

## Building an Ethical Global Manganese Business

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Share Purchase Plan to fund pre-commitment capital requirements progress detailed engineering for the Butcherbird Expansion Project and the Louisiana HPMSM Refinery.

Presentation Supporting Share Purchase Plan (SPP)

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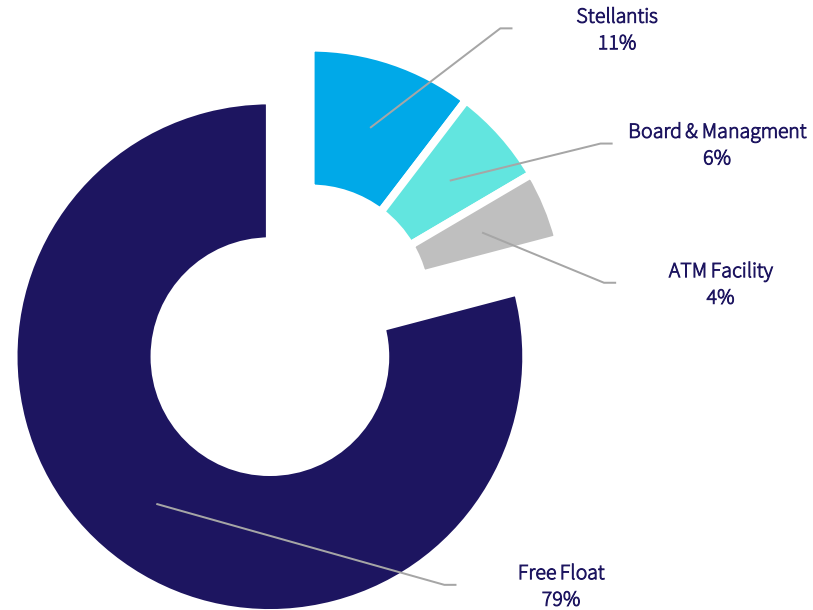
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A booklet in respect of the Share Purchase Plan (**SPP**) will be made available to eligible shareholders in Australia, New Zealand, Hong Kong and Germany following its lodgement with ASX (**SPP Booklet**). Any eligible shareholder in Australia, New Zealand, Hong Kong or Germany who wishes to participate in the SPP should carefully read and consider the SPP Booklet (in full) before deciding whether to apply for new shares under the SPP. Eligible shareholders who wish to apply for new shares under the SPP will need to apply in accordance with the instructions contained in the SPP Booklet and the application form.

An investment in Element 25 shares is subject to known and unknown risks, some of which are beyond the control of the Company and its directors. Element 25 does not guarantee any particular rate of return or financial performance, nor does it guarantee any particular tax treatment.

- Owner of the Butcherbird Manganese Mine in Western Australia which is currently being expanded to produce >1.1Mt of high-quality manganese oxide concentrate<sup>1</sup>.
- Developing a USA-based refinery to supply ethical battery-grade High Purity Manganese Sulphate Monohydrate (HPMSM) products<sup>2</sup>.
- 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

<sup>1</sup>Reference: Company ASX Release dated 23 January 2024

<sup>2</sup>Reference: Company ASX Release dated 12 April 2024

## BOARD OF DIRECTORS



John Ribbons  
Chairman  
CPA



Justin Brown  
Managing Director  
Geologist



Fanie van Jaarsveld  
Non-Executive Director  
Analytical Chemist



Sam Lancuba  
Non-Executive Director  
Chemical Engineer

Experienced, multi-  
disciplinary Board  
& Management

## PROJECT DEVELOPMENT AND OPERATIONS TEAM



Michael Jordon  
Chief Financial Officer  
CPA



Neil Graham  
VP Battery Materials  
Chemical Engineer



Sias Jordaan  
VP Marketing & Logistics  
Accountant



Ian Huitson  
Study Manager  
Mining Engineer



Gideon van Wyk  
GM Manganese Ore Bus.  
Mechanical Engineer



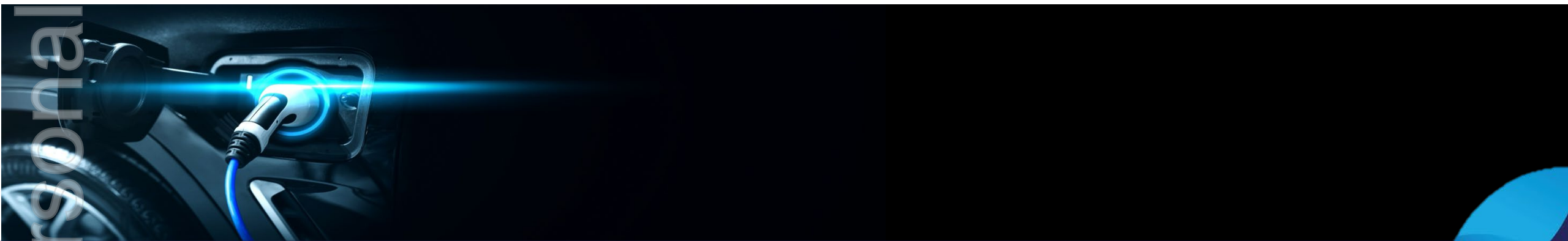
Leon Lima  
Technology Manager  
Chemical Engineer

E25 to Raise up to \$5M via a Share Purchase Plan. Funds raised will contribute to:

Maintaining Project Schedules

Providing Working Capital

Maintaining Project Schedules



# Share Purchase Plan (SPP) Overview<sup>3</sup>

## Share Purchase Plan:

- Non-underwritten SPP offered to eligible shareholders targeting to raise up to A\$5 million.
- Eligible shareholders in Australia, New Zealand, Hong Kong and Germany will be invited to apply for up to A\$30,000 of new shares free of any brokerage, commission or transaction costs.
- The price for the SPP will be A\$0.27 per share.

## Subscription Amounts:

- Eligible shareholders will have the opportunity to apply for share purchase plan shares in parcels valued at:
  - \$1,000
  - \$2,500
  - \$5,000
  - \$7,500
  - \$10,000
  - \$12,500
  - \$15,000
  - \$20,000
  - \$25,000
  - \$30,000

## Underwriting:

- The share purchase plan is not underwritten.

## Director Participation:

- Managing Director, Justin Brown, and Directors who are eligible shareholder of Element 25, intend to participate in the SPP.

## Ranking:

- Shares issued via the share purchase plan will rank equally with the existing fully paid ordinary shares on issue.

Element 25 will have the ability to accept more or less than the target SPP size at its absolute discretion.

# Share Purchase Plan (SPP) Timetable

Event	Date
Record Date for SPP	5.00pm (AWST) Monday, 20 May 2024
Announcement of SPP and Lodgment of Appendix 3B with ASX	Tuesday, 21 May 2024
Opening Date for SPP Applications, and dispatch SPP Booklet and Investor Presentation	Monday, 27 May 2024
Closing Date for SPP Applications	5.00pm (AWST) Monday, 17 June 2024
Results of SPP Announced, SPP Shares Issued	Monday, 24 June 2024
SPP Share commence trading on ASX	Tuesday, 25 June 2024
Holding statements issued to Shareholders	Wednesday, 26 June 2024

The above timetable is indicative only and subject to change. The commencement of trading and quotation of new shares issued under the SPP is subject to confirmation from ASX. Subject to the requirements of the Corporations Act, the ASX Listing Rules and other applicable rules, Element 25 reserves the right to amend this timetable at any time, including extending the period for the SPP or accepting late applications, either generally or in particular cases, without notice.

All times above refer to Australian Western Standard Time (AWST).



In January 2024, the Company announced that it had completed a Feasibility Study (**Study**) to investigate the potential to expand the production of manganese concentrate at the Company's 100% owned Butcherbird Project (**Project**), located in the southern Pilbara region of Western Australia<sup>4</sup>. The Study demonstrated strong economics with robust economic returns and rapid capital payback. Expansion of the processing facility at Butcherbird aligns with Element 25's strategy for its planned battery grade high purity manganese sulphate monohydrate (**HPMSM**) project to be built in Louisiana, USA in partnership with General Motors LLC and Stellantis NV<sup>5</sup>.

The proceeds of the SPP will be used to assist with funding activities for the Butcherbird Stage 2 Expansion Project for initial engineering, procurement and project management activities prior to the completion of project financing and a final investment decision (**FID**). Element 25 intends to fund the remainder of the project through cash reserves and project financing. The Company is well-progressed in negotiations with a number of potential lenders to Project.

As a result of the Study and HPMSM strategy, the Company immediately commenced activities related to the Stage 2 Expansion focusing on detailed engineering and design, project financing and finalising other key requirements to support the commencement of construction in line with the project schedule.

Funds will also support continued pre-commitment engineering activities to progress the planned HPMSM facility in Louisiana, where the Company recently announced commercial terms in relation to a development site for the HPMSM Project<sup>6</sup> and general working capital.

<sup>4</sup> Reference: ASX Release dated 23 January 2024

<sup>5</sup> Reference: Company ASX Releases dated 9 January 2023 and 26 June 2023

<sup>6</sup> Reference: Company ASX Release dated 8 May 2024



## Stage 2

### 1.1 Mt Mn Ore

Build and commission full commercial scale processing facility at the Butcherbird Manganese Mine



## Stage 3

### Louisiana HPMSM

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



## Stage 4

### HPMSM Expansion

Construct and commission the second production train at the Louisiana facility to double production to 130Kt per annum.



## Stage 5

### Global Supply

Multiple HPMSM modules globally to deliver sustainable HPMSM supply to global EV markets.

2-Year Plan

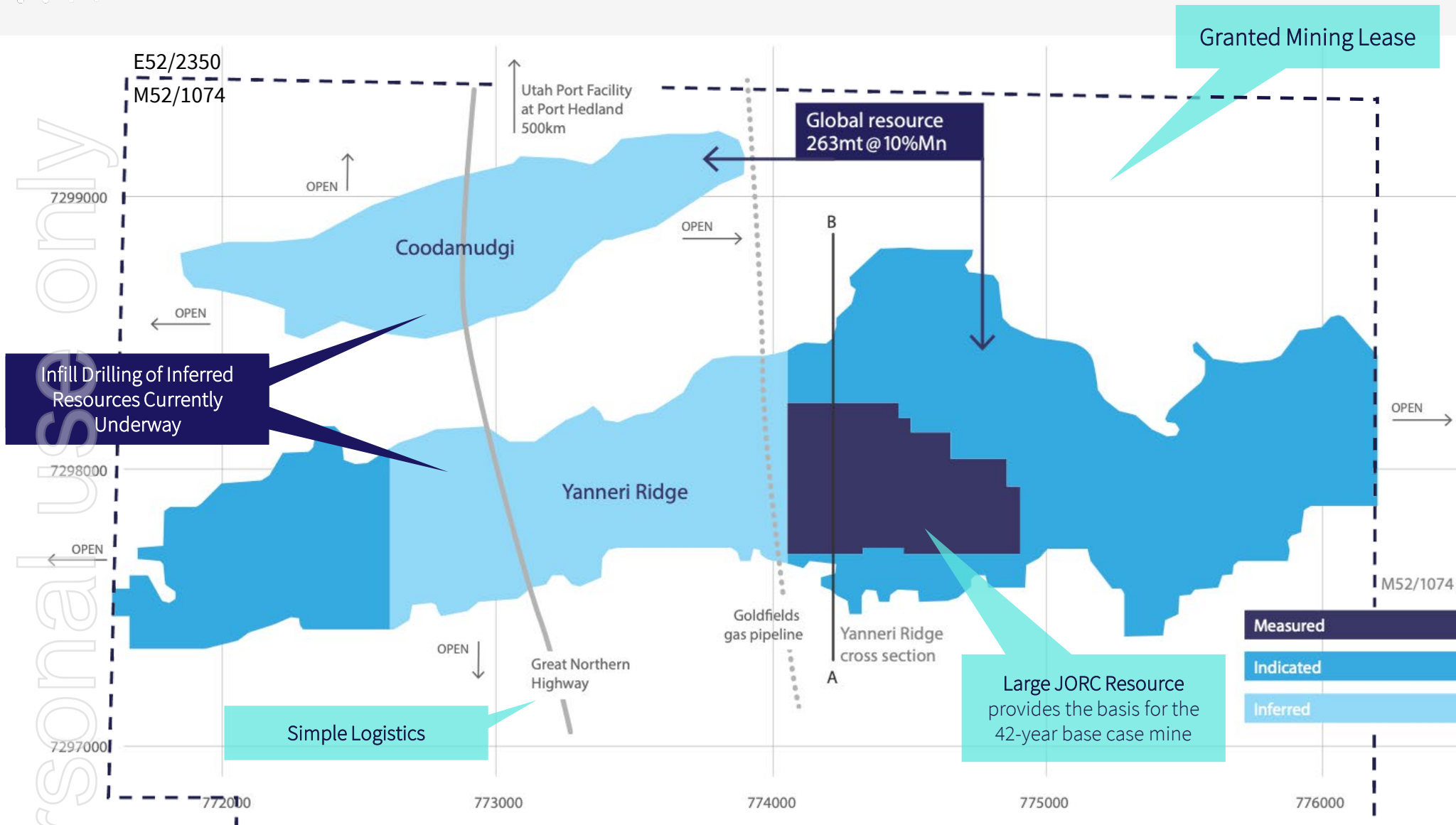
5-Year Plan

10-Year Plan

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



## Key goals of Butcherbird expansion design:

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

## Feasibility Study\* provides Compelling Economics:

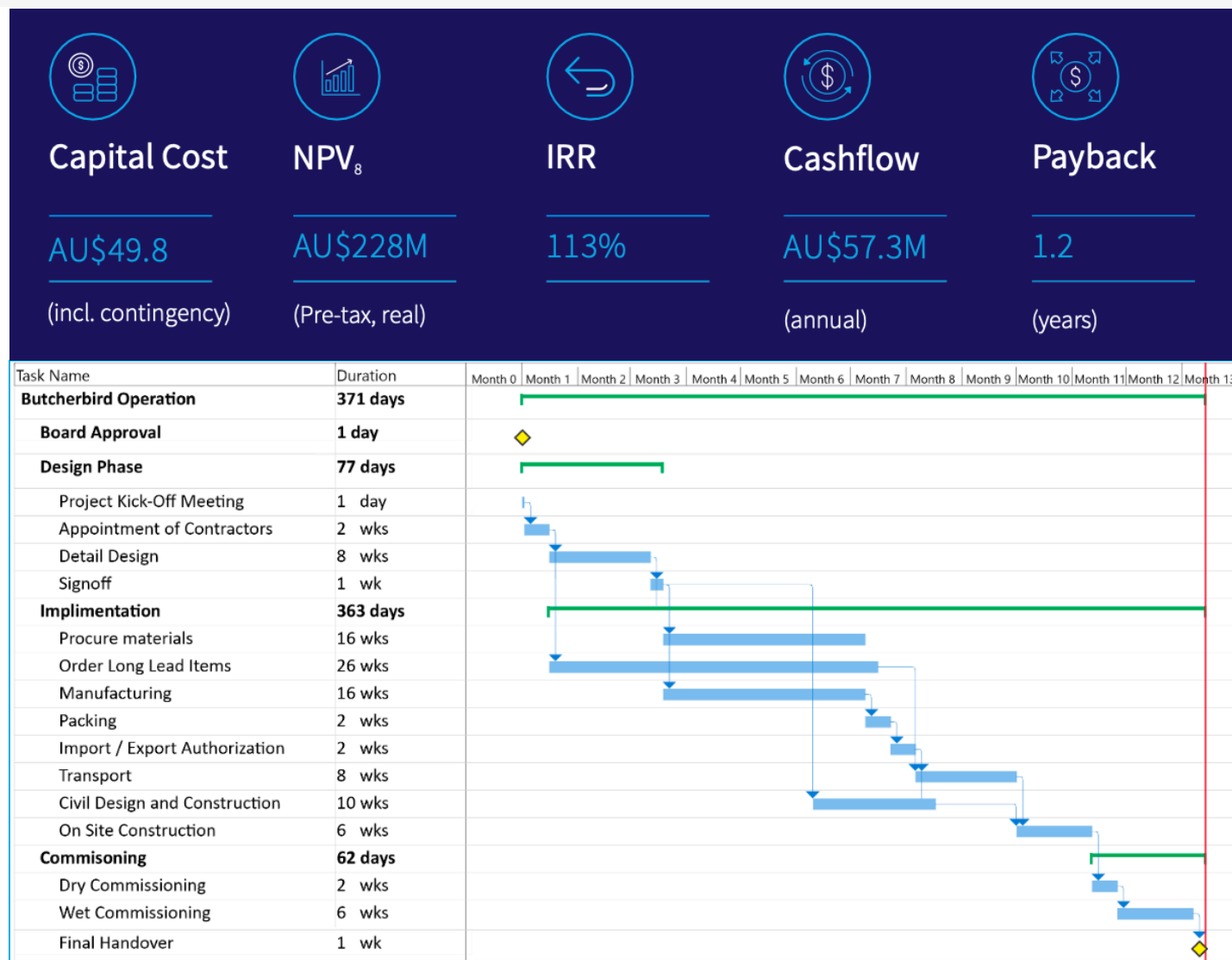
- Equipment selection and capital cost estimate complete.
- Detailed engineering and design in progress.
- Implementation timeline estimated at 12 months from FID.

## Key Design/Equipment Selection Outcomes

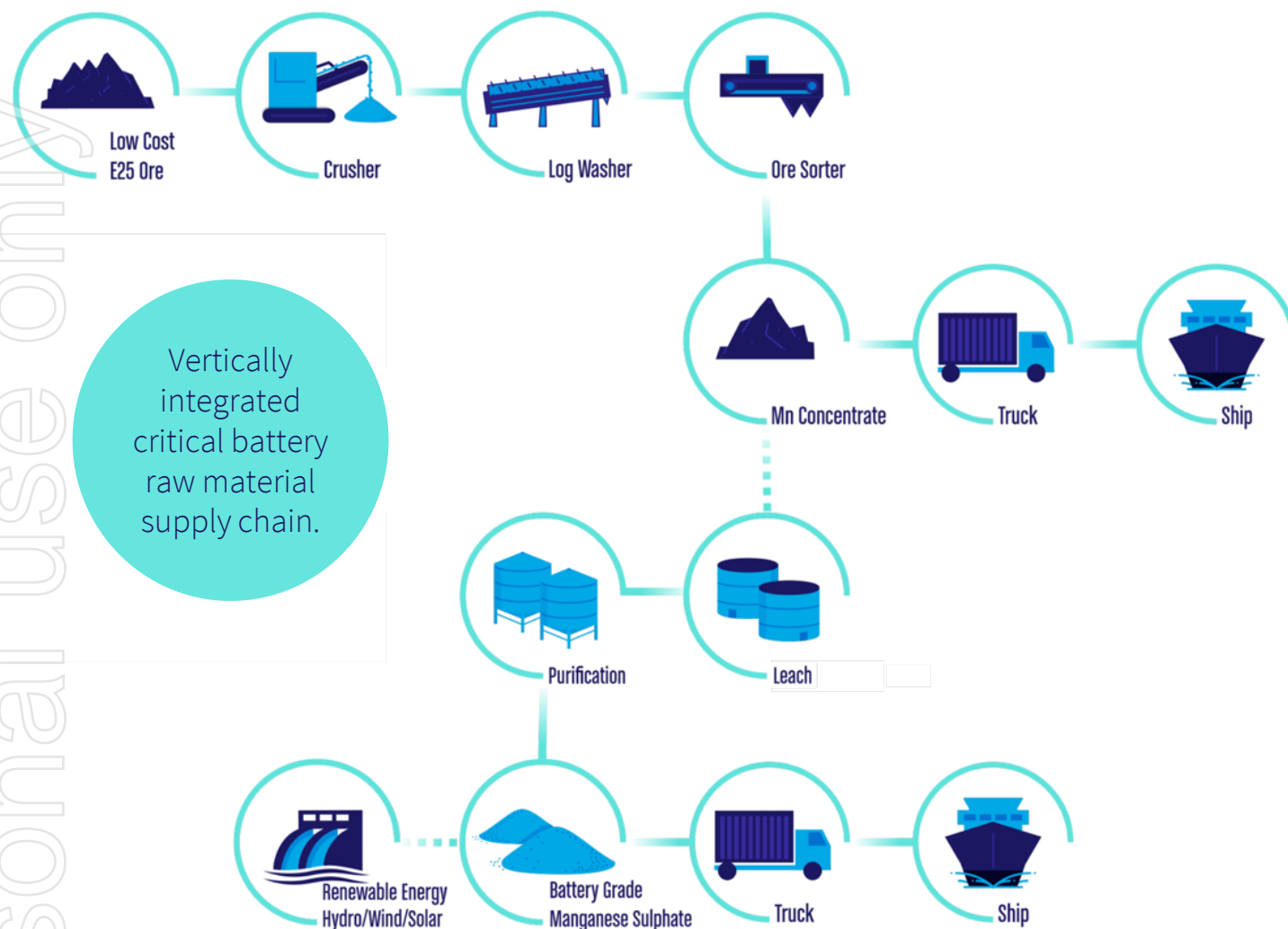


# Butcherbird Expansion – Feasibility Study delivers robust economics

- Butcherbird Expansion Feasibility Study targets 1.1 Mtpa manganese ore production<sup>7</sup>
- Production to capture Economies of Scale with reduced operating costs, moving Element 25 down the global manganese ore cost curve.
- Engineering and Procurement activities are underway.
- 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<sup>8</sup>.



# Vertically integrated global HPMSM supply



Vertically integrated critical battery raw material supply chain.

## 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

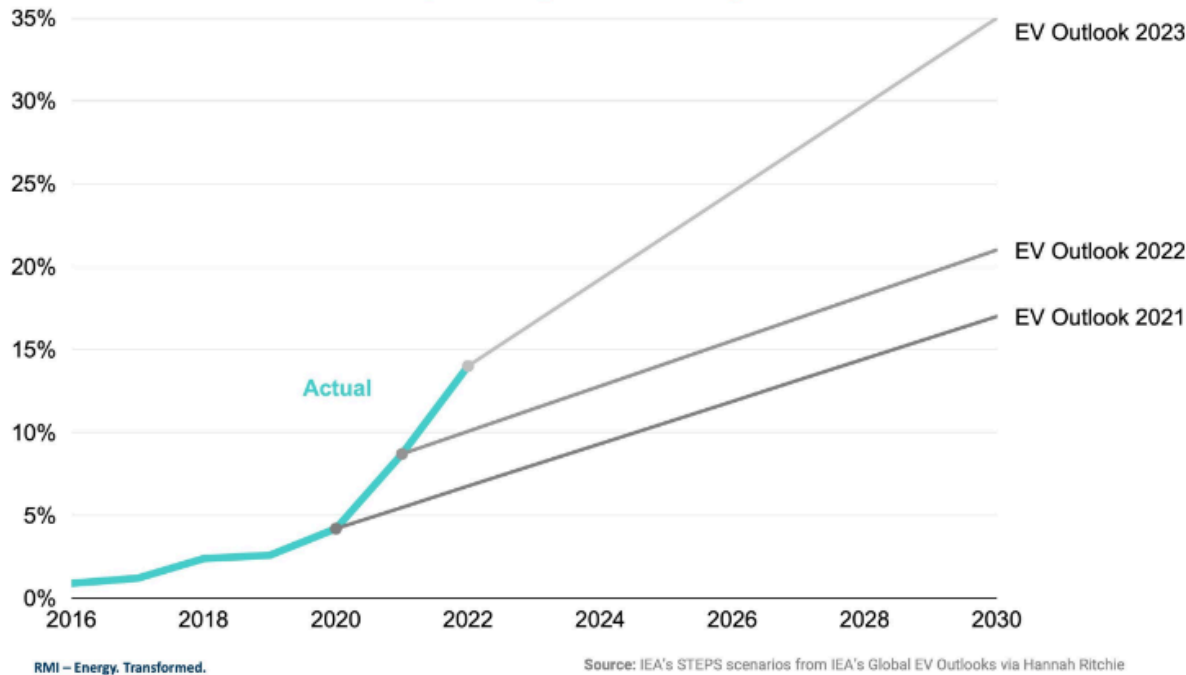
Louisiana manganese refinery will utilise the Australian ore as feedstock to produce high purity low carbon IRA compliant battery grade manganese sulfate.



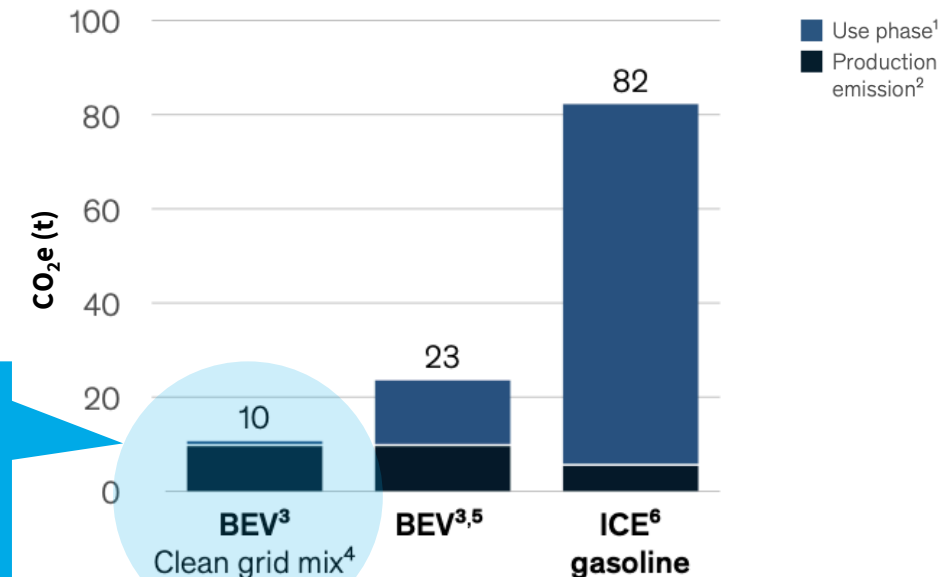


“...S-curve modelling, based on the EV growth so far and the lessons of other technology shifts, suggests EV sales will grow at least four-fold by 2030, and make up between 62 percent and 86 percent of global car sales in 2030...” RMI – Energy Transformed 2023

## EV sales forecasts keep being revised upwards



## Lifetime CO<sub>2</sub>e emissions by vehicle powertrain United States



Electric Vehicles have much lower lifetime carbon emissions when charged with clean energy

<sup>1</sup>Estimated use phase of 243,000 km.

<sup>2</sup>Production emission references global average vehicle C-segment.  
Source: McKinsey & Company, 2024

# Transition to higher manganese cathodes is beginning

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



“High-manganese represents the **optimum cost-benefit ratio.**”

*Volkswagen, March 2021*



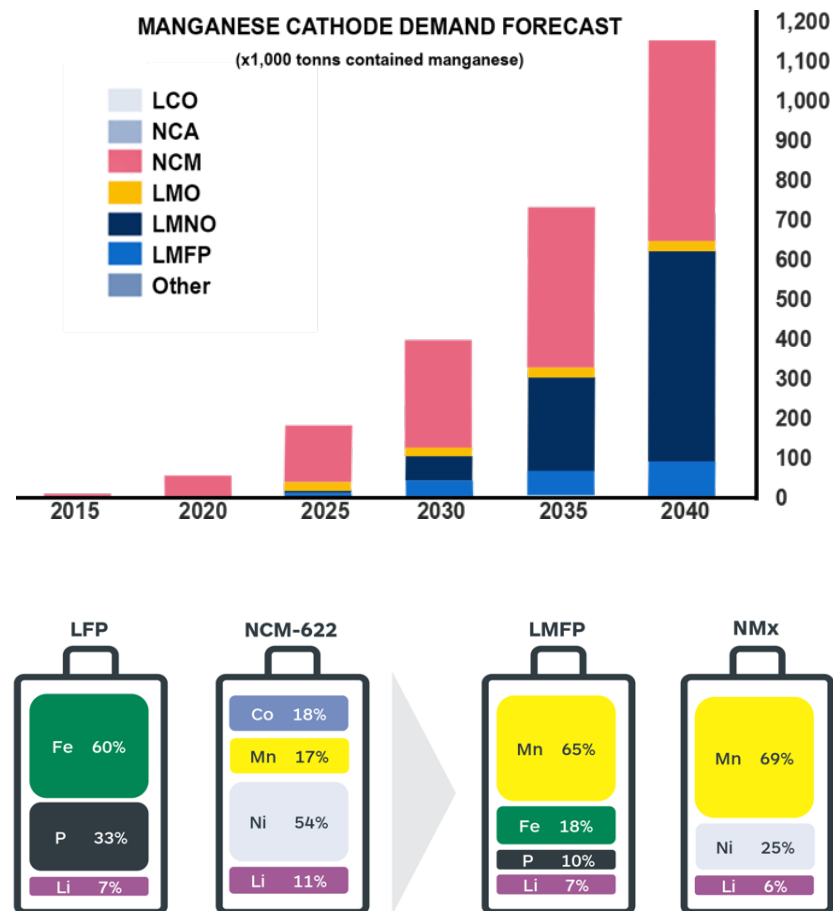
Li-Mn-rich technology shown as “**cost**” solution in electrification roadmap.

*BMW, November 2021*



Tesla is **working on new manganese battery cell.**

*Tesla, March 2022*

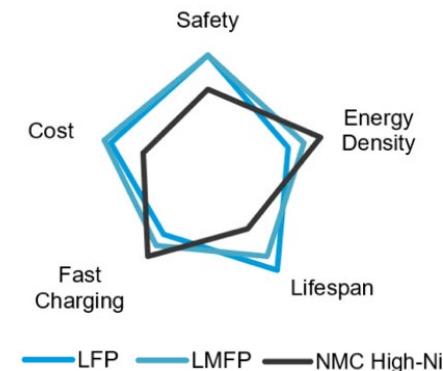




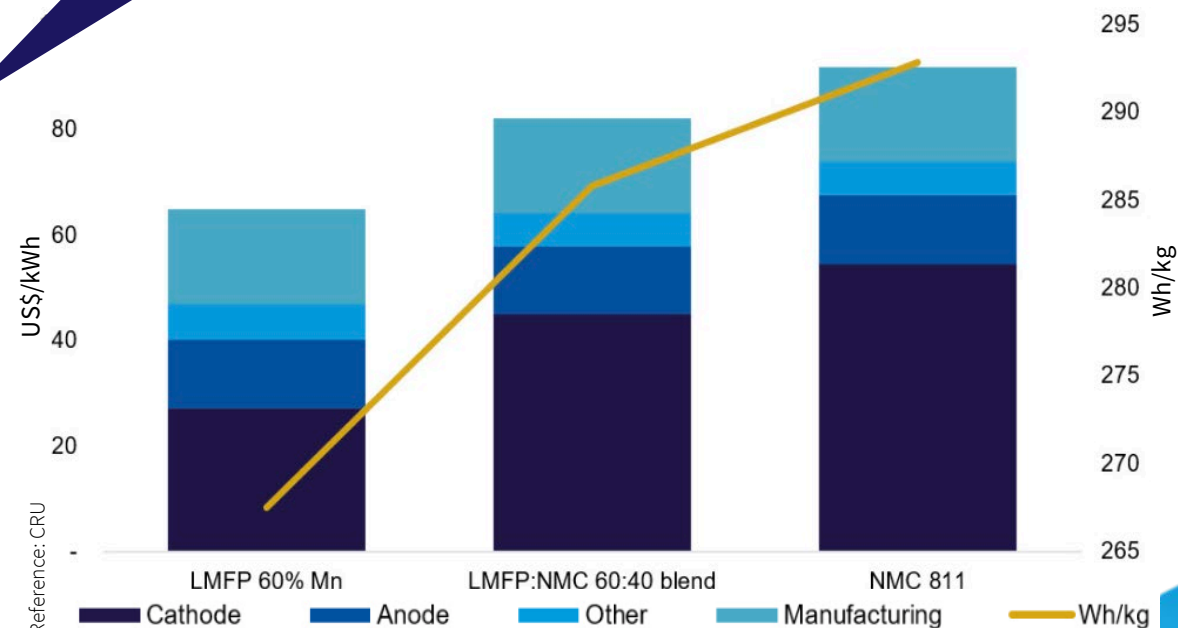
# Transition to higher manganese cathodes is underway

LMFP, LMNO and NM<sub>x</sub> cathode chemistries offer improved safety, higher energy density, reduced cost per kWh and greater supply chain flexibility.

**M is for Manganese.**  
Shift to higher manganese intensity cathodes is expected to continue beyond 2030.



	2010s		2020s		2030s	
1 Cathode	LCO <sup>1</sup>	LMO <sup>2</sup> LFP <sup>3</sup> NMC <sup>4</sup> /NCA <sup>5</sup>	LFP <sup>3</sup> NMC <sup>4</sup> /NCA <sup>5</sup>	LFP <sup>3</sup> NMC <sup>4</sup> /NCA <sup>5</sup> LMFP <sup>6</sup> /LMNO <sup>7</sup>	NMC <sup>4</sup> /NCA <sup>5</sup> LMFP <sup>6</sup> /LMNO <sup>7</sup> Sulphur	LMFP <sup>6</sup> /LMNO <sup>7</sup> Sulphur
2 Separator/ electrolyte	Polymer/Liquid	Polymer/Liquid	Polymer/Liquid	Polymer/Liquid	Polymer/Liquid Advanced liquid Semi-solid	Advanced liquid Semi-solid Solid
3 Anode	Graphite	Graphite	Graphite	Graphite Graphite and silicon	Graphite and silicon Lithium metal Silicon anode	Lithium metal Silicon anode
4 Casing	Cylindrical	Cylindrical Pouch	Prismatic Cylindrical Pouch	Prismatic Cylindrical Pouch	Cylindrical Pouch Prismatic	Cylindrical Pouch

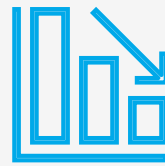


# Improved, cost-competitive process technology

## 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

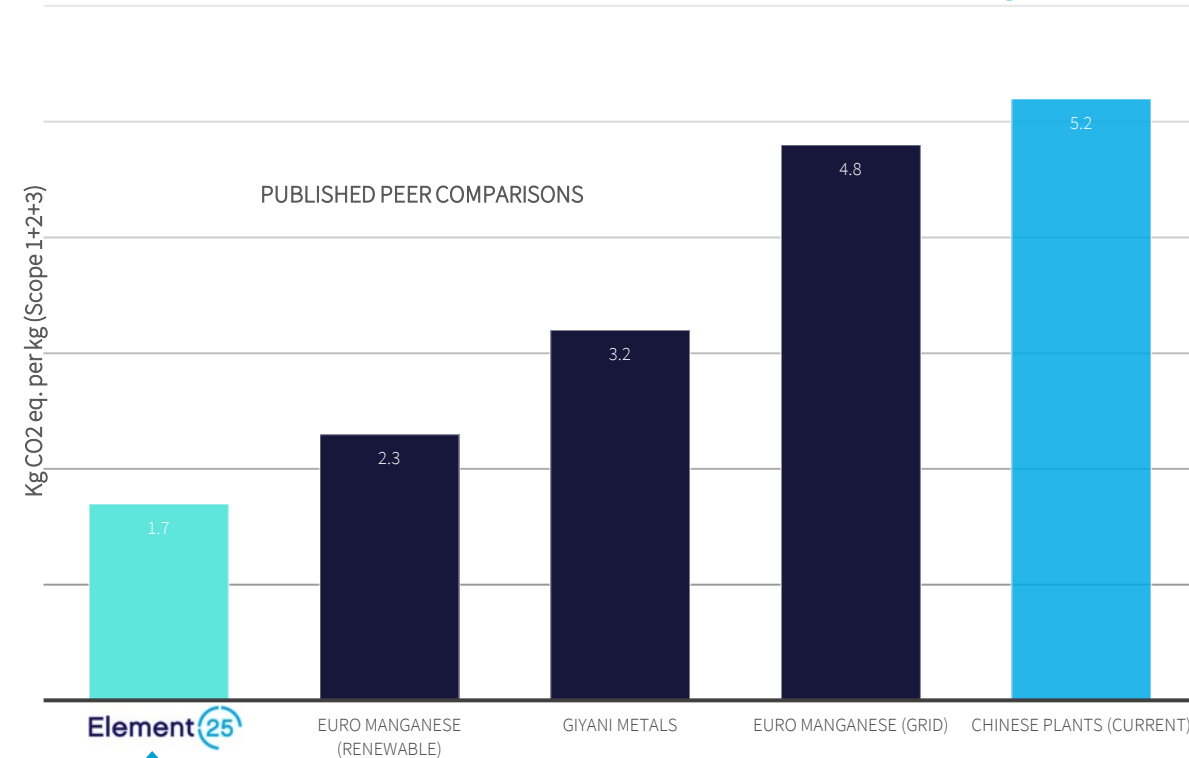
- More efficient (fast kinetics, reduced energy)
- Minimises reagent requirements
- Reduced carbon intensity
- Lower volumes of waste residues
- Non-toxic residues may be able to be repurposed.



# LCA demonstrates a low-carbon, ethical process

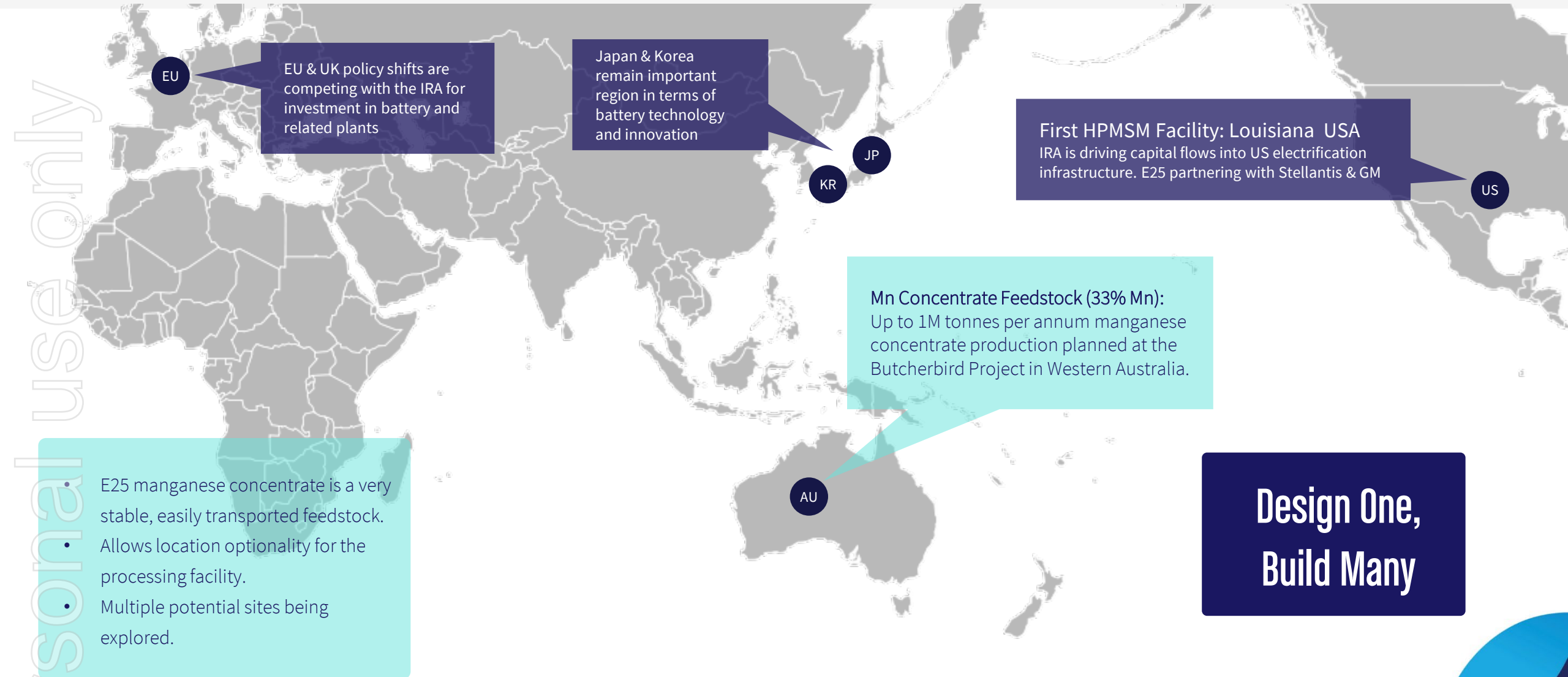
- LCA covers Scope 1, 2 and 3 emissions from mining through to the proposed USA-based HPMSM processing plant.
- E25 HPMSM to produce ~1.7kg of CO<sub>2</sub> for every 1kg of HPMSM:
  - ~67% lower than competitors in China.
  - up to 47% lower than competitors outside China.
  - ~26% lower than next 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>.

## Global Warming Potential



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

# Global refining capacity in the longer term





## Strong financial results underpinned by competitive capital and operating cost estimate



Cashflow

US\$155M

pre-tax average  
cashflow p.a. at  
full production  
(2 trains)



NPV

US\$1,662M

pre-tax (real)  
at full production  
Discount Rate 8%



IRR

29%

pre- tax at full  
production



Capital

US\$289M

for train 1 with an  
additional US\$187M  
required for train 2



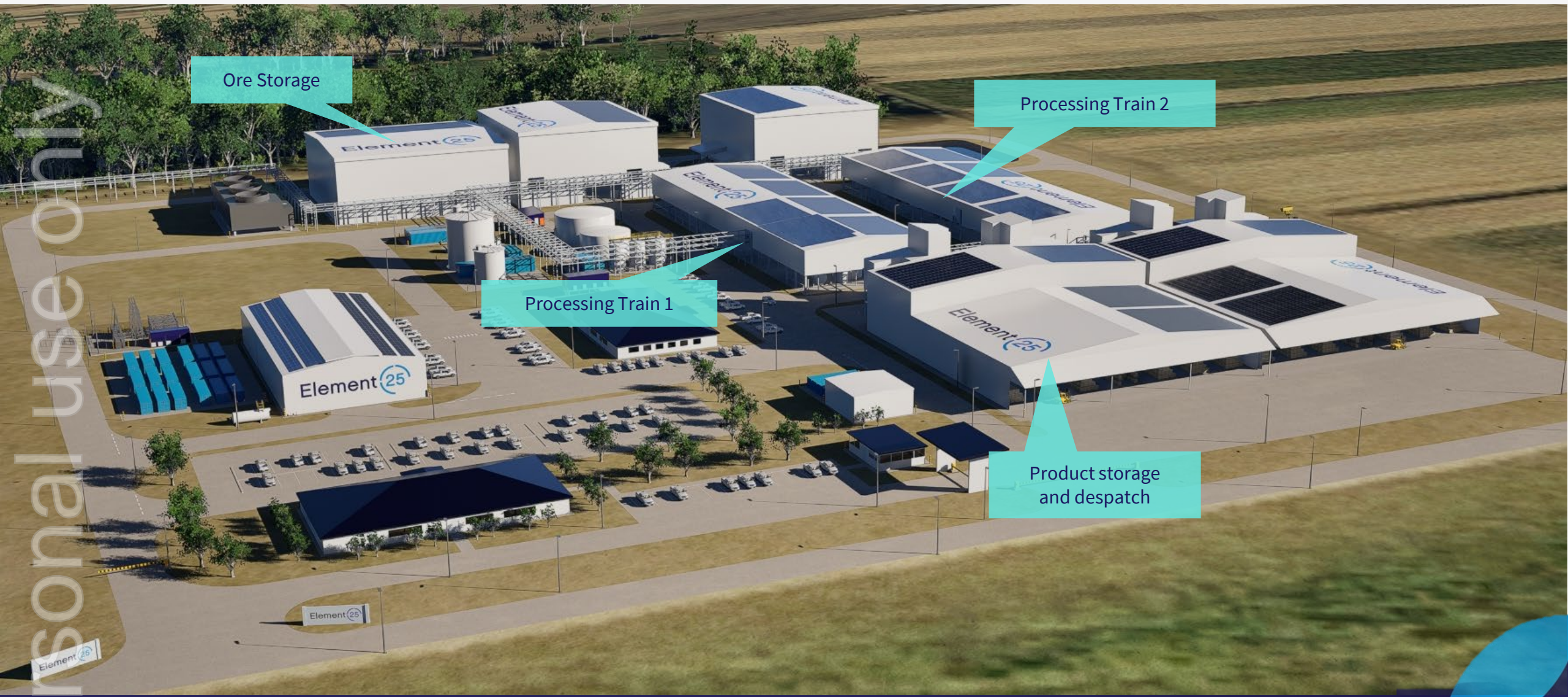
HPMSM

65,000 t/a

expanding to  
130ktpa with a  
second train



# Proposed HPMSM facility in Louisiana, USA



## Maiden Ore Reserve<sup>9</sup>

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 Resource<sup>9</sup>

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

- 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.



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](http://www.element25.com.au) which contains copies of all continuous disclosure documents to ASX, Competent Persons' Statements and Corporate Governance Statement and Policies.

## CONTACT US

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