

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

Disclaimer

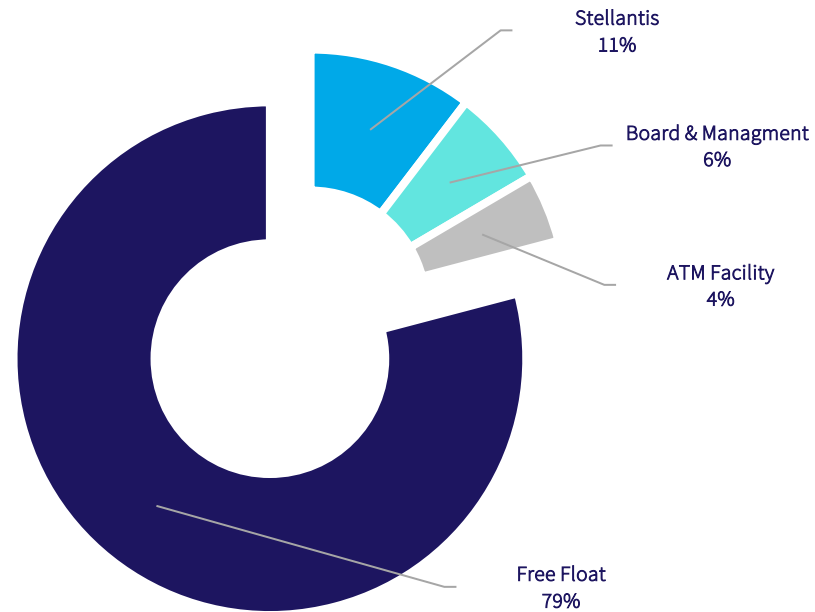
This presentation contains only a brief overview of Element 25 Limited and its associated entities ("Element 25") and their respective activities and operations. The contents of this presentation, including matters relating to the geology of Element 25's projects, may rely on various assumptions and 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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- 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

¹Reference: Company ASX Release dated 23 January 2024

²Reference: 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

Stage 1

1.1 Mt Mn Ore

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

Stage 2

Louisiana HPMSM

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

Stage 3

HPMSM Expansion

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

Stage 4

MnSO₄ Expansion

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

2-Year Plan

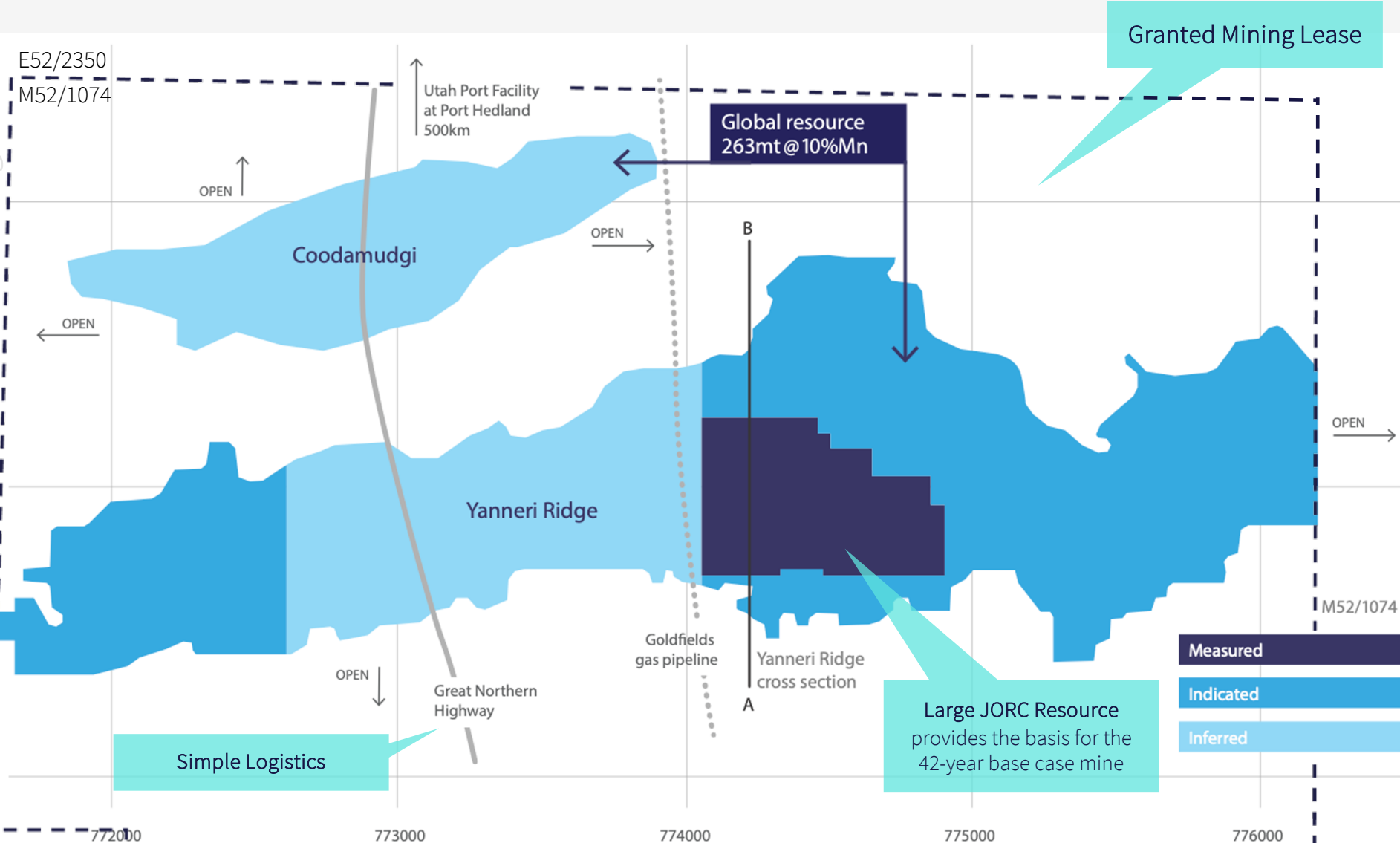
5-Year Plan

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



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Established Australian manganese operations



Process Water Storage

ROM Stocks

Main Access Road

Processing Plant

Ore Stockpiles
Feedstock for HPMSM
conversion



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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
- 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

AU\$49.8

(incl. contingency)



NPV₈

AU\$228M

(Pre-tax, real)



IRR

113%



Cashflow

AU\$57.3M

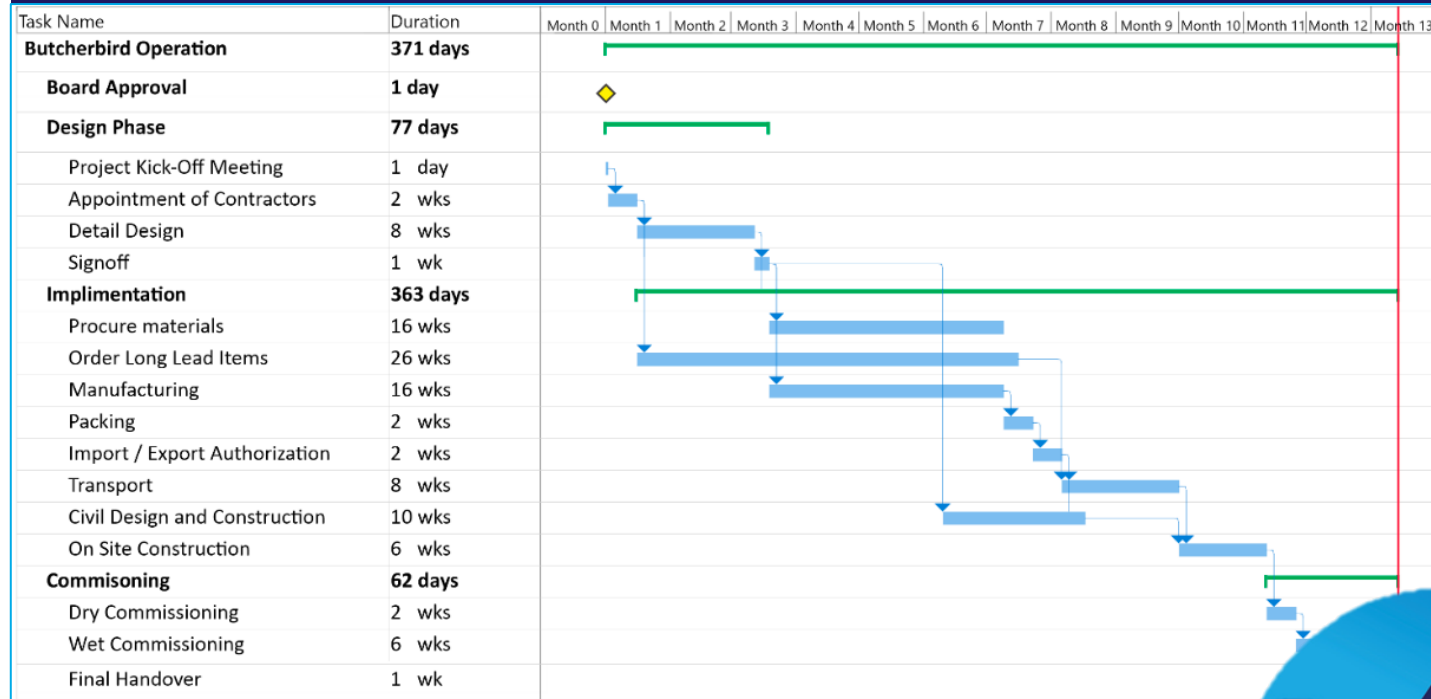
(annual)



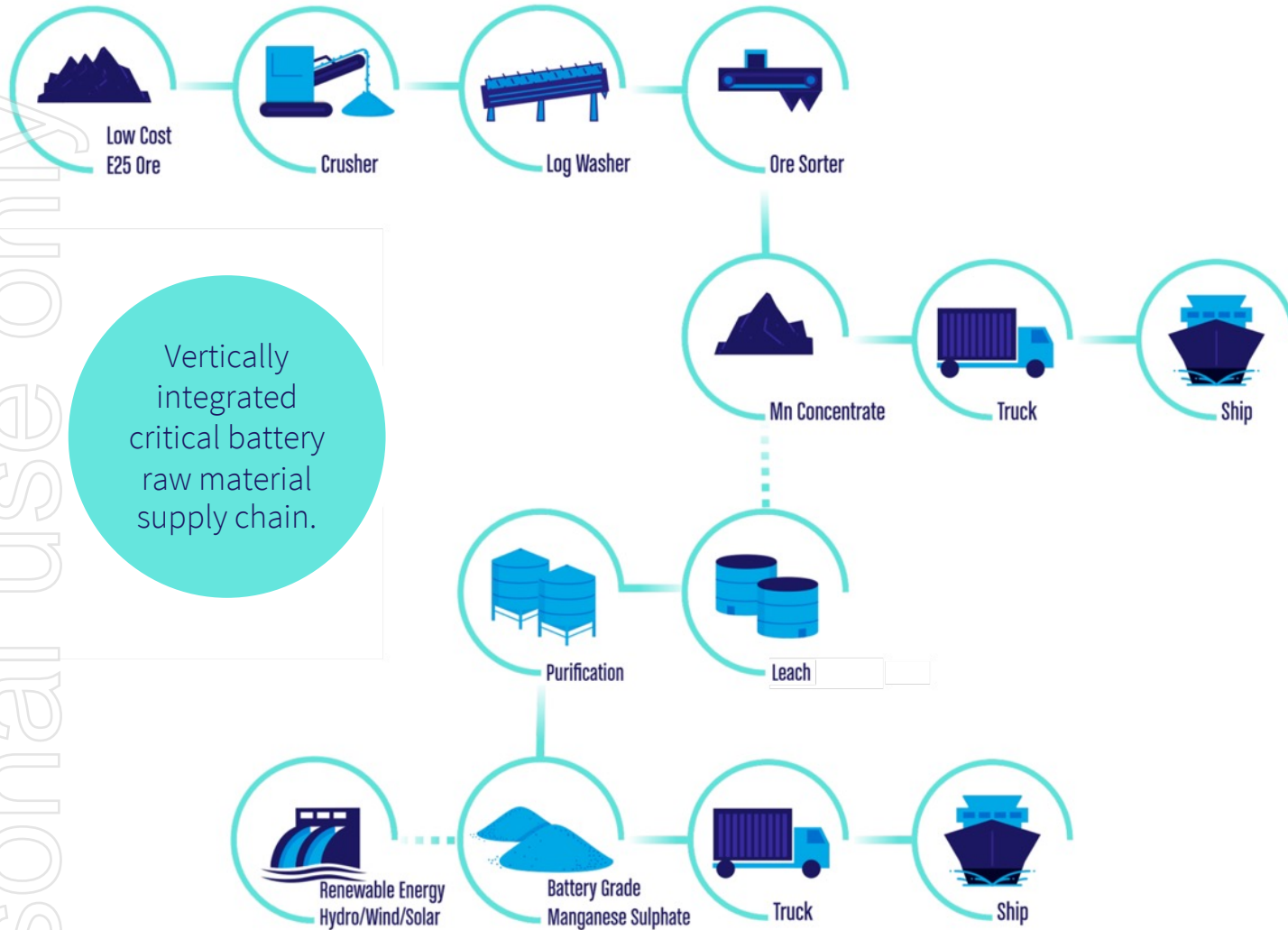
Payback

1.2

(years)



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

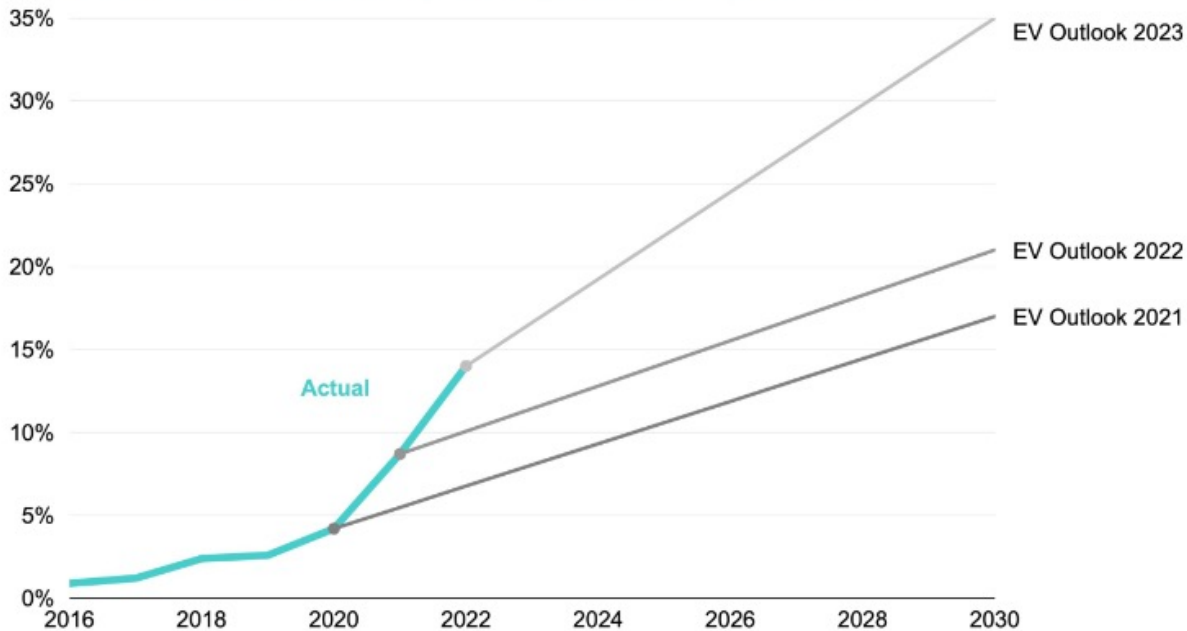
Louisiana manganese refinery will utilise the Australian ore as feedstock to produce high purity low carbon IRA compliant battery grade manganese sulfate.



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“...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

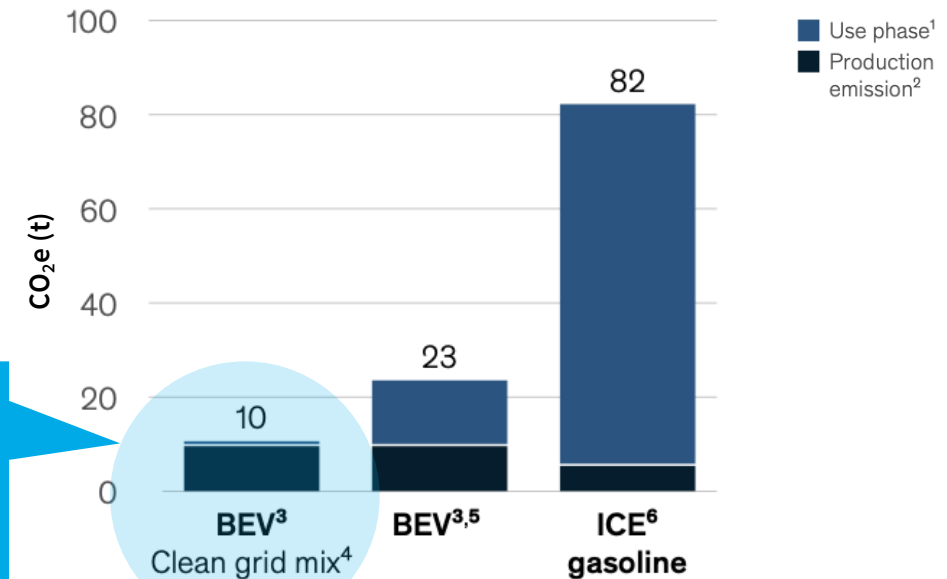


RMI – Energy. Transformed.

Source: IEA's STEPS scenarios from IEA's Global EV Outlooks via Hannah Ritchie

Lifetime CO₂e emissions by vehicle powertrain

United States



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

¹Estimated use phase of 243,000 km.

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

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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.**”

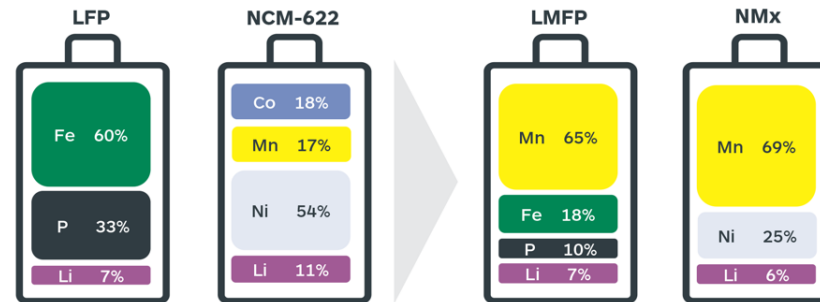
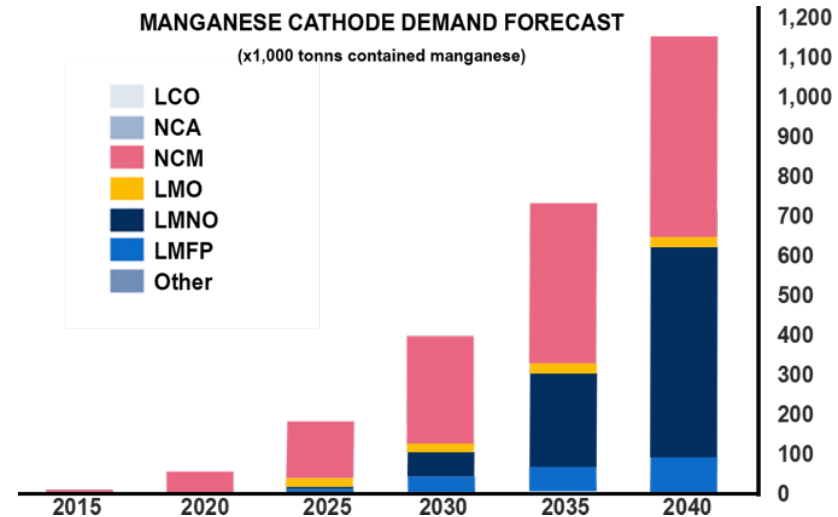
Volkswagen, March 2021

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

BMW, November 2021

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

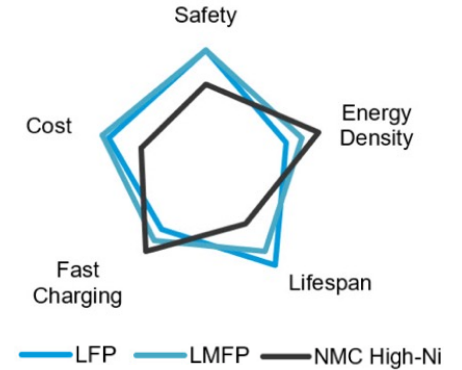
Tesla, March 2022



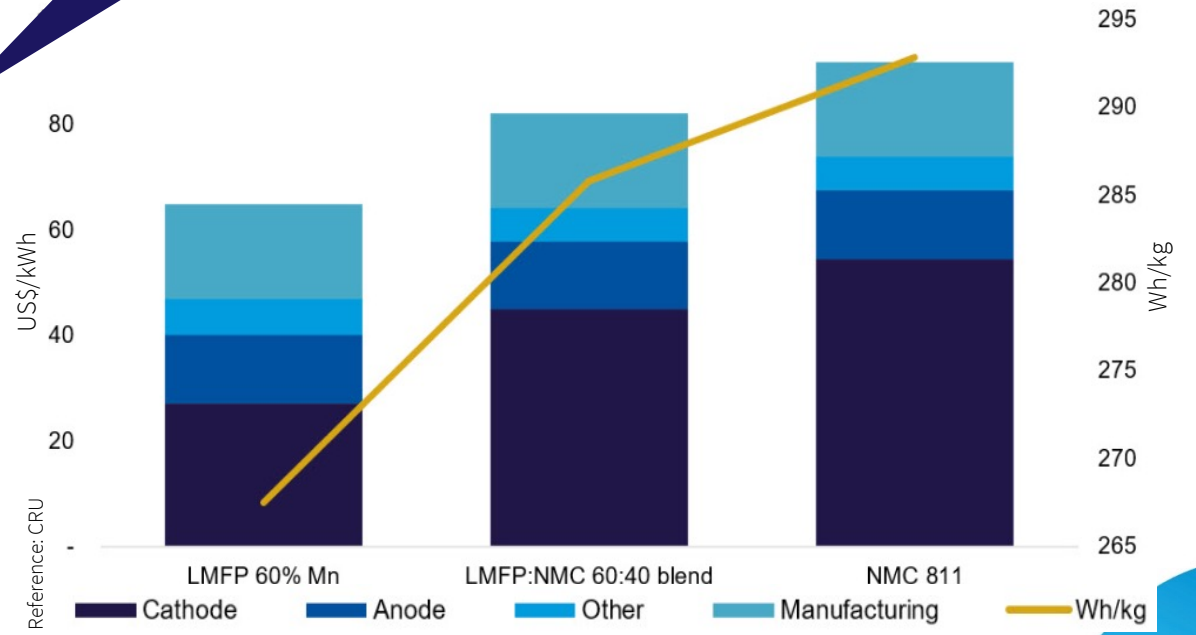
Transition to higher manganese cathodes is beginning

LMFP, LMNO and NM_x 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 ¹	LFP ³ NMC ⁴ /NCA ⁵	LFP ³ NMC ⁴ /NCA ⁵ LMFP ⁶ /LMNO ⁷
2 Separator/electrolyte	Polymer/liquid	Polymer/liquid	Polymer/liquid Advanced liquid Semi-solid Solid
3 Anode	Graphite	Graphite	Graphite and silicon Lithium metal Silicon anode
4 Casing	Cylindrical	Prismatic Cylindrical Pouch	Cylindrical Pouch Prismatic



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.

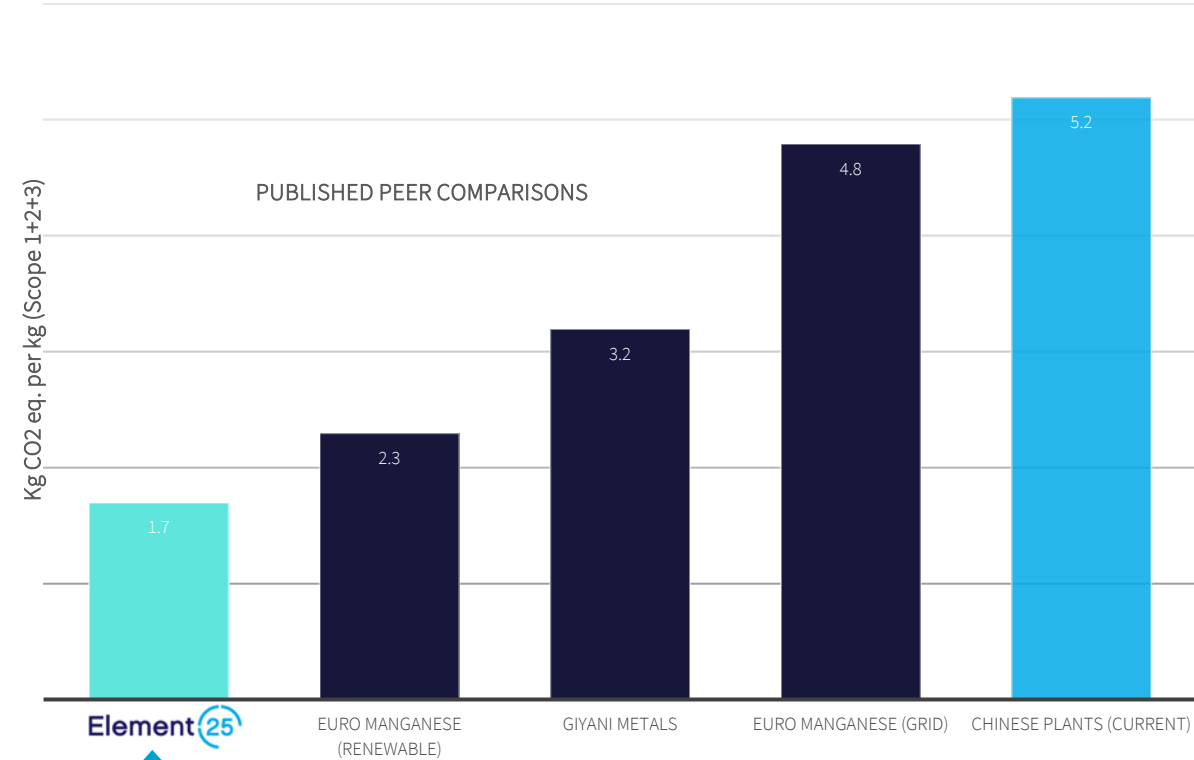


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LCA demonstrates a low-carbon, ethical process

- 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 CO₂ 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 CO₂.

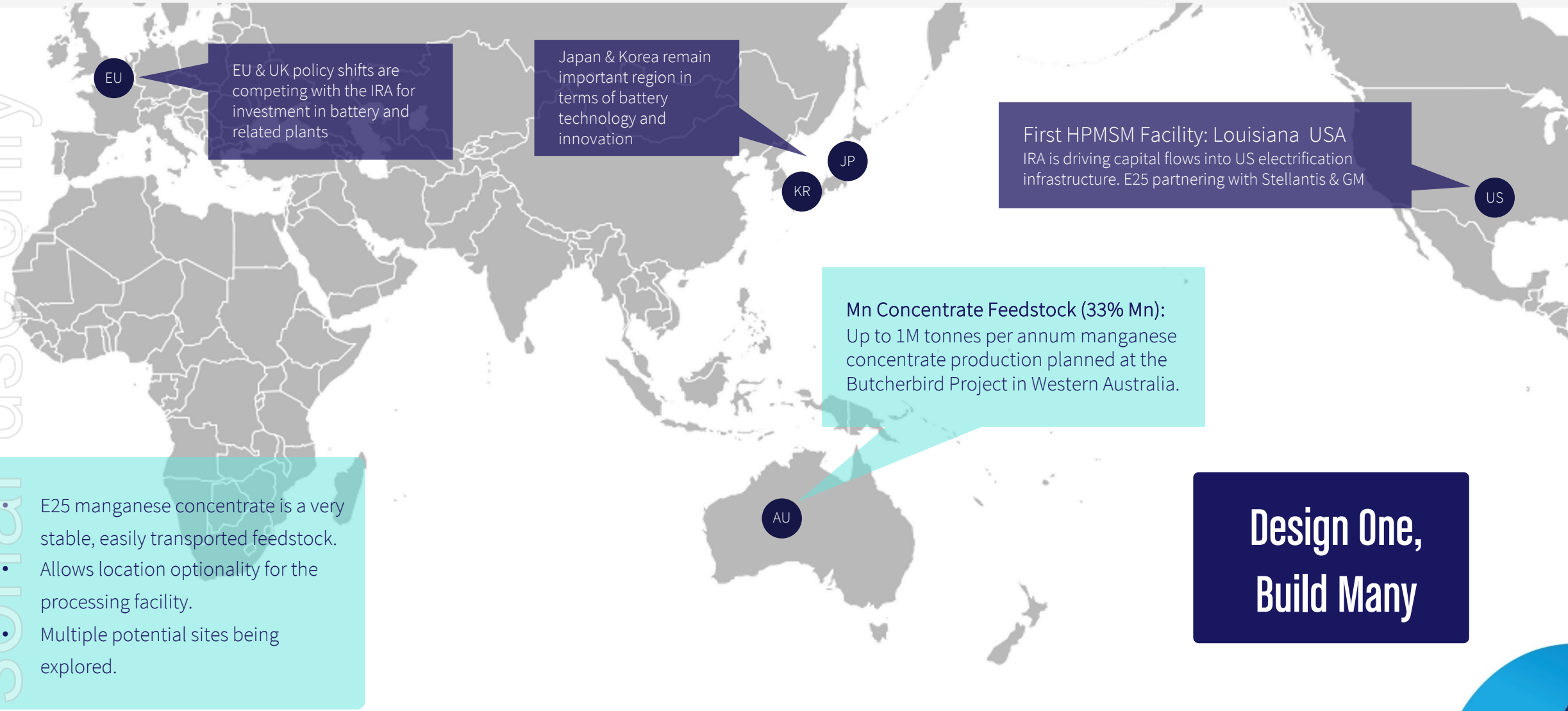
Global Warming Potential



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

Global refining capacity in the longer term

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E25 manganese concentrate is a very stable, easily transported feedstock.

- Allows location optionality for the processing facility.
- Multiple potential sites being explored.

**Design One,
Build Many**

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

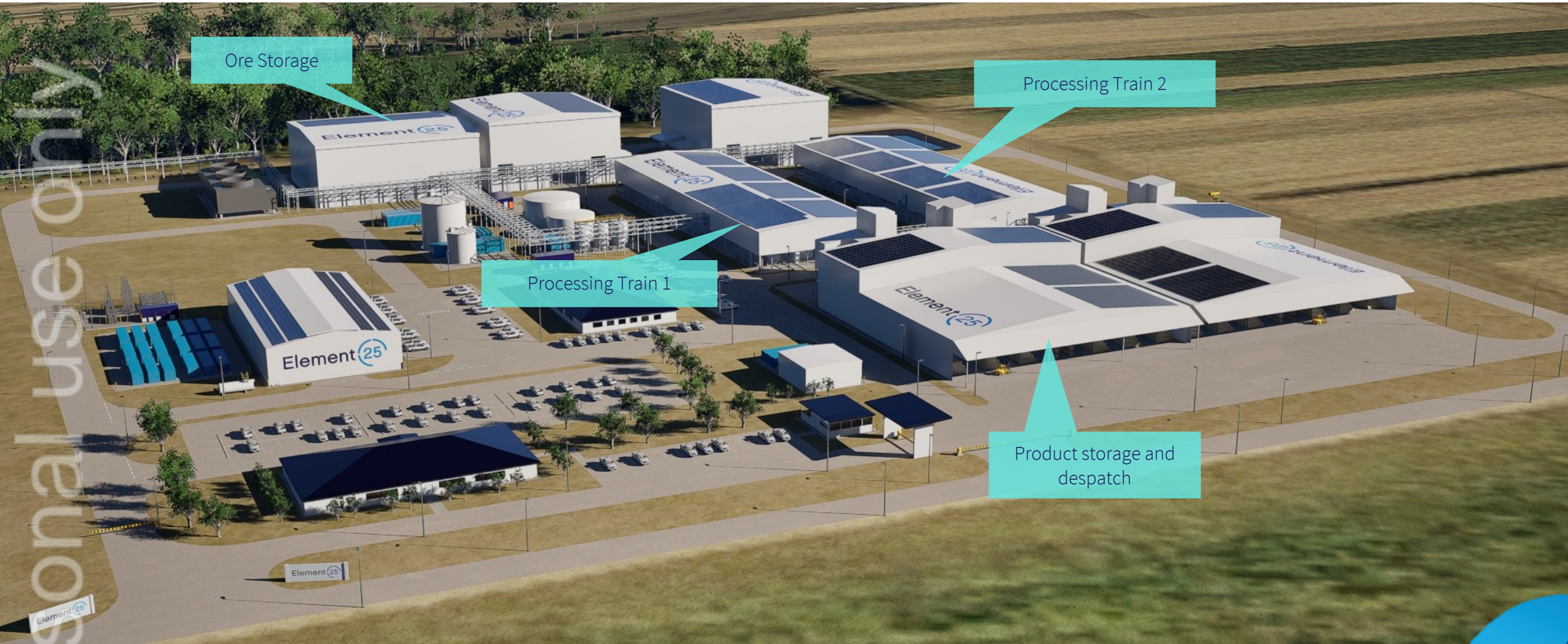


HPMSM

65,000 t/a

expanding to 130ktpa with a second train

Proposed HPMSM facility in Louisiana, USA



Ore Storage

Processing Train 2

Processing Train 1

Product storage and
despatch

Element 25

Element 25

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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

- 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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