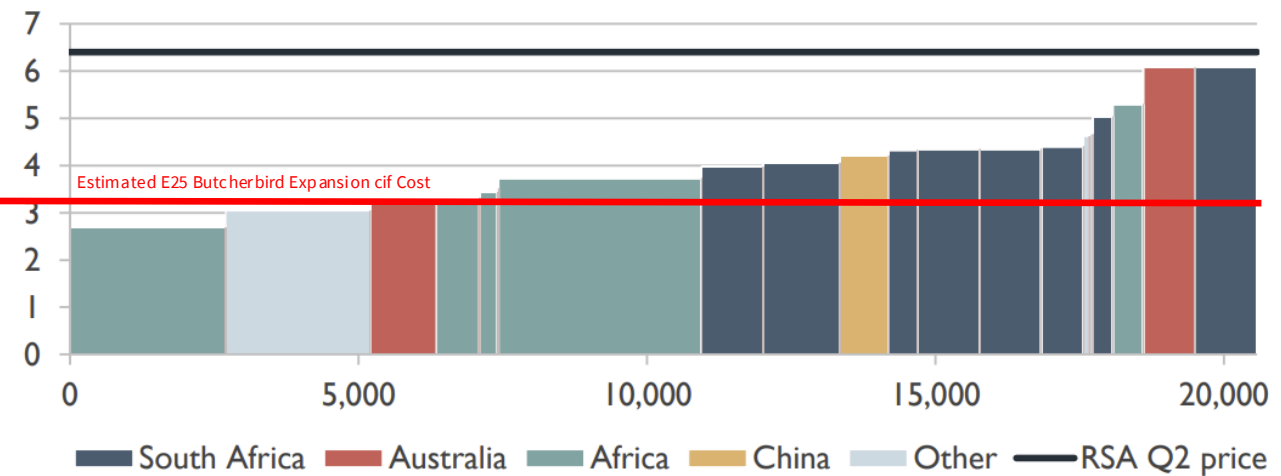
Forecast cashflows generate a simple payback period of 16 months from commencement of operations.

# Butcherbird Expansion – Scale Strengthens the Business

Economies of scale from the expanded operation intend to move the Butcherbird production costs lower on the global cost curve and strengthen the business through all price cycles.



**PROJECT BLUE**  
Mn ore cost curve (CIF China, US\$/t)  
July 2024



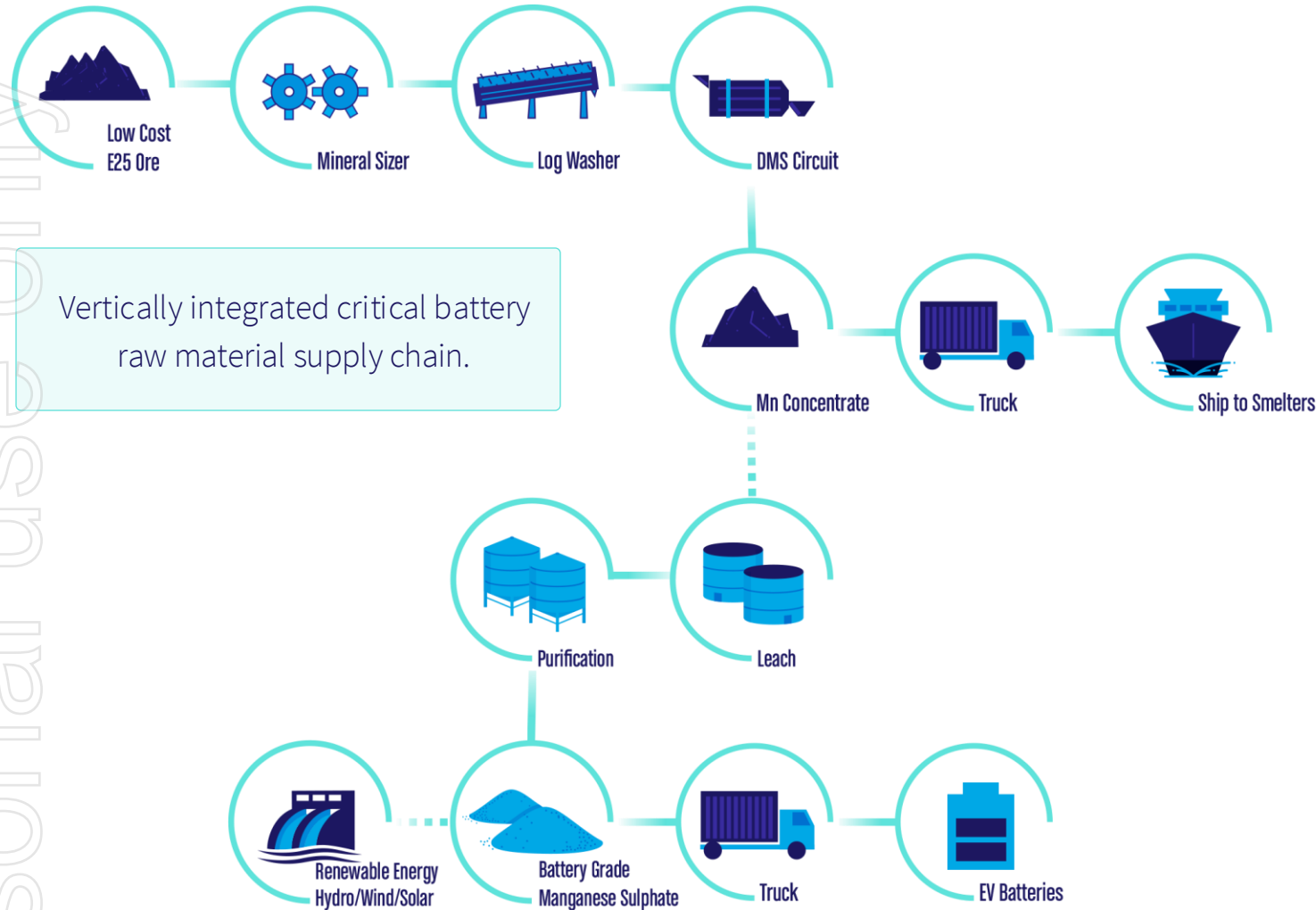
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# E25 HPMSM Strategy

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Element 25

# Vertically-integrated global HPMSM supply



## WA Manganese Ore Supply:

Australian manganese ore concentrates as feedstock for HPMSM production to supply US EV markets.

Surplus ore will supply existing ferroalloy customers.



## Louisiana HPMSM Refinery:

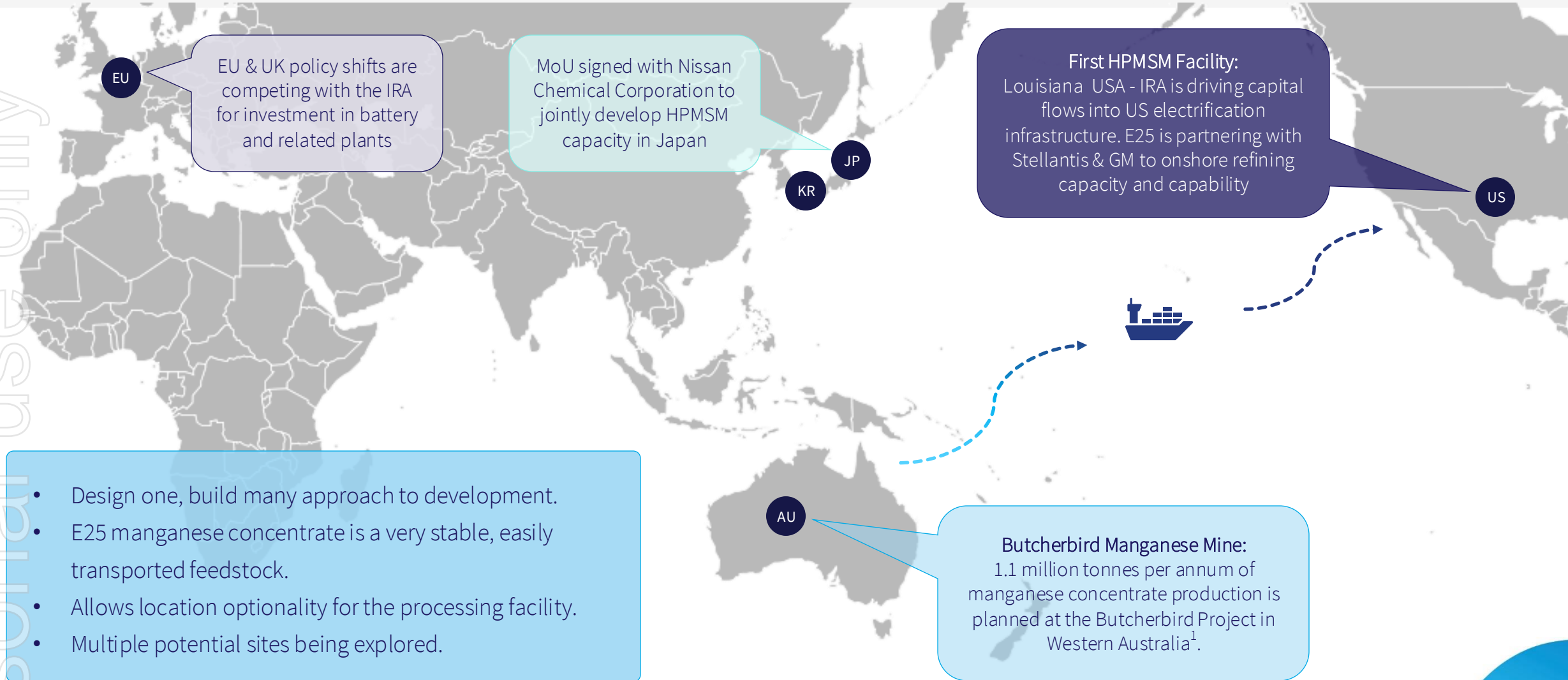
Louisiana manganese refinery will utilise the Australian ore as feedstock to produce high purity low carbon IRA compliant battery grade manganese sulphate.



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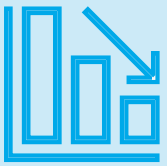
# Global Refining Capacity in the Longer Term

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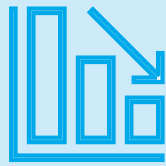


<sup>1</sup> Reference: Company ASX Release Dated 22 January 2025

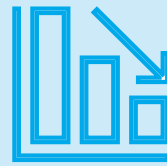
The Element 25 Process makes significant changes & improvements:



Reagents/Cost



Carbon Emissions



Waste Residue

Current Outdated Technologies mean:

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

## Element 25 Process

- 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 repurposed.

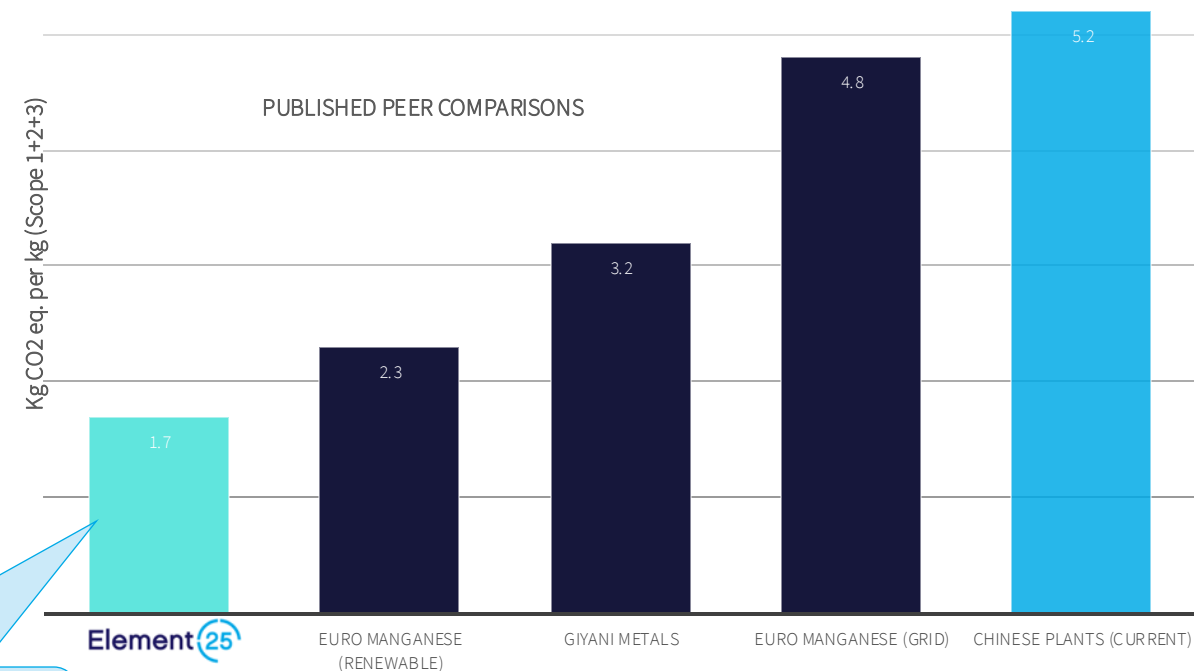
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- LCA covers Scope 1, 2 and 3 emissions from mining through to the proposed USA-based HPMSM processing plant.
- E25 HPMSM to produce ~1.7kg of CO<sub>2</sub> for every 1kg of HPMSM:
  - ~ 67% lower than competitors in China.
  - up to 47% lower than 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<sub>2</sub>.

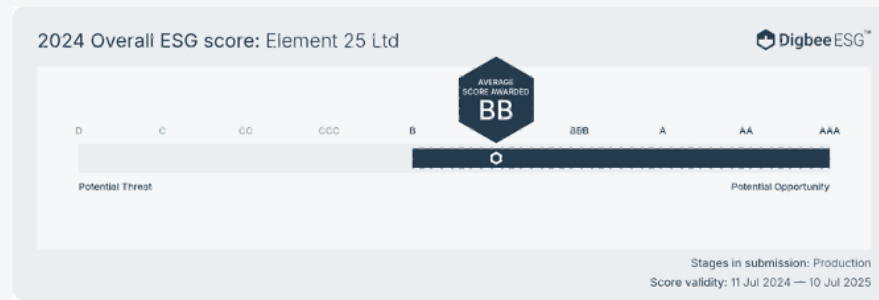
Element 25 HPMSM Process  
Industry leading carbon intensity

## E25 Process Reduces Global Warming Potential Relative to Incumbent Producers



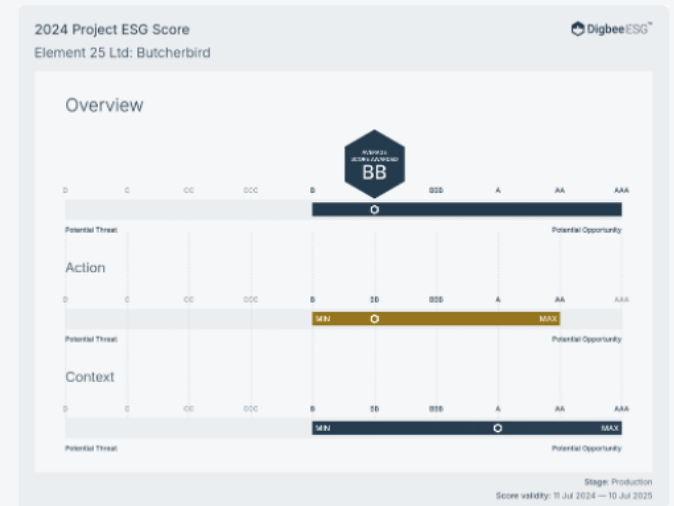
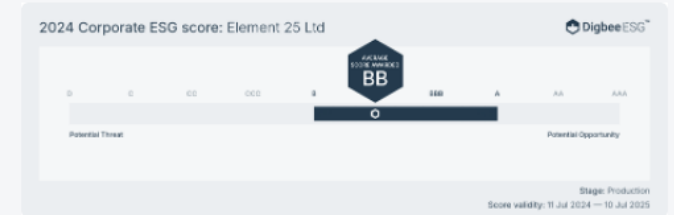
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- Digbee ESG benchmarking process completed for 2024.
- Opportunities identified for action over following period.
- Executive incentive KPIs now linked to ESG outcomes.
- Internal reporting processes being developed to improve ESG credentials and preparedness for compliance reporting.



▲ Element 25 Ltd's overall ESG rating as of July 2024

Digbee assembled an independent team of suitably qualified Mining ESG experts to manually review our submission against a set of rigorous and standardised scoring criteria. These scores were then peer reviewed before being finalised to ensure accuracy and credibility. The overall score above is the calculated average of the corporate and project scores shown on the right. Context scores reflect the inherent risk of where we are operating and there is little that can be done to influence these, whereas the action scores reflect the action being taken by us to mitigate these risks.



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# The Importance of Manganese

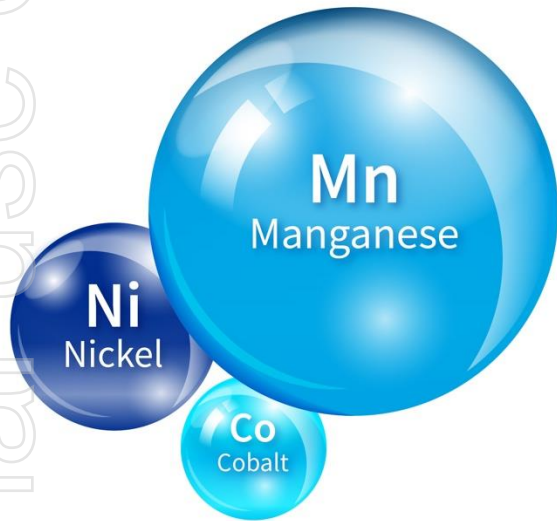
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# Transition to Higher Manganese Cathodes

LMFP, LMNO and  $NM_x$  cathode chemistries offer improved safety, higher energy density, reduced cost per kWh and greater supply chain flexibility.

## High Mn means reduced reliance on Ni and Co:



Reduced nickel and very low to no cobalt content.

Reference: Umicore 2023

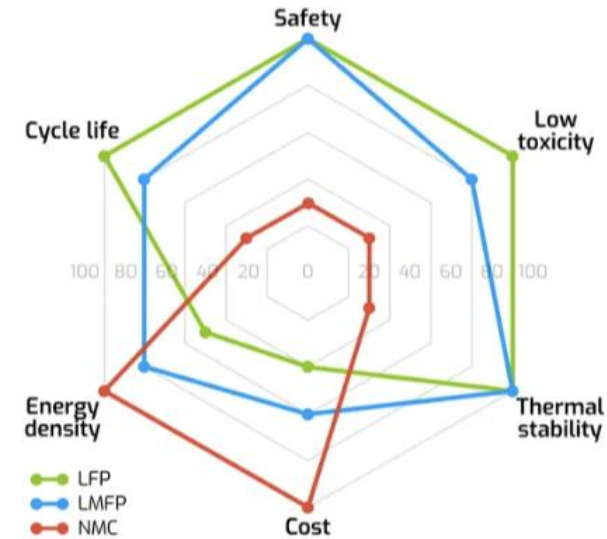
“Japan’s manganese-boosted EV battery hits game-changing 820 Wh/Kg...”

**Yokohama University Japan**

“...our manganese-rich HLM technology moves closer to commercial production for future customers and provides an optimum alternative for the production of low-cost EV batteries...”

**Umicore Finland**

## LMFP vs LFP vs NMC



LMFP offers improved energy density over LFP, lower cost/kwh and improved safety over NMC

Delivering up to 20 per cent more range than LFP cathode



Reference: Integrals Power

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Louisiana Battery Grade HPMSM

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Element 25

## DoE Grant Selection

- E25's planned HPMSM facility in Louisiana awarded a **US\$166 million grant** from the U.S. DoE.
- Louisiana HPMSM Project selected under DoE's MESC Battery Materials Processing Grant Program.
- Binding agreements signed, grant awarded for the project.
- The DoE's funding commitment is **in addition to U\$115M financing commitments** from GM and Stellantis.

### MESC IS SCALING U.S. MANUFACTURING AND CATALYZING U.S. ENERGY PRODUCTION

**Batteries**

**Buildings & Energy Efficiency**

**Critical Materials & Recycling**

**Energy Generation & Fuels**

**Grid Equipment**

**Materials**

**Transport**

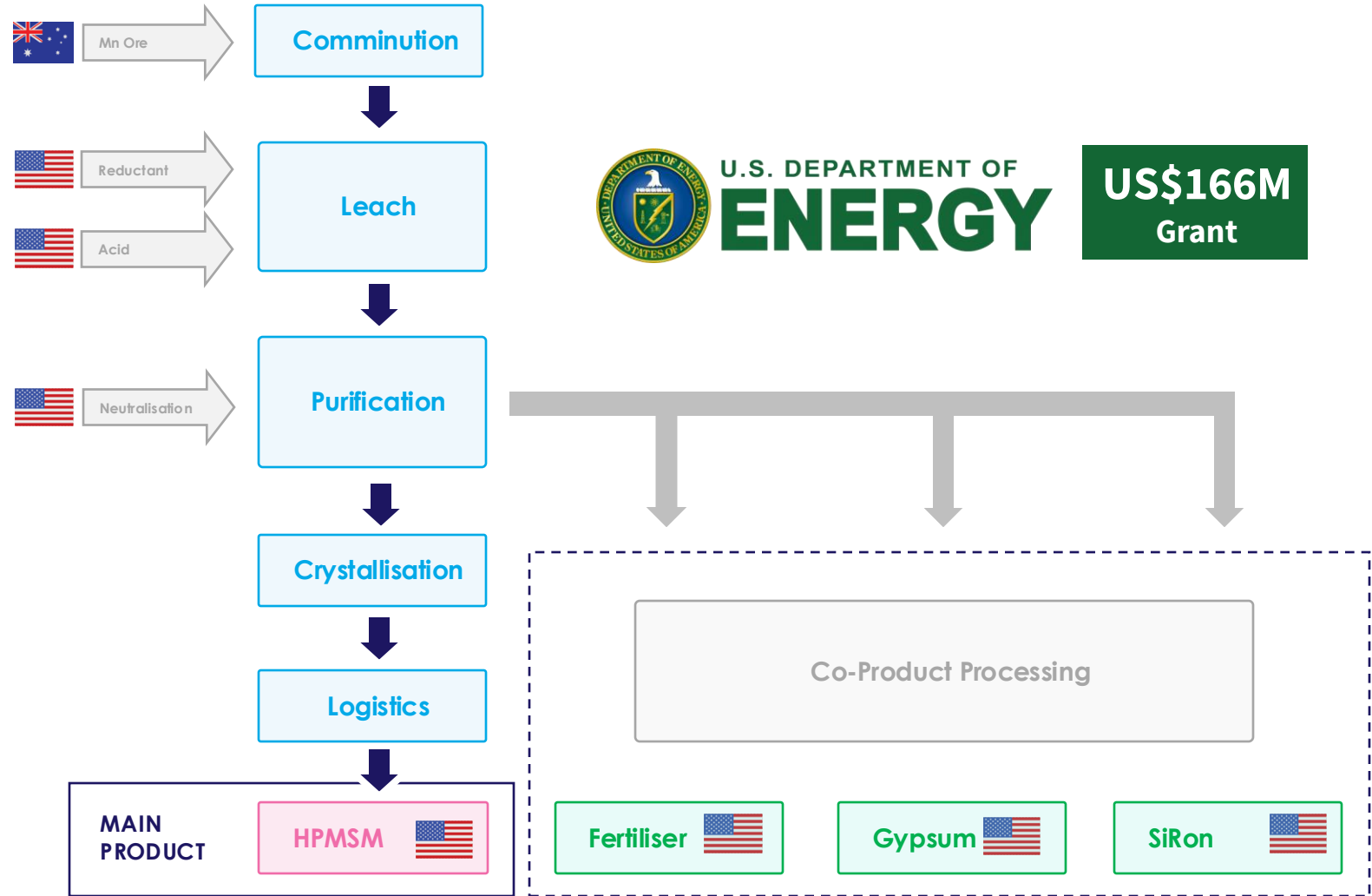
Office of Manufacturing & Energy Supply Chains

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Reference: [https://www.energy.gov/sites/default/files/2024-11/Supply\\_Chain\\_Readiness\\_Level\\_%28SCRL%29\\_Analysis\\_%28Nov-2024%29\\_2.pdf](https://www.energy.gov/sites/default/files/2024-11/Supply_Chain_Readiness_Level_%28SCRL%29_Analysis_%28Nov-2024%29_2.pdf)

## Local Supply Chain

- Process and supply chain developed to maximise U.S. industry involvement.
- Working with partners GM and Stellantis to supply low carbon HPMSM for EV batteries.
- All reagents sourced locally from established suppliers.
- Site located close adjacent to acid recycling facility.
- Solid residues as co-products will be placed into local industries targeting zero waste.
- Low carbon, circular economy approach.



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# DoE Grant Award Underpins Project Capital Stack

- DoE US\$166M grant award provides cornerstone funding to support project success<sup>1</sup>.
- Louisiana HPMSM Project grant awarded under DoE's MESC Battery Materials Processing Grant Program.
- Binding grant agreements signed, award committed.
- Grant support is **in addition to US\$115M financing commitments** from GM and Stellantis.
- Discussions in train with prospective financiers to close out remaining capital funding requirement.



Final funding piece ~15% of capital requirement. Process underway.

**Grant award secures 50% of capital requirement up to US\$166M**



<sup>1</sup>Reference : Company ASX Release Dated 20 January 2025

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# The Planned Element 25 HPMSM facility in Louisiana, USA

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# Questions?

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STELLANTIS



## Contact Details

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Justin Brown

**Managing Director**

Email: [admin@e25.com.au](mailto:admin@e25.com.au)

Phone: +61 (8) 6375 2525

Media Inquiries:

**Nathan Ryan**

Email: [nathan.ryan@nwrcommunications.com.au](mailto:nathan.ryan@nwrcommunications.com.au)

Phone: +61 (0) 420 582 887

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.

The Company confirms that in the case of Production Targets, all material assumptions underpinning the production target, or the forecast financial information derived from a production target, in the market announcement dated 22 January 2025 continue to apply and have not material changed.

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 29 October 2024 and 22 January 2025 continue to apply and have not materially changed. All estimates or Mineral Resources or Ore Reserves underpinning the production target have been prepared by a competent person/s in accordance with the requirements of the JORC Code, Appendix 5A. The Company confirms that it is not aware of any new information or data that materially affects information included in previous announcements, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

Please note with regard to exploration targets, the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

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

This release has been approved by the Element 25 Limited Board of Directors.