

# Element 25 Limited

## Investor Update – Commissioning for Growth

Building a world-class Zero Carbon Manganese™ business

September 2021 - Investor Update

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.

This presentation contains a number of forward-looking statements. Known and unknown risks and uncertainties, and factors outside of Element 25's control, may cause the actual results, performance and achievements of Element 25 to differ materially from those expressed or implied in this presentation.

To the maximum extent permitted by law, Element 25 does not warrant the accuracy, currency or completeness of the information in this presentation, nor the future performance of Element 25, and will not be responsible for any loss or damage arising from the use of the information.

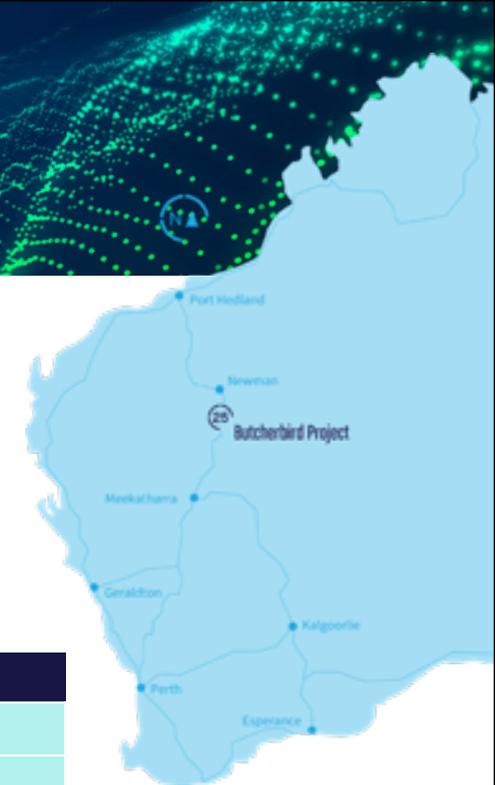
The information contained in this presentation is not a substitute for detailed investigation or analysis of any particular issue. Current and potential investors and shareholders should seek independent advice before making any investment decision in regard to Element 25 or its activities.

## 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	
ASX Ticker	E25
Shares on Issue	149M
Share Price	\$1.91 (27 Sept. 2021)
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

# Not all manganese is created equal



E25 Manganese

## Serving the Old...

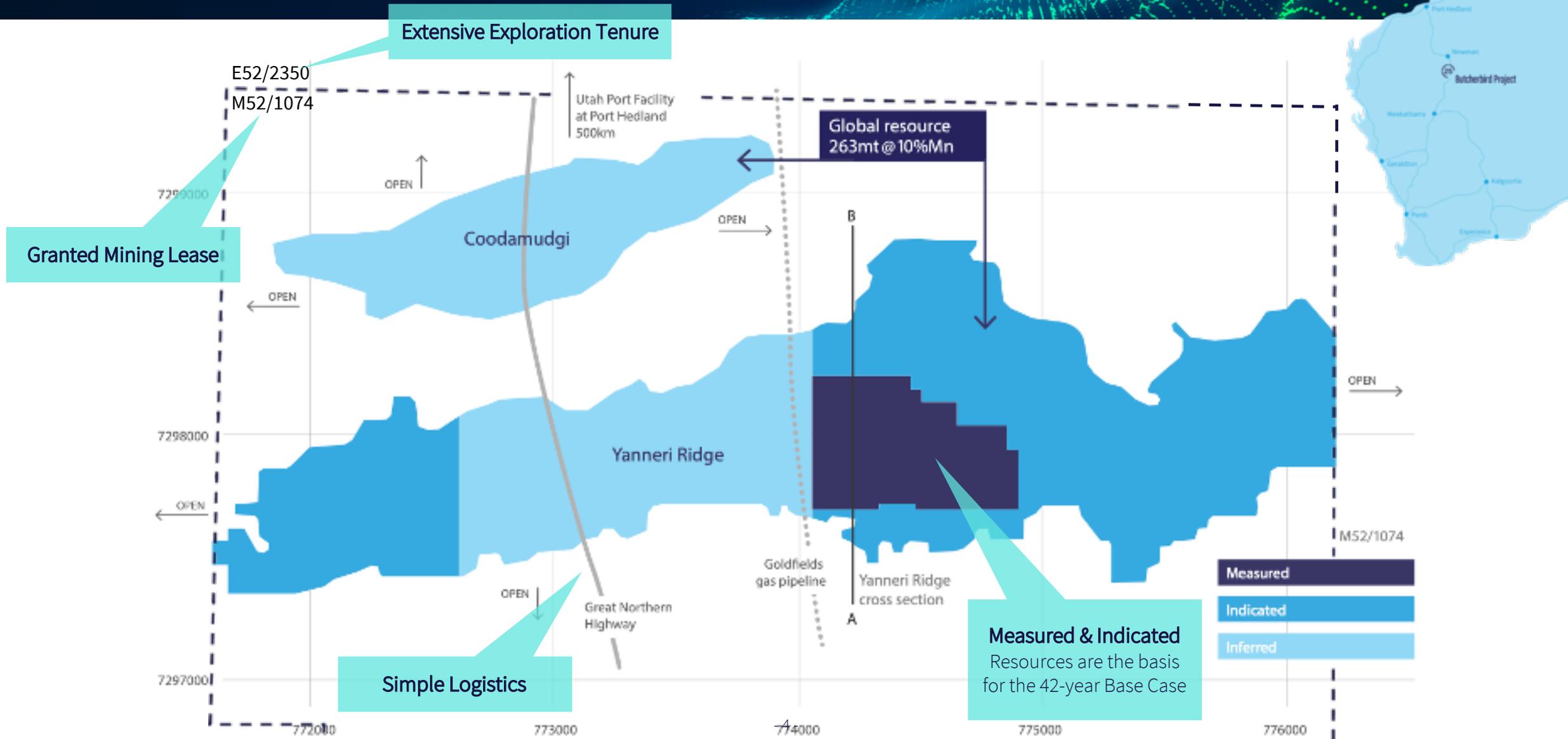
- Manganese (**Mn**) is the fourth most used metal on earth in terms of tonnage.
- Used in steel, specialty alloys and aluminium products.
- Traditionally the market has been dominated by the steel and alkaline battery industries.
- There is no substitute for manganese in steel.
- **E25 manganese concentrate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

## And the New...

- 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.**

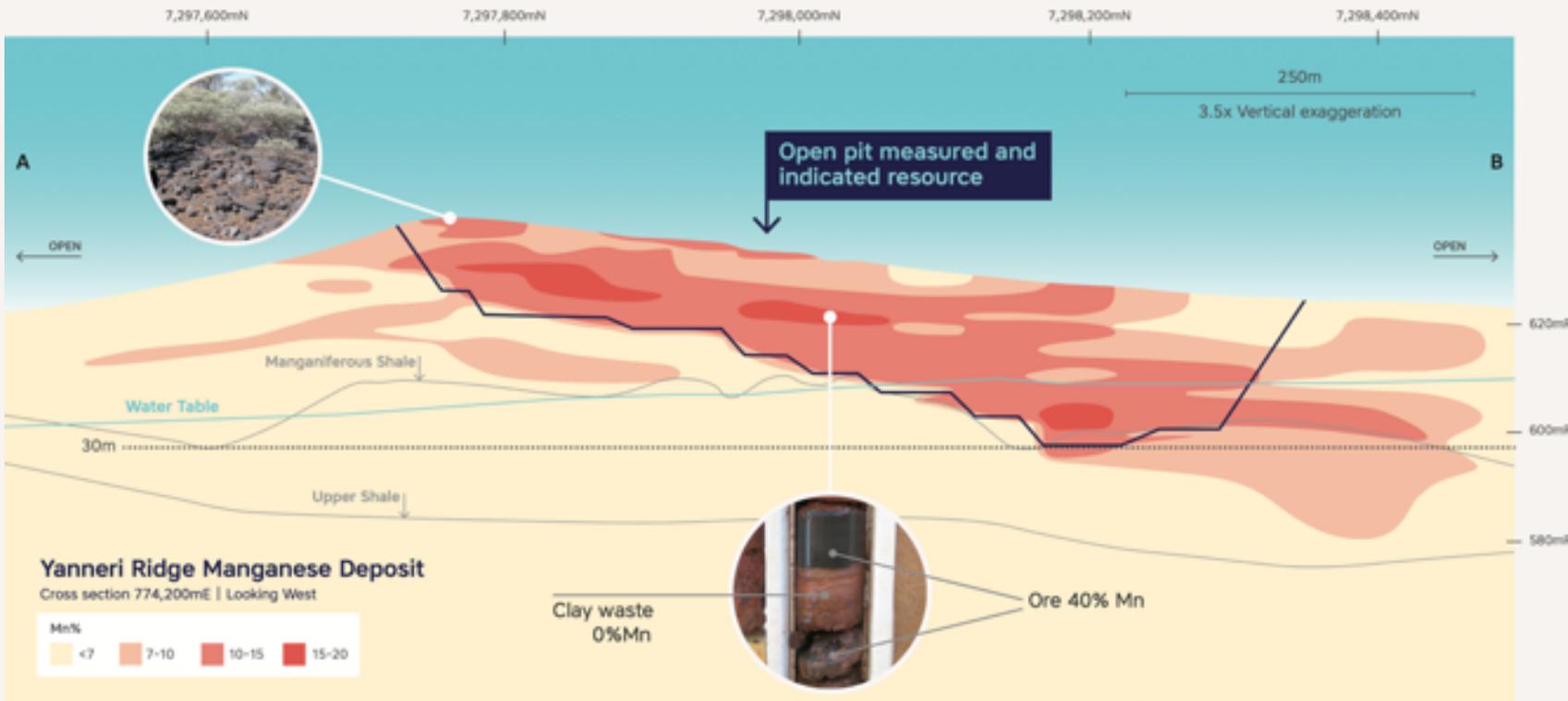


# Great infrastructure endowment, fully permitted



# 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, Ramp Up Underway

- 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 material for MnSO<sub>4</sub> conversion

Maiden  
product  
shipment  
June 2021

## Stage 1

**Low impurity Mn concentrate**

Operating and ramping up  
First shipment June 2021



## Stage 2

**Expanded Mn concentrate for MnSO<sub>4</sub>**

PFS study near complete, fully funded  
Startup 2024/25



# Stage 1: Project Delivery Complete – Ramp Up Underway



ROM Stocks

Process Water Storage

Tails Storage

Main Access Road

Ore Stockpiles

Processing Plant

# Stage 2 expansion turbocharging cashflows to fund HPM

- Incremental capital required.
- Financing discussions advanced.
- Flowsheet process proven.
- Rapid deployment.
- Fund High Purity Manganese from strengthened balance sheet.

Mn<sup>25</sup>

1,023,000 t/a

Annual Production over 40-year mine life



\$1.138 billion

NPV<sub>5</sub> pre-tax



359%

IRR pre-tax

**Establishing a globally significant, low carbon manganese business in record time, with minimal dilution**



\$20.3 million

Incremental capital cost including working capital



6 months

Payback period  
Semeru Energy U\$5M debt



February 2022

Commissioning scheduled

# Stage 1: Project Delivery - E25 Concentrate in Port Hedland



E25 Manganese Ore

# 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

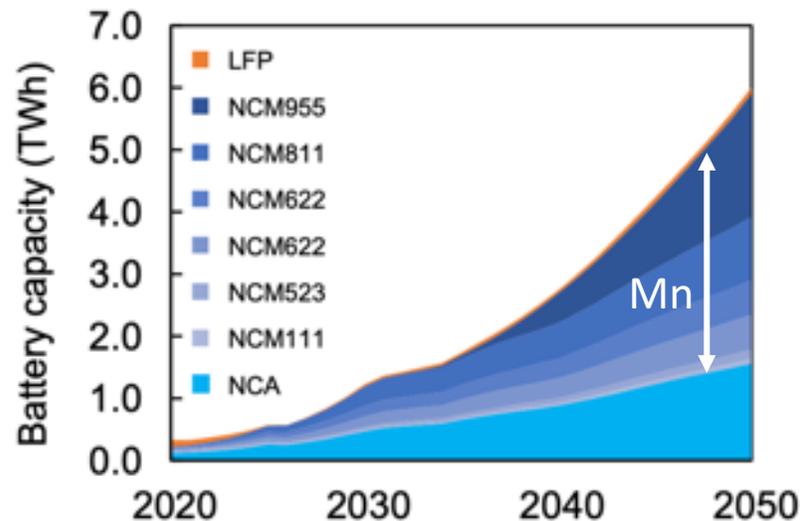
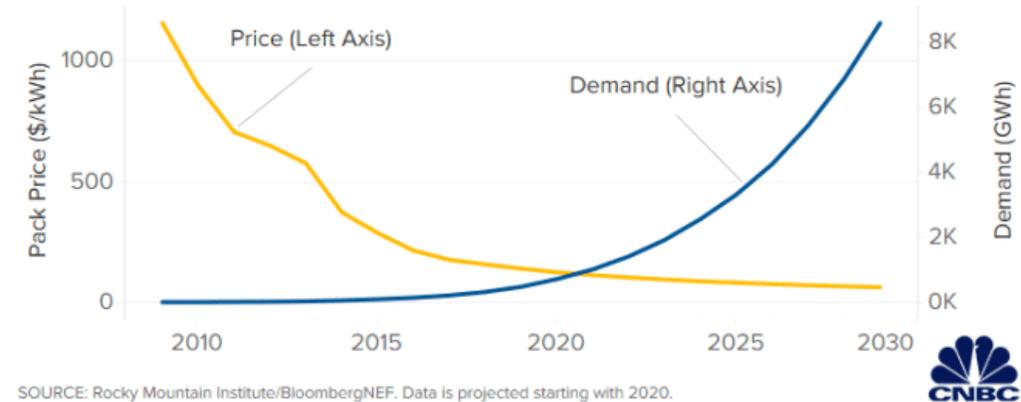
**17.6M by 2040**

barrels of oil displaced by EVs each day

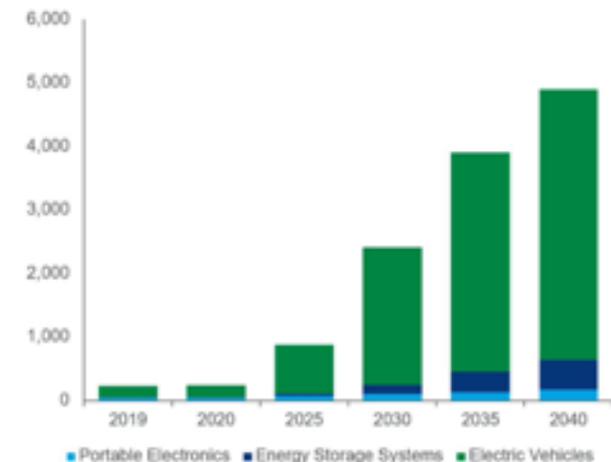
“It is reasonably straight forward to do a cathode that is two-thirds nickel and one-third manganese...”

Elon Musk, Tesla

## Li-ion battery market development for electric vehicles



## Global battery sector demand by capacity (GWh)



# If not manganese, then what?

**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**

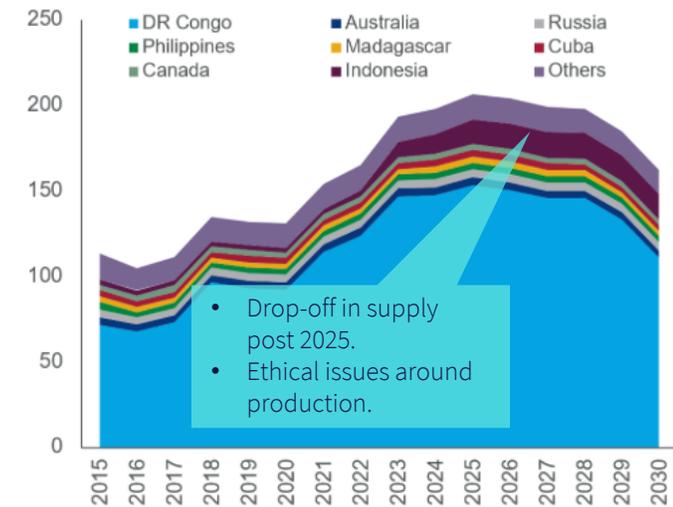
barrels of oil displaced by EVs each day

“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...”

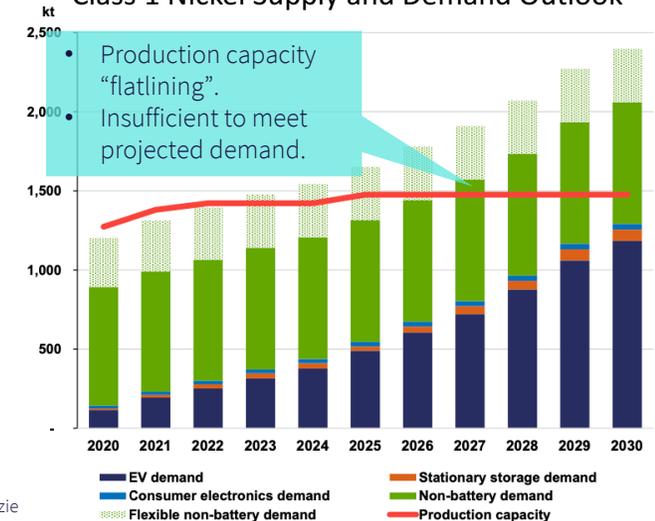
*The Driven, March 2021*

- Manganese (**Mn**) is the fourth most utilised metal globally.
- It 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)

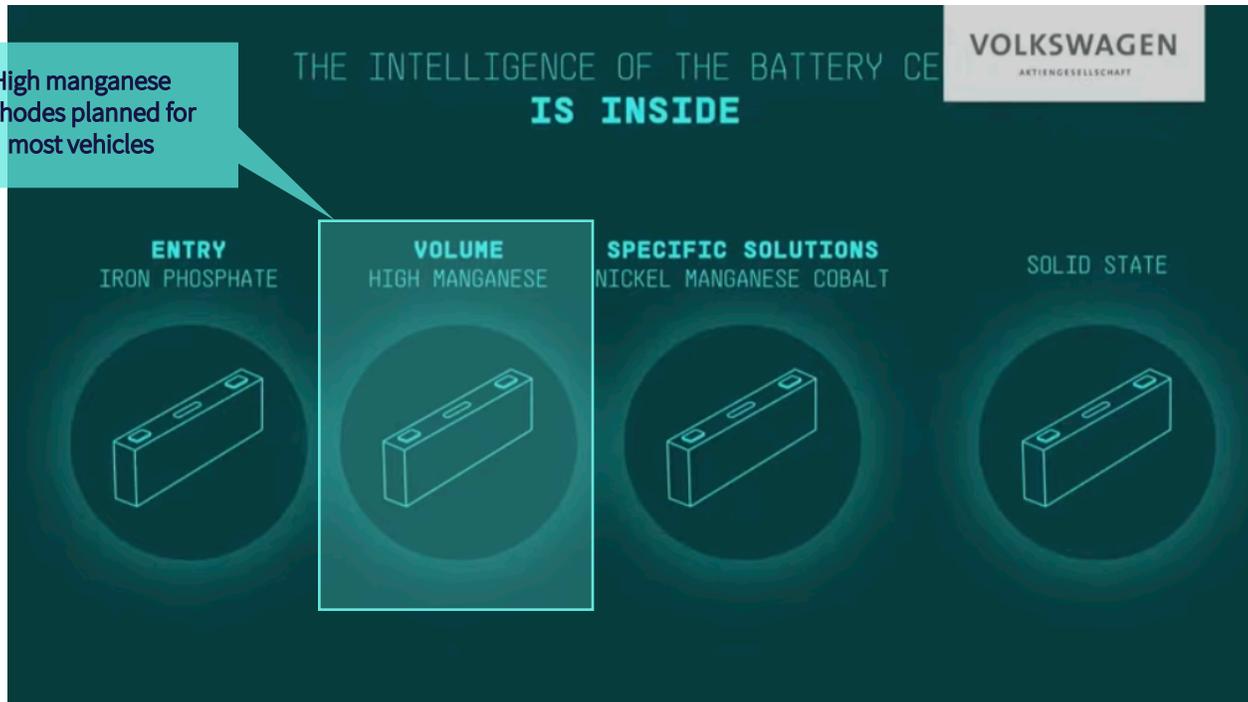


Class 1 Nickel Supply and Demand Outlook



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

# If not manganese, then what?

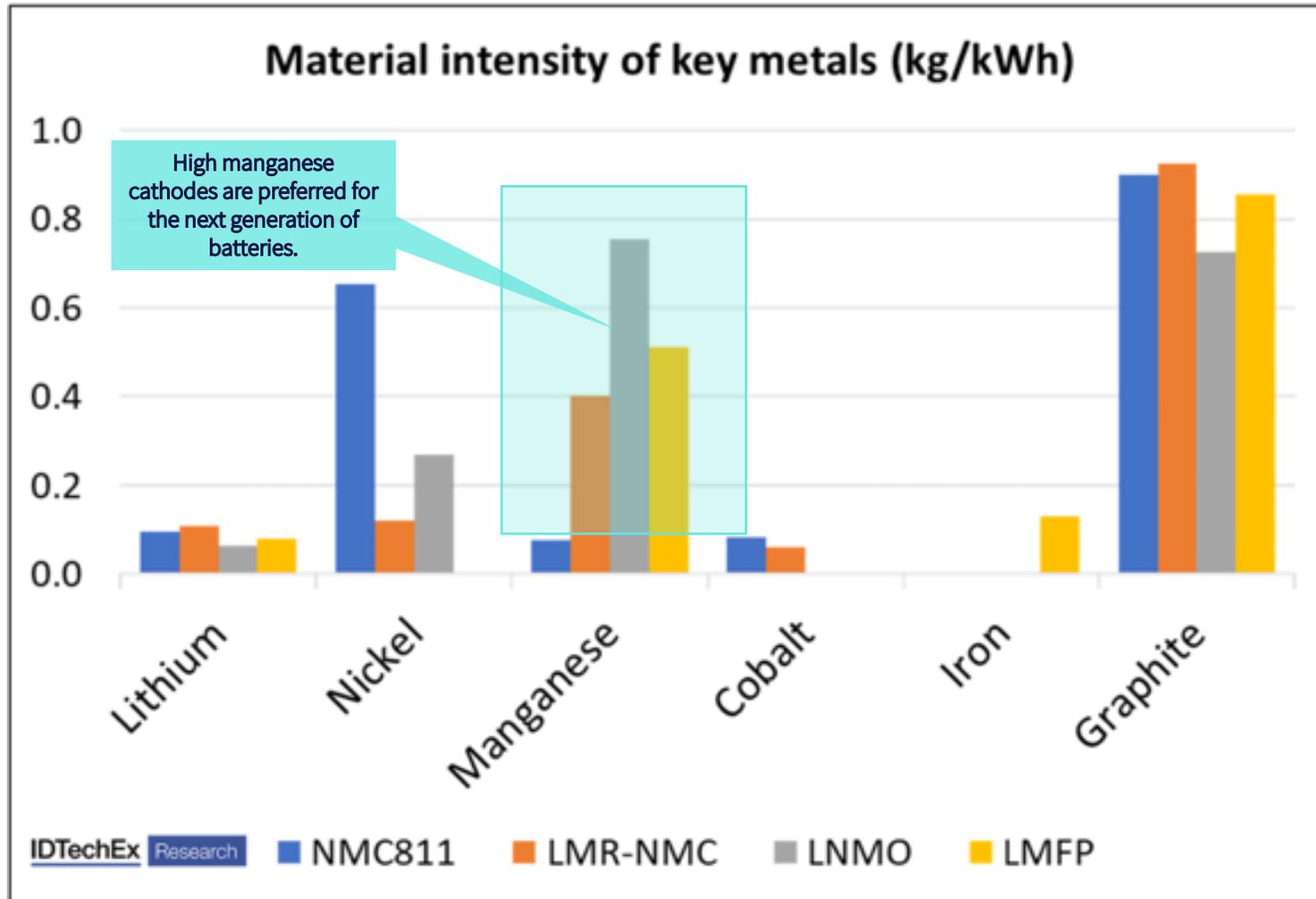


- VW moving to a high manganese cathode for most of its vehicles.
- High manganese means better energy density and lower cost.
- Requires large volumes of high purity manganese sulphate.
- Element 25 is targeting this market for its long term growth strategy.
- Discussions underway in relation to potential offtake partners in this segment.

“Our transformation will be fast, it will be unprecedented...”

VW Group CEO Herbert Diess

# If not manganese, then what?



- A number of different high manganese chemistries being commercialised.
- High manganese means better energy density and lower cost over NMC.
- Positive for HPMSM demand.
- Element 25 is targeting this market for its long term growth strategy.
- Discussions underway in relation to potential offtake partners in this segment.

# Element 25 Well Down the Path to HPMSM

Test Number	Feed Size	Duration (min)	Temp (C)	Pulp Density (%)	Reductant Stoichiometric Ratio (%)	H2SO4 Stoichiometric Ratio(%)	Feed Ore Conc (%)		Final Residue Conc (%)		Final Filtrate Conc (mg/L)		Dissolution from Solids (%)	
							Mn	Fe	Mn	Fe	Mn	Fe	Mn	Fe
HY10563	-.5 mm	60	90	20	150	200	33.7	10.5	2.8	14.3	104900	16800	97.1	52.99
HY10564	-.5 mm	60	90	20	100	200	33.7	10.5	10.7	16.2	84350	10860	86.6	34.73

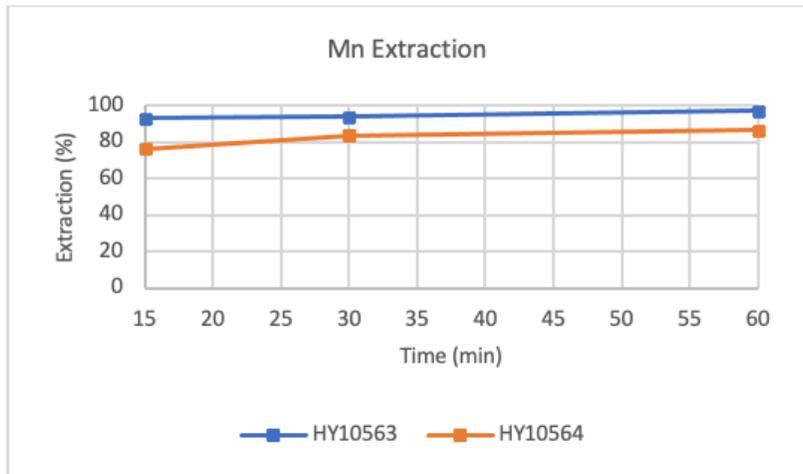


Figure 1. Manganese extraction over time

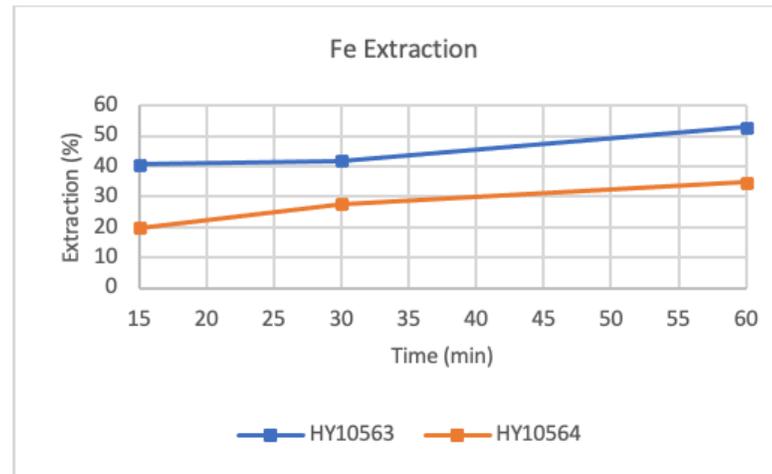


Figure 2. Iron extraction over time



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



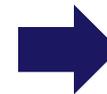
■ Historical   ■ Projected

References: ASX Company releases 6 June 2017, 12 February 2019, 16 April 2019, 15 April 2021

# Our Goal- Zero Carbon High Purity Manganese for New Energy Vehicles...



- In Production
- First Shipment June 2021



## Stage 1

First production of manganese concentrate to sell to steel alloy manufacturers

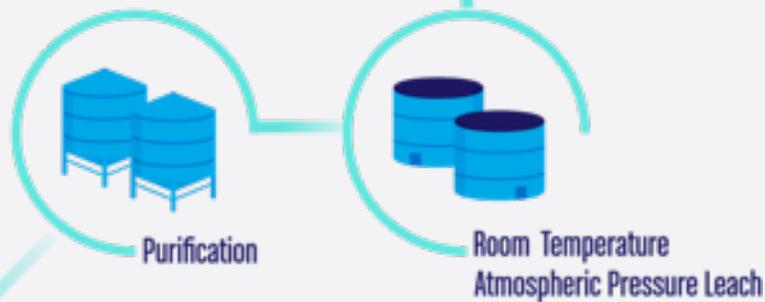
## Stage 2

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



## Stage 3

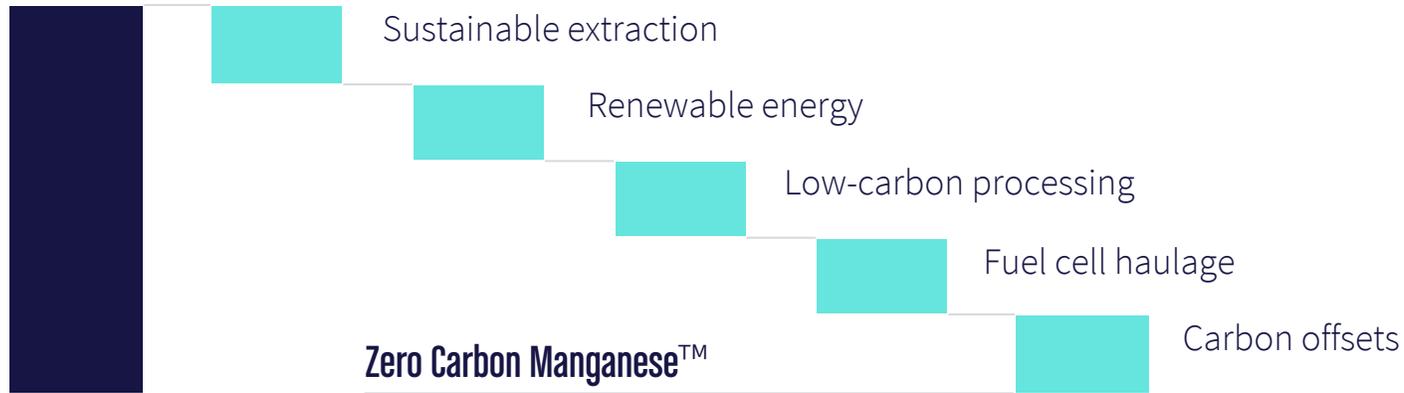
Serving the New Energy Vehicle Markets by converting the concentrate to HPMSM using renewable energy



### Proposed Timeline:

- Pre-Feasibility Study completed 2021
- Full Feasibility Study - H1 2022
- Product Qualification - H2 2022
- First Production Scheduled for 2024/2025

# 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

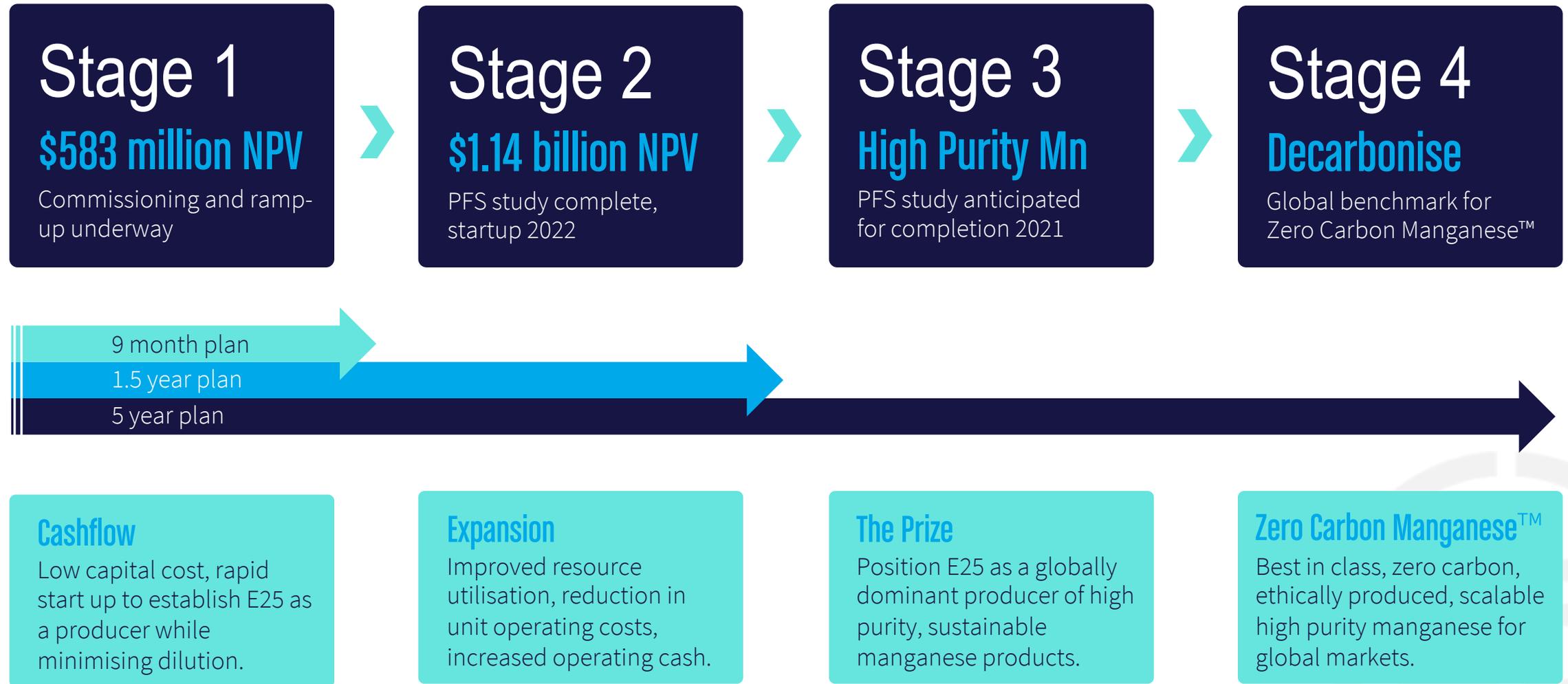


Renewable Energy  
Powered Processing



New Energy Fuel

# Our Journey...



# Thank you

For more information, please contact Element 25 Limited:

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**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

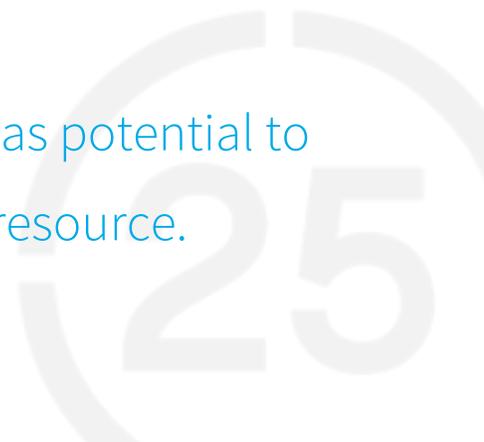
## Global Mineral Resource<sup>2</sup>

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.

## **DISCLAIMER**

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