

# Element 25 Limited Investor Update

Building a world-class Zero Carbon Manganese business

November 2021 AGM Presentation

Element 

# Introduction

## 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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The information contained in this presentation is not a substitute for detailed investigation or analysis of any particular issue. Current and potential investors and shareholders should seek independent advice before making any investment decision in regard to Element 25 or its activities.

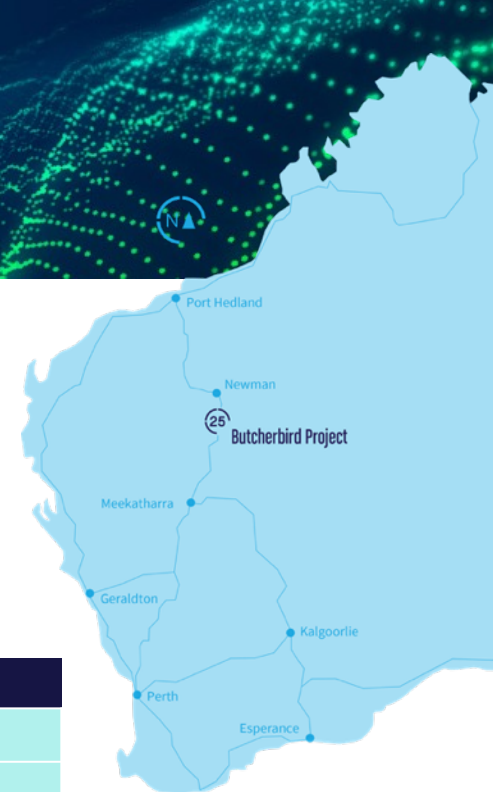
## Overview

Developing the world class **Butcherbird Manganese Project** in Western Australia to produce high quality manganese concentrate and High Purity Manganese (HPM) products for traditional and new energy markets.

### Financial Information

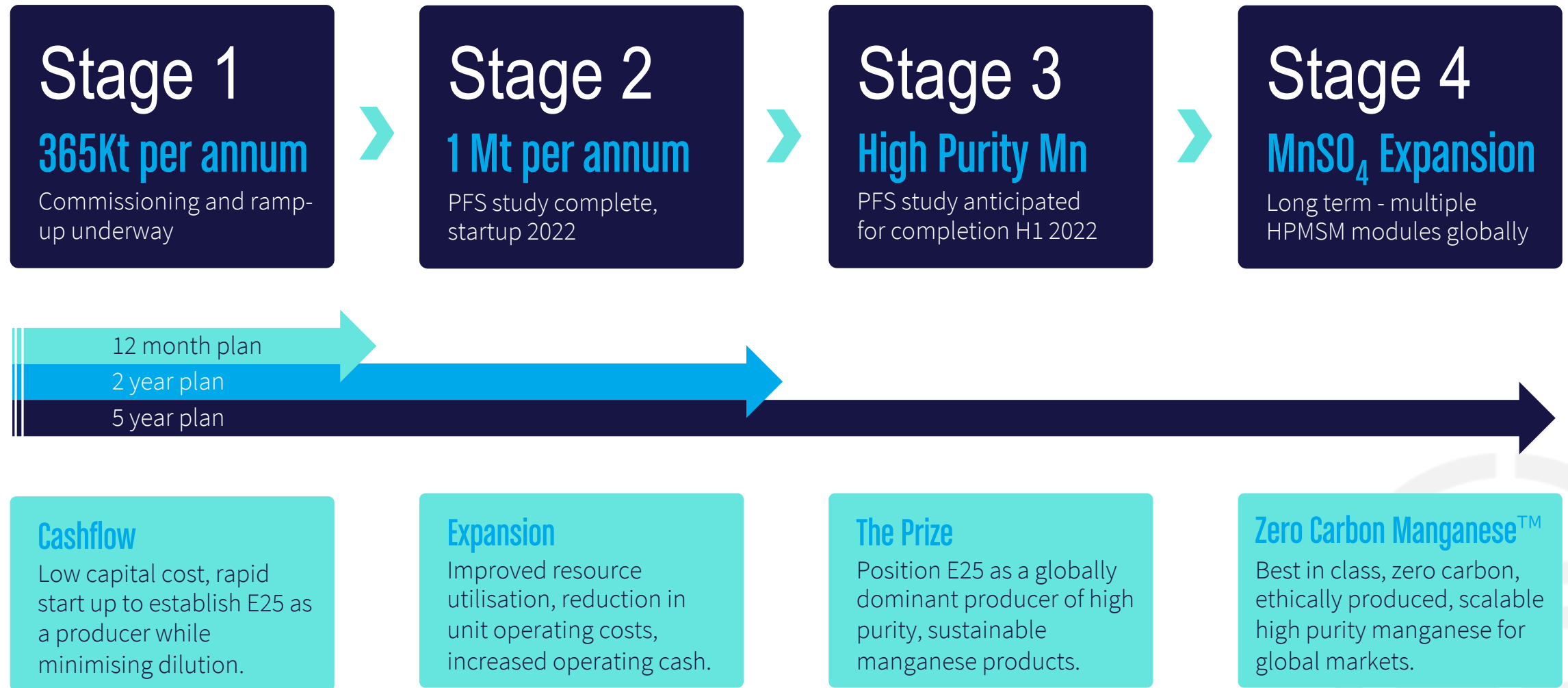
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| ASX Ticker      | E25    |
| Shares on Issue | 153M   |
| Share Price     | \$1.10 |
| Debt            | Nil    |

- Australia's largest onshore manganese deposit.
- >260 Mt of manganese ore in JORC resources<sup>1</sup>.
- Reserve containing 5.22 Mt of manganese<sup>2</sup>.
- 100% owned by Element 25 Limited.
- Located in WA, ranked #1 for mining investment<sup>3</sup>.
- Ethical, proven, sustainably regulated jurisdiction.
- Simple low-cost mining and processing.
- No blasting or dewatering required.
- Long mine life – 42 years using only 20% of the global resource, potential to improve.
- Outstanding economics<sup>2</sup>
- Excellent infrastructure: highway and gas pipeline



<sup>1</sup>Reference: Company ASX release 17 April 2019. <sup>2</sup>Reference: Company ASX Release 3 December 2020. <sup>3</sup>Reference: Fraser Institute Annual Survey of Mining Companies, 2019, <sup>4</sup>Reference: Company ASX Release 26 May 2021, <sup>5</sup>Reference: Company ASX Release 16 June 2021

# Our Strategic Vision...





# Not all manganese is created equal



E25 Manganese

## Serving the Established...

- Manganese (**Mn**) is the fourth most used metal on earth in terms of tonnage.
- Used in steel, specialty alloys and aluminium products.
- Traditionally the market has been dominated by the steel and alkaline battery industries.
- There is no substitute for manganese in steel.
- **E25 manganese concentrate and EMM feed this market.**

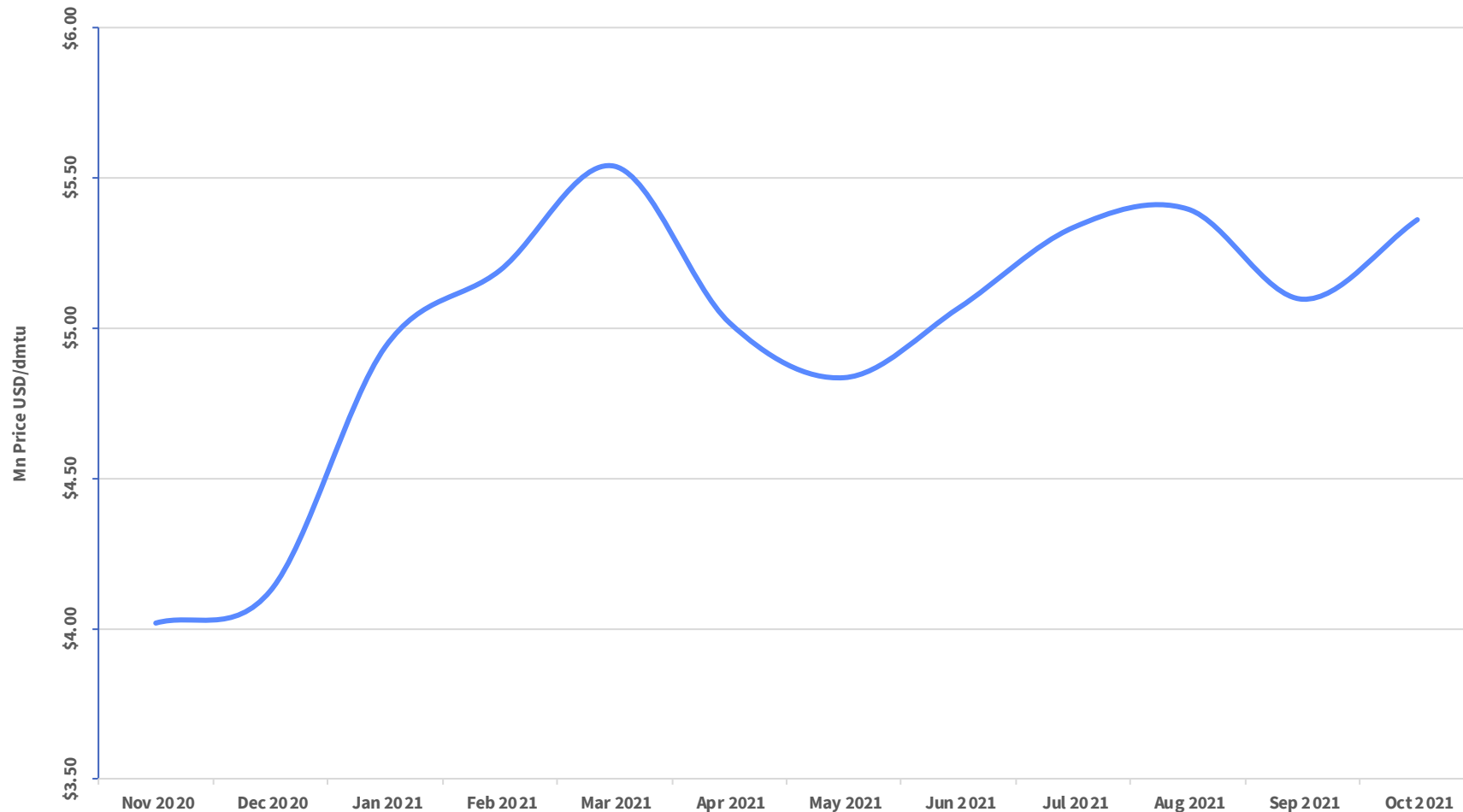
## And the Emerging...

- The electrification of the global vehicle fleet requires vast amounts of cathode materials.
- Nickel and cobalt supplies cannot meet projected demand for new energy vehicle (NEV) growth.
- Batteries are trending toward higher manganese content for safer, more cost-effective solutions.
- **E25 high purity manganese will feed these markets.**



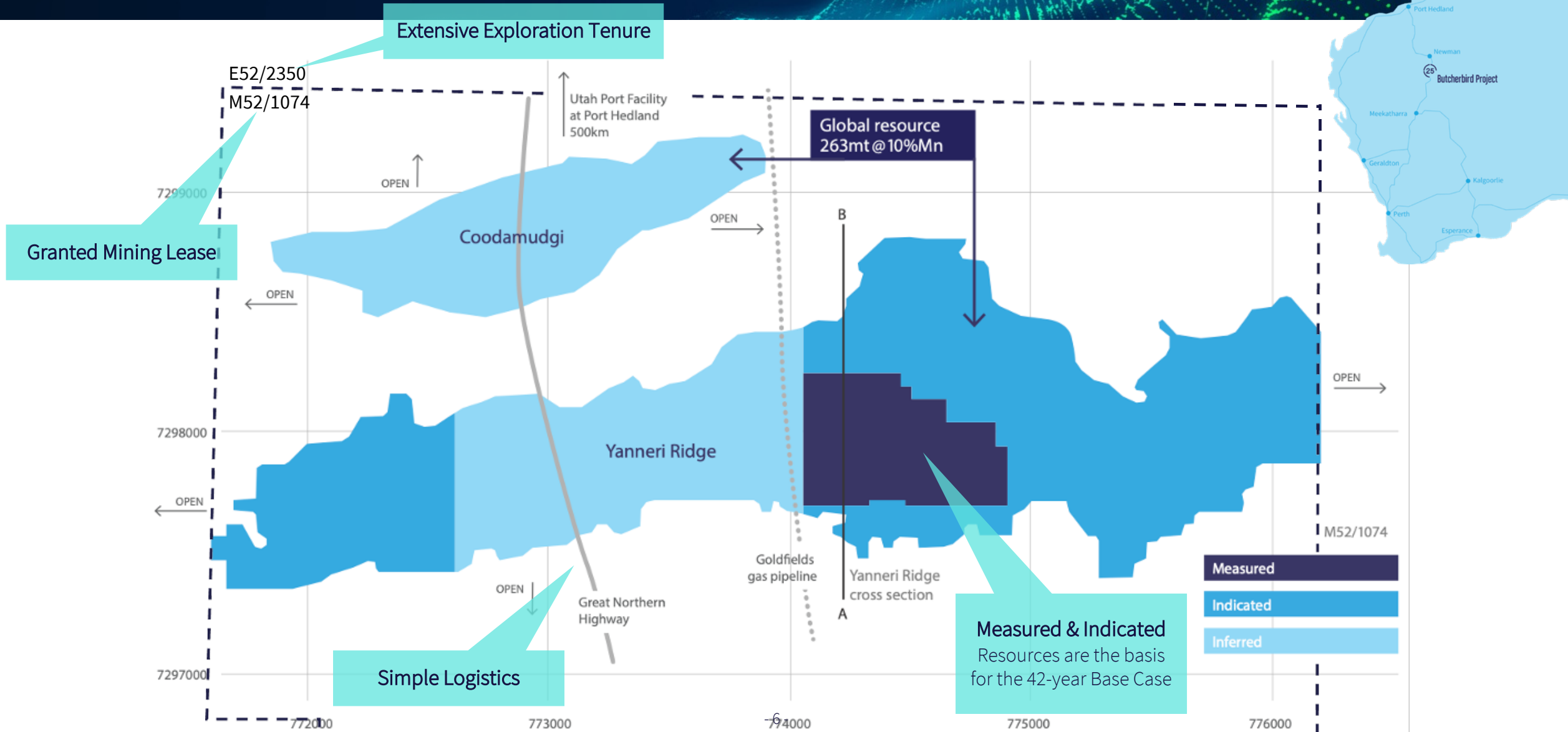
# Manganese prices - stable since commissioning

Manganese Price (44%Mn cif Tianjin)



- Fundamentals have favoured higher ore prices;
  - COVID Disruptions
  - Shipping congestion
  - Supply shortages
  - Elevated alloy prices
- Fundamentals remain sound going forward but may be impacted by seasonal factors in China.
- Supply side constraints likely to continue.
- Future incremental demand increases likely.

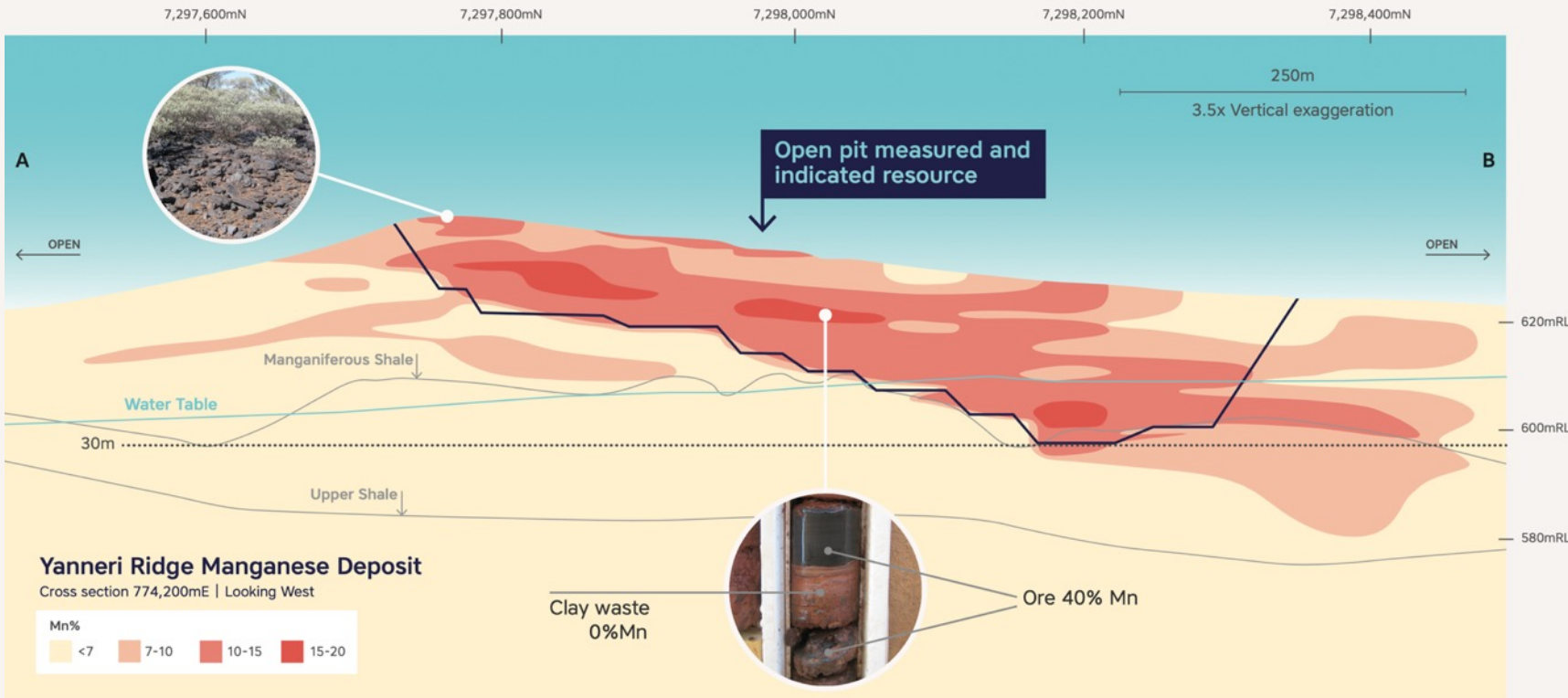
# Great infrastructure endowment, fully permitted





# Very simple geology equals low-cost, low environmental impact manganese units

| Classification | Tonnes (Mt) | Mn (%) | Contained Mn (Mt) |
|----------------|-------------|--------|-------------------|
| Resource       | 263         | 10.0   | 20.8              |
| Reserve        | 50.6        | 10.3   | 5.22              |



## RESOURCE GROWTH POTENTIAL

- Enough resource base for multi-decade long expansion pathway.
- Can produce concentrate, battery grade HPMSM and EMM without resource limitation.

## ENVIRONMENTALLY BENIGN OPERATION

- Ore from surface
- No explosives required
- No waste water
- One reagent – water
- Extremely low levels of contaminants

# Stage 1: Operational, ramping up to nameplate

- 20-year Mining Lease granted
- All Stakeholder Agreements finalised
- Processing water confirmed and permitted
- Fully funded with no debt
- Operation is fully permitted
- Stage 1 is operational
- Stage 2 fully funded to provide expanded concentrate sales and provide feed for  $MnSO_4$  conversion

Maiden product shipment July 2021



**Stage 1**  
**Low impurity Mn concentrate**  
Operating and ramping up.  
Two shipments dispatched.



**Stage 2**  
**Expanded Mn concentrate**  
PFS study complete, fully funded.  
Startup planned for 2022.



# Stage 1: Project Delivery Complete - Ramp Up Underway



ROM Stocks

Process Water Storage

Tails Storage

Main Access Road

Ore Stockpiles

Processing Plant



# Concentrate Business- Cost/Revenue Drivers...

## Key Revenue/Margin Drivers

- Shipping
  - significant COVID related congestion has increased costs
  - E25 margins are directly impacted by increased shipping tariffs.
  - E25 receives a CIF price with shipping deducted, paid FOB.
- Manganese price
  - currently firm at >USD\$5/dmtu, macro conditions supportive.
  - stockpiles in China reducing.
- Forex
  - E25 operates in AUD and sells in USD.
- Site costs
  - largely fixed, with variable per tonne costs, throughput sensitive.

## E25 Challenges

- Throughput
  - Debottlenecking the process plant (scalping screen/crusher)
- Grade
  - Improved geological control, optimize processing to reduce dilution.
- Efficiencies
  - Higher product volumes for the same/lower equipment/labour.
- Expansion
  - Economies of scale, reduced costs, larger shipments.



## Macro-economic Factors

Manganese Price (no hedging)  
AUD:USD Exchange Rate (no hedging)  
Inflation pressures  
Labour market constraints  
COVID related shipping congestion and costs

## Quarterly Cashflow Comments

Revenues reported for the sale of 53Kt product.  
Production volumes of approximately 73 Kt.  
Shipping costs peaked at \$56/t.  
Current ship booked at a 45% reduced tariff.  
Throughput expected to reach nameplate Q1 2022.

# Our Goal- The Concentrate for Stages 1 & 2 is Feed for Stage 3...

## Manganese Concentrate

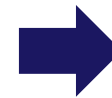
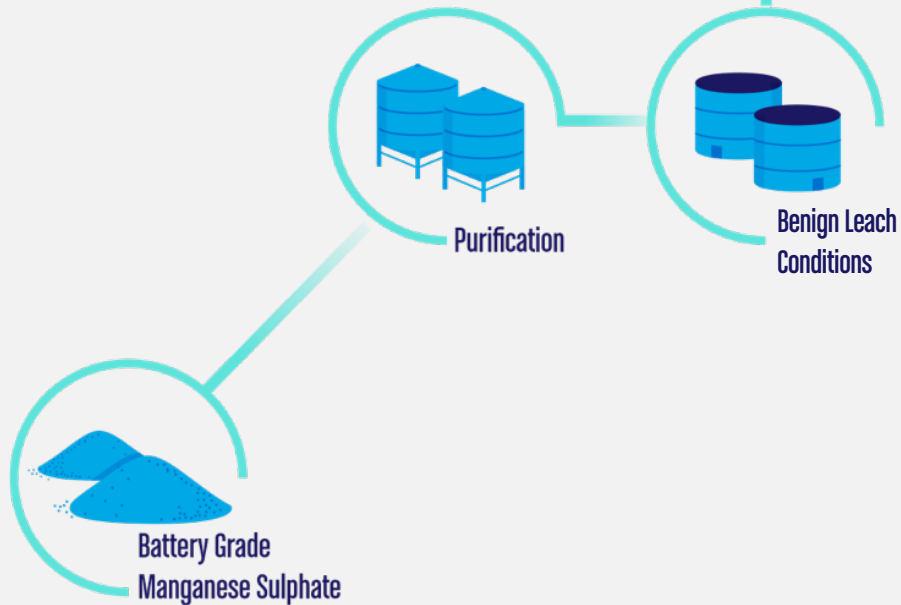


### Stage 1

First production of manganese concentrate to sell to steel alloy manufacturers

## Battery Grade Manganese Sulphate (MnSO<sub>4</sub>)

Test work is utilising run-of-mine product



### Stage 2

Expansion of the concentrate production to produce manganese feedstock to convert to HPMSM



### Stage 3

Serving the New Energy Vehicle Markets by converting the concentrate to HPMSM using renewable energy



# New Energy Vehicle (NEV) Demand Growing MUCH Faster

**58% by 2040**

percentage of new vehicles that will be EV or hybrid

**54 million**

EV passenger sales by 2040

**from 2033**

decline emissions from road transport

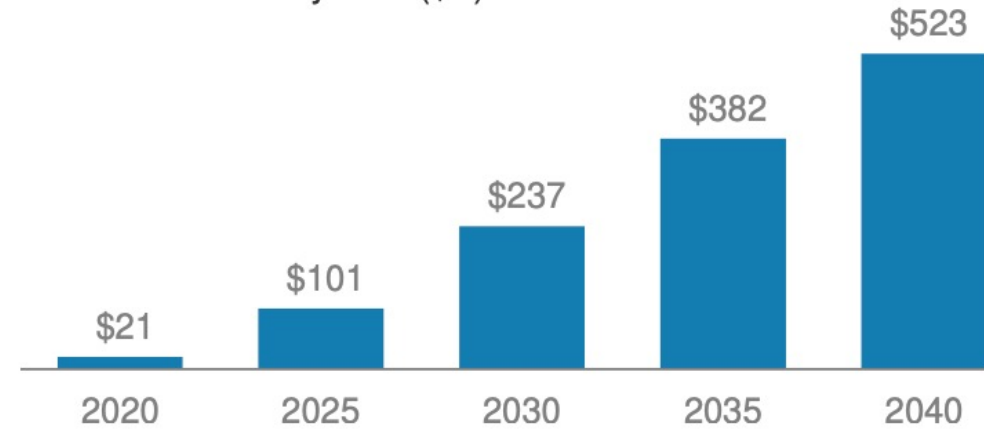
**17.6M by 2040**

barrels of oil displaced by EVs each day

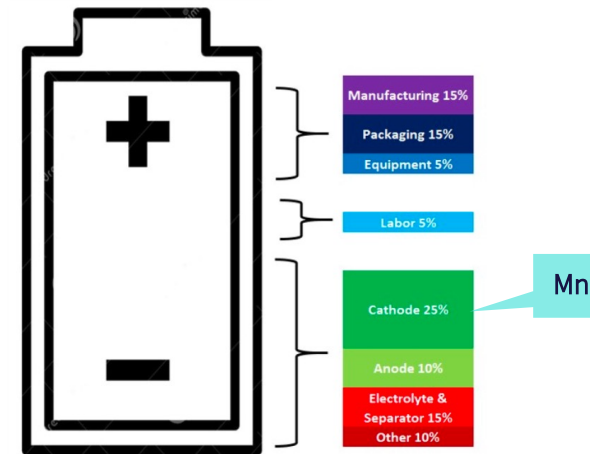
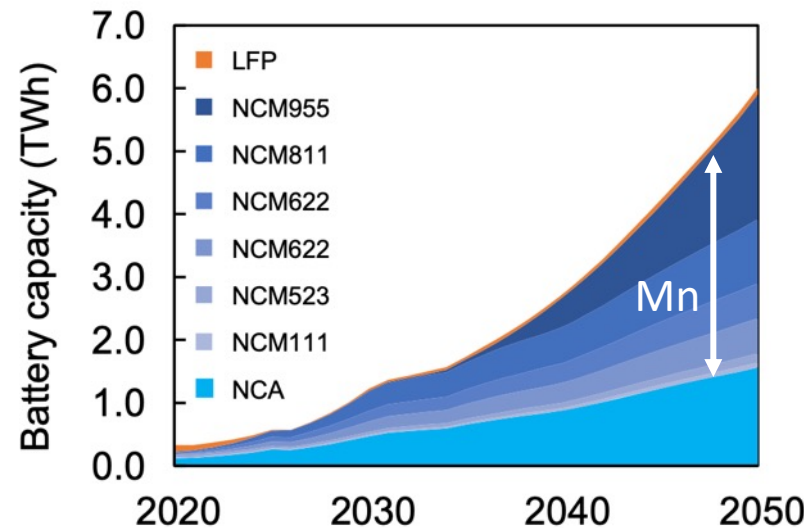
“It is reasonably straight forward to do a cathode that is two-thirds nickel and one-third manganese...”

Elon Musk, Tesla

Global EV Battery TAM (\$B)



Source: Company data, Morgan Stanley Research



# If not manganese, then what?

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**from 2033**

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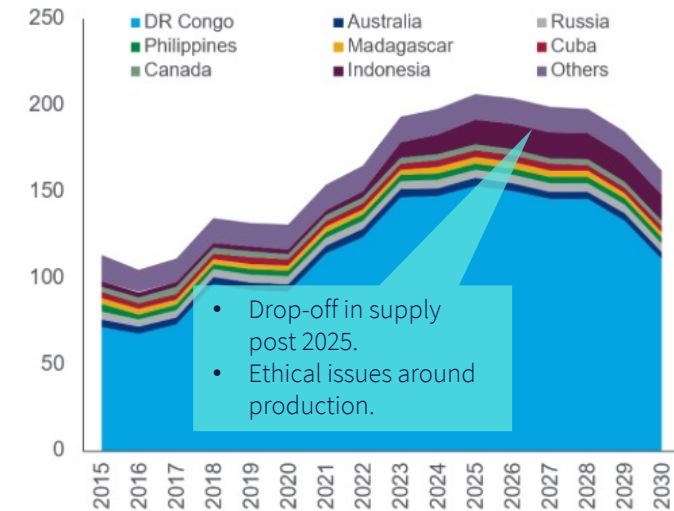
barrels of oil displaced by EVs each day

“In order to save battery costs, VW wants to use nickel and manganese for the cells in the volume segment and, if possible, do without the – more expensive – cobalt...”

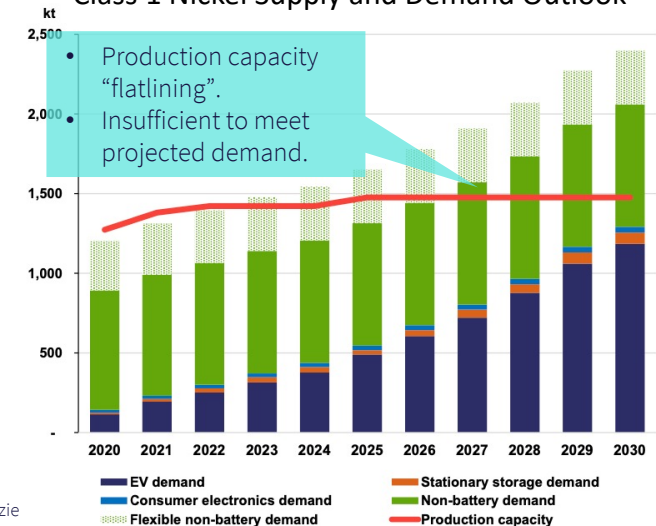
*The Driven, March 2021*

- Manganese is the cheapest, most abundant of the NMC cathode materials (Ni,Mn,C).
- Nickel and cobalt have supply constraints, manganese does not.
- For cobalt, there are serious ethical concerns around production methods<sup>1</sup>.
- Manganese is perfectly placed to provide the material needed to satisfy the worlds hunger to electrify.
- **Battery makers have manganese rich cathode designs in their roadmaps post 2025.**

Global mined cobalt output (Kt)



Class 1 Nickel Supply and Demand Outlook



<sup>1</sup><https://www.visualcapitalist.com/ethical-supply-the-search-for-cobalt-beyond-the-congo/>

# Low cost, efficient HPMSM process – significant improvements...

## Current Manganese Concentrate Processing Technologies

- Leach - sulphuric acid leach of African/Local carbonate ores or roast reduction.
- Purification – toxic fluorine and/or sulphide reagents (toxic chemicals/waste)
- Dissolution of high purity EMM into  $\text{MnSO}_4$  solution (high energy costs).
- Slow kinetics, high embedded energy, not ESG compliant.
- Geopolitical/jurisdictional issues come into play.

## Element 25 Process

- Leach – rapid, low temperature leach using readily available  $\text{CO}_2$  neutral reagent.
- Purification – minimal non-fluorine, non-sulphide based process.
- Low energy consumption and significantly reduced residue volumes.
- Residue streams may be able to be repurposed, further minimizing residue volumes.
- Jurisdictional advantages – Tier 1, ESG compliant location.
- These enhancements are also complementary to the production of EMM.

## Problems with Current Technologies

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

## Advantages of E25 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.



# If not manganese, then what?



**Volkswagen**



**TESLA**



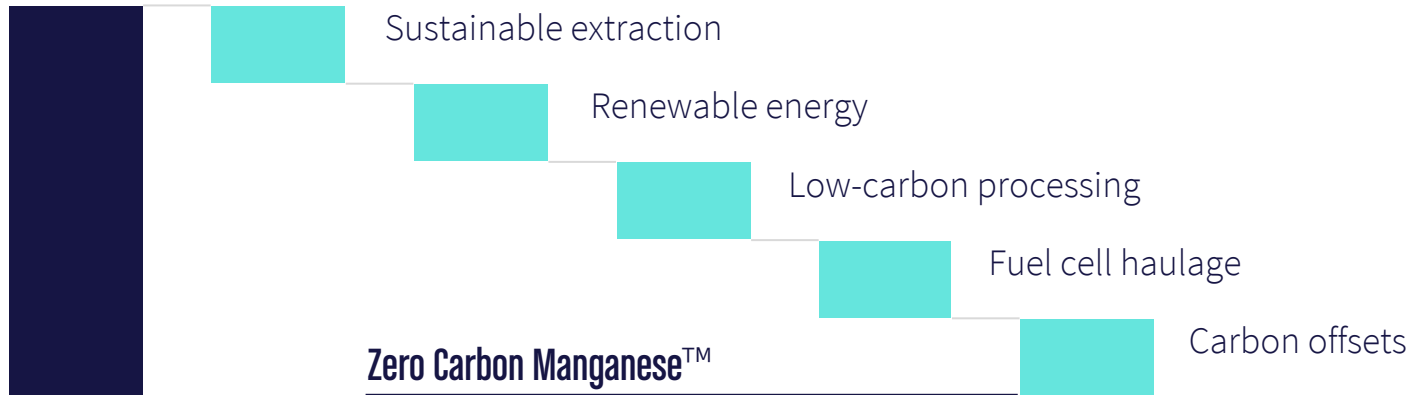
- OEMs including VW, Tesla and Stellantis have announced moves to high **manganese** cathodes.
- High **manganese** means better energy density and lower cost.
- Transition will require large volumes of high purity **manganese** sulphate (HPMSM).
- Some analyst estimates predict a deficit of up to 1.3Mt per annum by 2030.
- Element 25 is targeting this market for its decade long growth strategy.
- Discussions underway in relation to potential offtake partners in this segment.

# Our Journey – Element 25 has a well advanced flowsheet and business strategy...



■ Historical ■ Projected

# Zero Carbon Manganese™ – ESG considerations integral to our thinking



## Other potential pathways that Element 25 is investigating:

- Extensive wind and solar resource data set collected at site (>1 year)
- Energy modelling confirmed cost advantage with renewable solutions
- Green hydrogen powered mine fleet and bulk haulage
- Battery powered bulk haulage trucks to be made available in Australia shortly
- Green hydrogen reduction reagent potential (similar to “Green Steel”)
- Supply chain transparency and ESG accounting
- Collaboration with other ESG focused companies to pursue new solutions

**Sustainable Extraction**



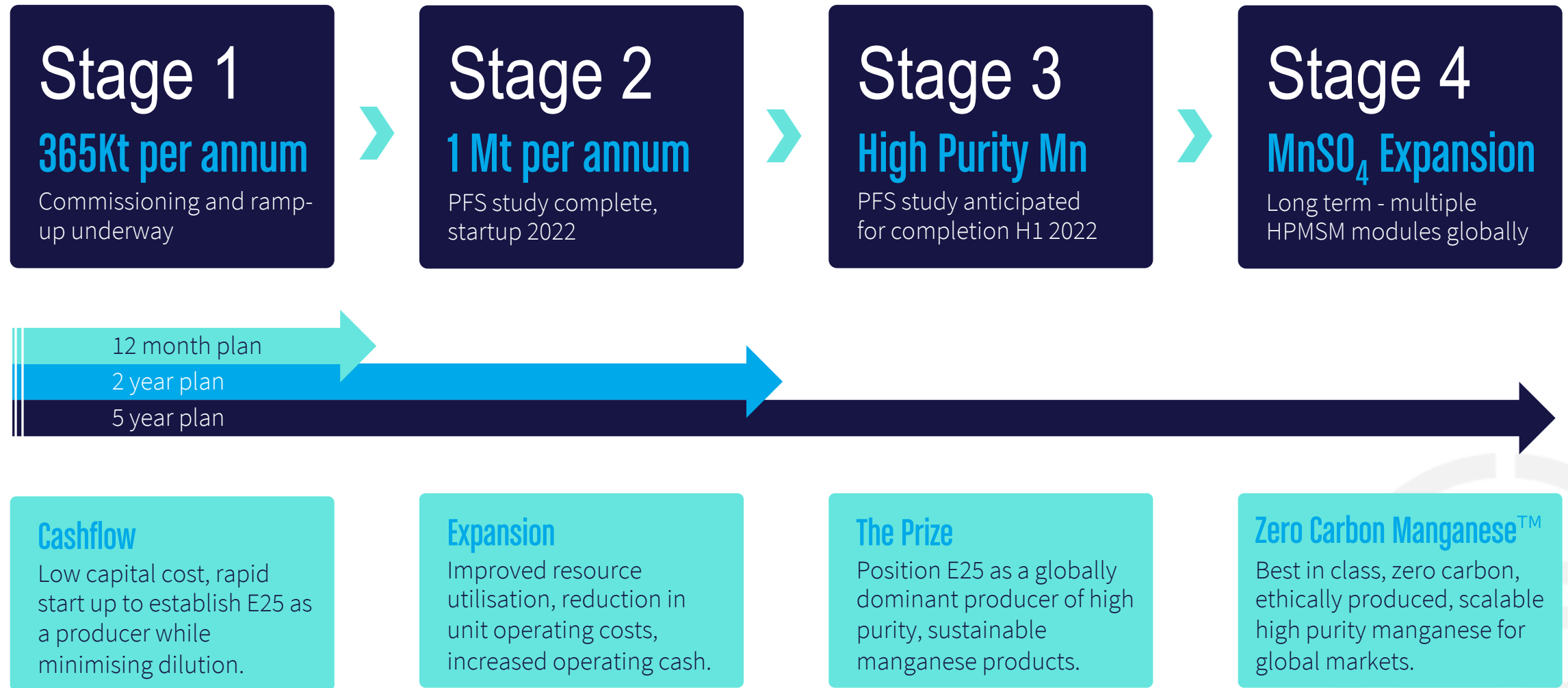
**Renewable Energy  
Powered Processing**



**New Energy Fuel**



# Our Strategic Vision...



# Thank you

For more information, please contact Element 25 Limited:

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[www.element25.com.au](http://www.element25.com.au)

Element 

# Reserves and Resources

## Maiden Ore Reserve<sup>1</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>2</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.

<sup>1</sup>Reference: Element 25 Limited ASX release dated 19 May 2020.

<sup>2</sup>Reference: Element 25 Limited ASX releases dated 17 April 2019.



# 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 17 April 2019. 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 19 May 2020. 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.

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