

# Element 25 Limited Investor Update

Building a globally significant, low cost, high purity manganese project to supply high growth markets.

Investor Presentation – WA Mining Conference October 2019



# 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.

# Corporate Overview

## Financial Information

ASX Ticker	E25
Shares on Issue	92M
Share Price	\$0.20
Market Capitalisation	\$18.4M
Cash & Investments ( at 30 June 2019)	~\$8.7M
Debt	Nil
Enterprise Value	~\$9M

## Board and Management

Seamus Cornelius	Chairman
Justin Brown	Managing Director
John Ribbons	Non Executive Director
Ian Huitson	Study Manager
Sias Jordaan	Marketing Manager
Neil Graham	Development Manager

## Share Price Performance



## Major Shareholders

Top 20 Shareholders	67%
Board and Management	8.2%
JP Morgan Nominees Australia	11.4%
Duketon Mining Ltd	6.5%



# World Class Manganese Resource

Australia's largest onshore manganese resource is ripe for development to produce high purity products, NOT manganese concentrate for bulk shipping. Multiple competitive advantages mean lower costs of production.

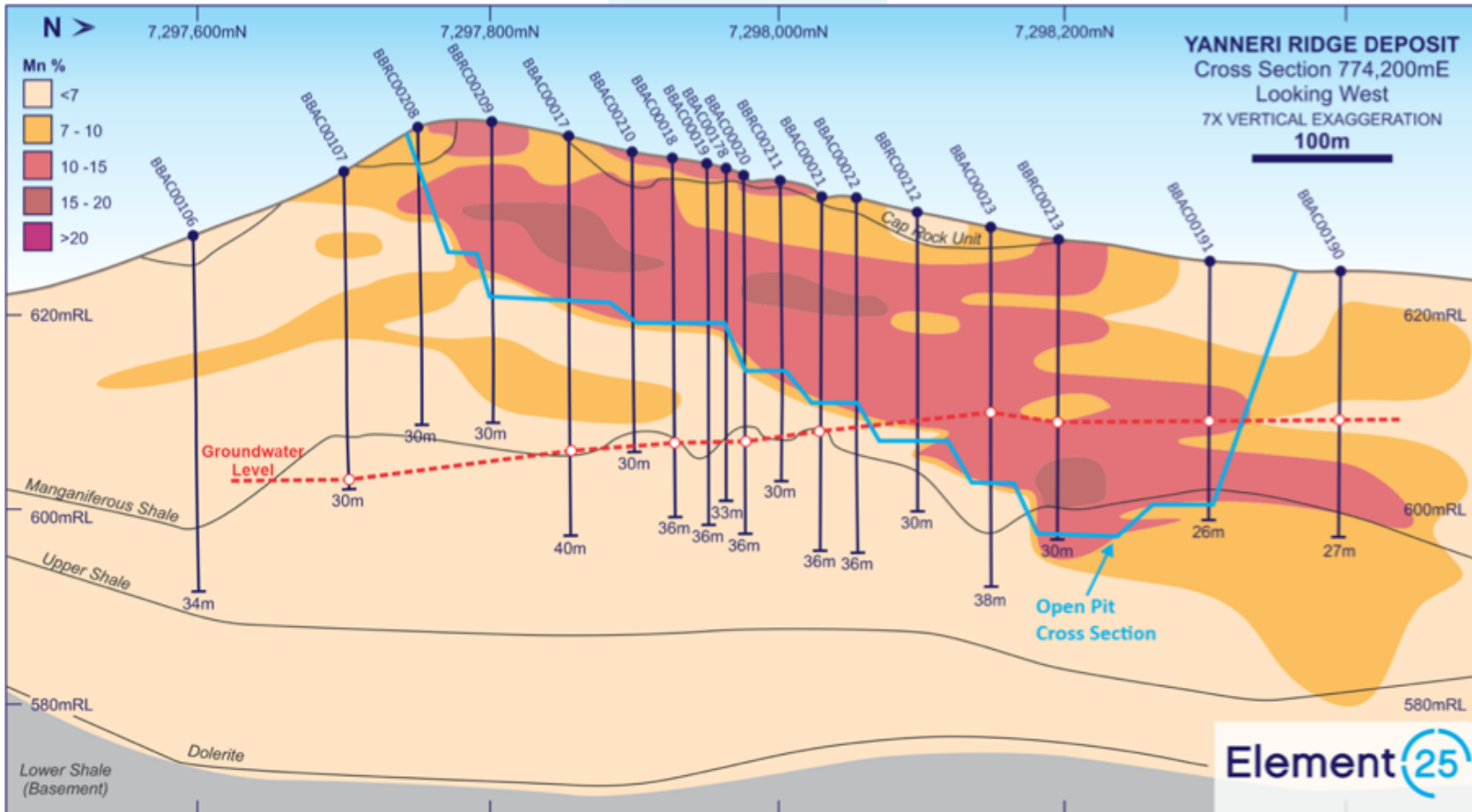
# The Butcherbird Manganese Project

- Large resource, currently **>260 Mt of manganese** ore in Measured, Indicated and Inferred JORC resources\*.
- Excellent local infrastructure (**bitumen road and gas pipeline**).
- 100% owned by Element 25 Limited.
- Located in WA, a tier 1 mining jurisdiction.
- Very simple geology, no strip and free dig.
- Measured and Indicated resources are the focus of the **25 year PFS**.
- Metallurgically process proven.
- Scoping Study completed, Pre Feasibility Study well advanced.



# Drilling Highlights the Simple Geology

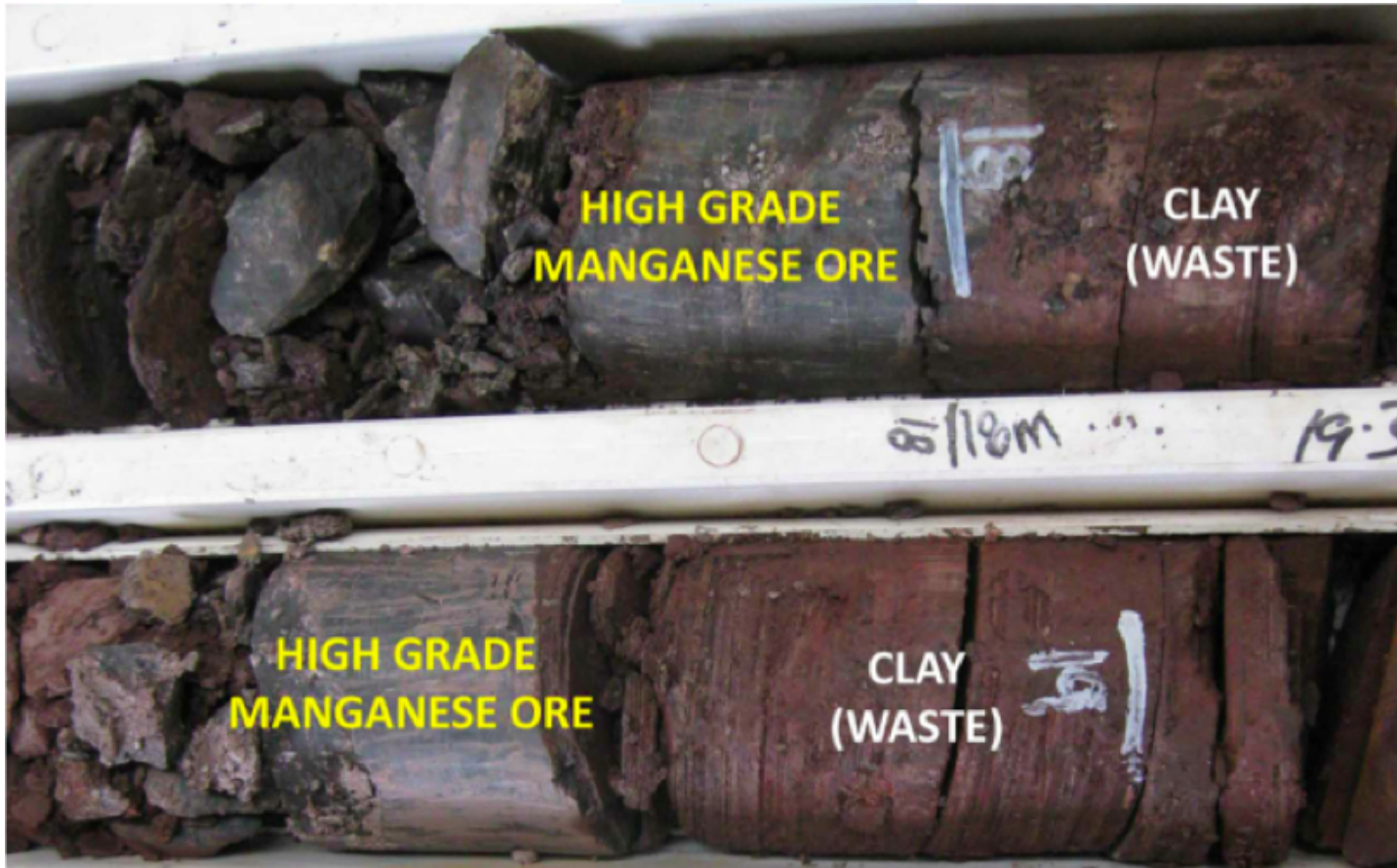
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- Flat lying stratiform ore body, very simple geology.
- Ore zone starts at surface and is laterally continuous.
- No selective mining required.
- Low strip ratio of 0.2:1 based on preliminary pit optimisations.
- Ore zone is above the water table.
- Free dig with localised ripping.

# Very Simple Beneficiation by Wet Scrubbing

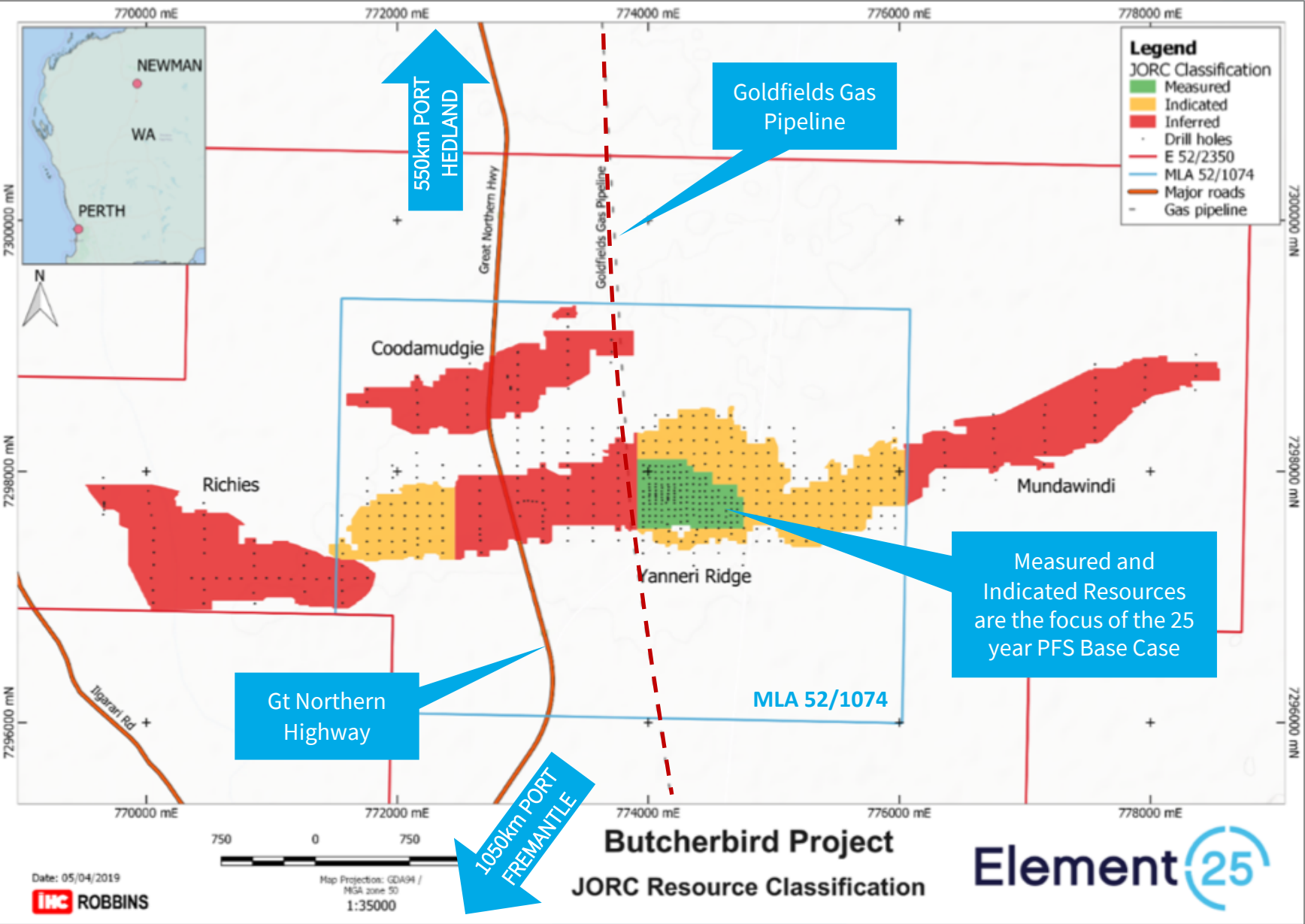
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- Interlayered higher grade manganese and barren clays.
- Supergene overprinting of a shallow marine shale sequence.
- Bulk mining of the whole orebody followed by scrubbing.
- Produces a pre-concentrate up to ~30% Mn for the leach feed.

# World Class Resource, Great Infrastructure Endowment

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# The High Purity Manganese Market

Processing ore to to high purity chemical products, NOT manganese concentrate for bulk shipping.



HPMSM



EMM

# What is High Purity (Class 1) Manganese?

## Electrolytic Manganese Metal (“EMM”)

- E25 Primary product
  - Well understood
  - Bankable

- Used in series 200 SS and specialty alloys
- Largest market, ~1.8Mt or ~US\$4B annually, steady growth
- Chinese producers: lack of domestic ore = African ore = high costs
- Easy to market, simple offtake, predictable pricing, US\$2K-\$3K/t
- Forms the E25 base case to underpin debt finance
- E25 targeting lowest quartile costs

- **ESTABLISHED DEMAND**
- **STEADY GROWTH**
- **EASY OFFTAKE**
- **MOST BANKABLE**

## Battery Grade Manganese Sulphate

- E25 Secondary product
  - New, fast growing market
  - Huge blue sky upside potential
  - Will increase exposure over time

- Used in fertilisers and new energy NMC and LNMO batteries
- Small market, ~0.1Mt or ~US\$0.2B/a, BUT (very?) fast growth
- Currently produced by dissolving EMM
- Challenging to market for now, small parcels BUT highest price, US\$3.5-4K/t
- Market growth potentially 10 fold to 2030
- E25 expects to be the lowest cost producer globally

- **NEW DEMAND**
- **HIGHEST GROWTH**
- **DIFFICULT OFFTAKE**
- **BANKABLE?**

# High Purity Manganese is a Growth Market

- Established demand for EMM from traditional steel markets.
- Expected to grow at around 4% pa.
- Strong demand from consumers outside China wanting alternative supply.

- Rapidly growing demand and price premiums for battery grade sulphate.
- Potential to accelerate demand growth as the EV thematic takes hold.
- Offers “blue sky” upside.

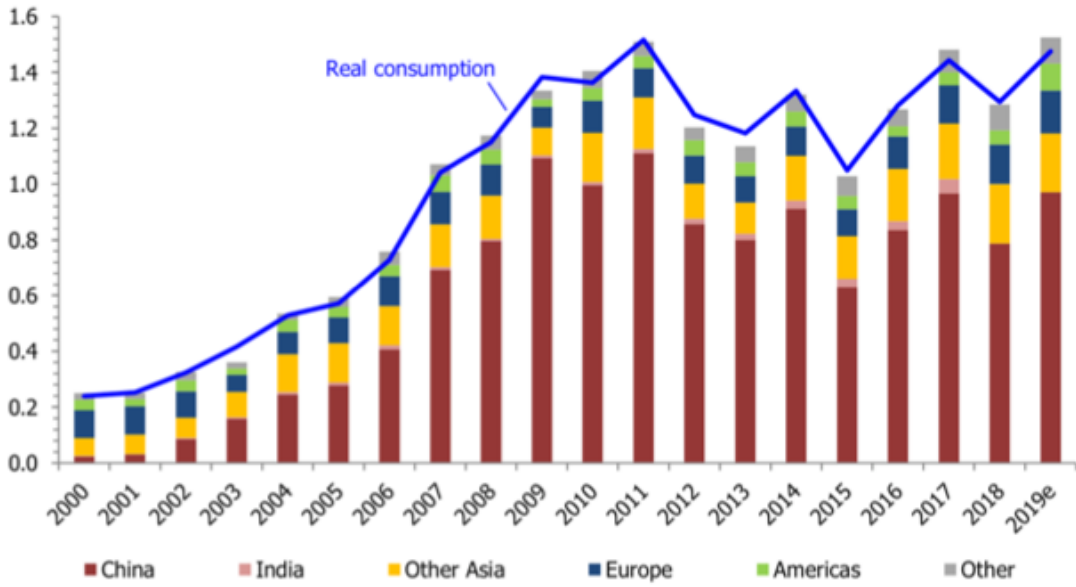
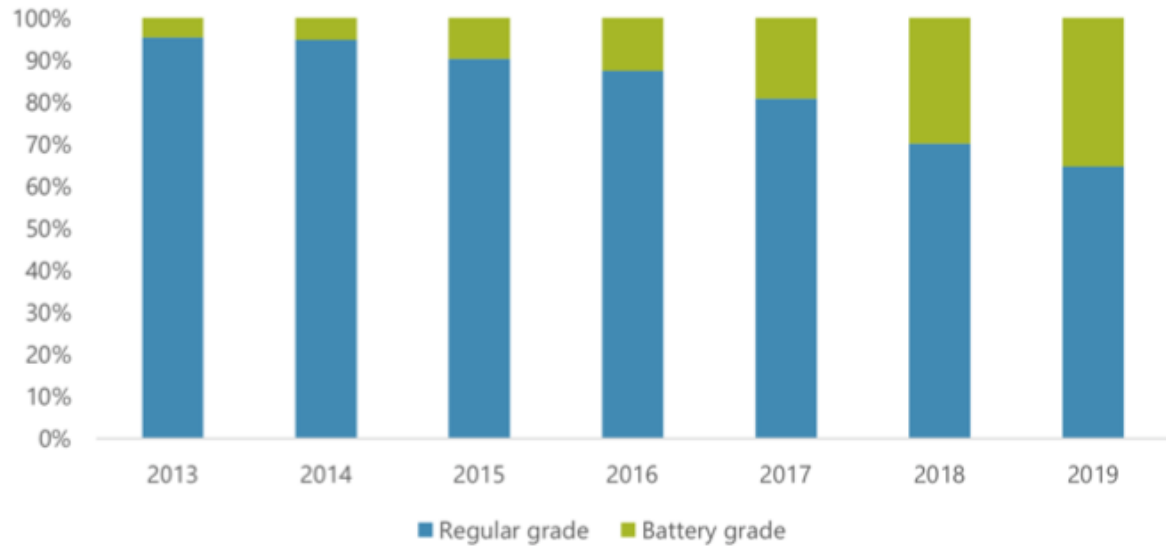


Figure 31: Manganese sulphate production, by grade, 2013 to 2019\*





# A Lower Cost, Cleaner Processing Pathway

“Every once in a while, a new technology, an old problem, and a big idea turn into an innovation.”

Dean Kamen, Inventor.

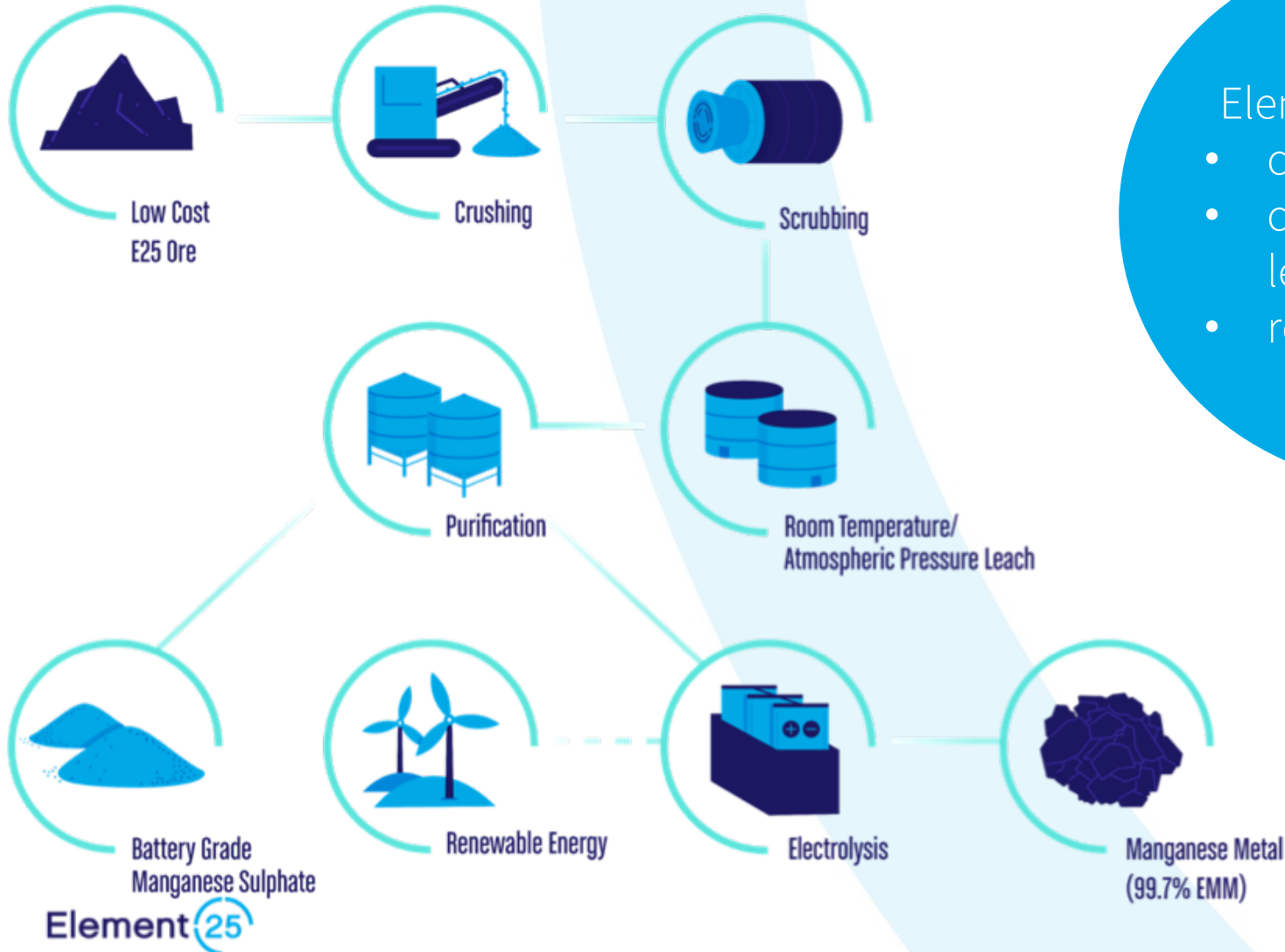
# Breakthrough Technology

- CSIRO co-developed process produces high purity manganese with less energy and lower emissions.
- Products include high purity manganese sulphate (“HPSM”) for NMC Li-Ion battery cathodes and Electrolytic Manganese Metal (“EMM”) for specialty steels.
- These are high value products. Electrolytic Manganese Metal (EMM) >USD\$2,000/t<sup>1</sup>.



<sup>1</sup><https://www.metalbulletin.com/My-price-book.html?price=34473>

# Element 25 Uses a Simpler, Lower Cost, Cleaner Process



Element 25 Process:

- cheaper local ore
- cleaner, cheaper leach process
- renewable energy

simpler,  
lower cost,  
cleaner,  
greener



# Energy Solution: Gas, Wind or Solar

“Research from Morgan Stanley estimates that renewables will be the cheapest source of power in the world in less than three years.”

Business Insider Australia, 8 July 2017.

# Electrowinning Metals is Energy Intensive

- Making metal through electrolysis involves passing a current between a cathode and anode through a pregnant liquor.
- Under the right conditions, metal is plated on the cathode.
- Making manganese metal (EMM) takes approximately 6MWh/t of metal produced.
- Electricity to power the cell house is the largest single cost in making EMM at Butcherbird.
- A cost effective power solution is critical.

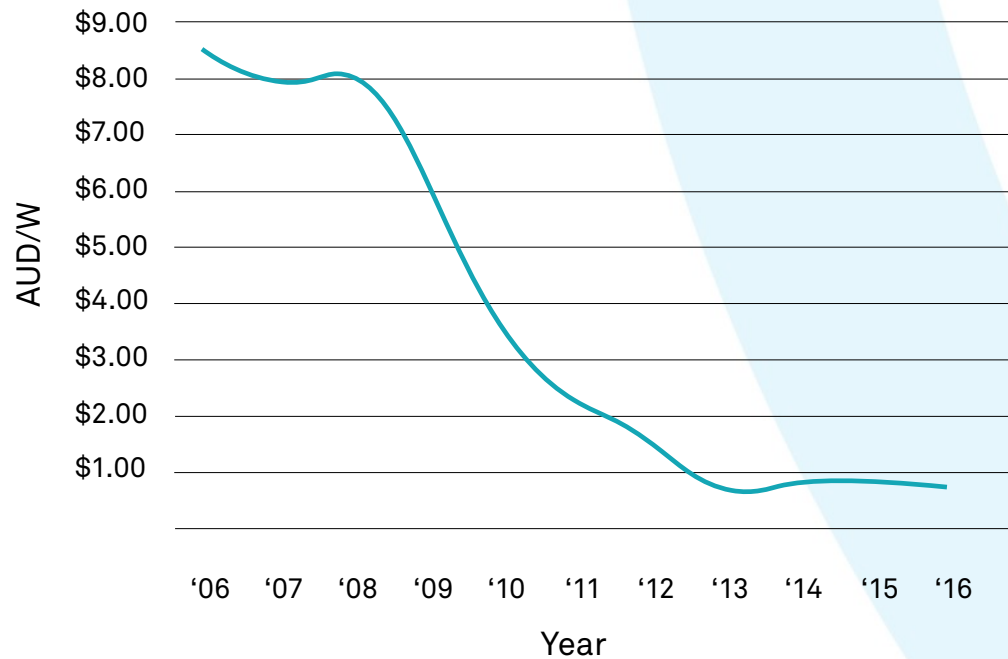




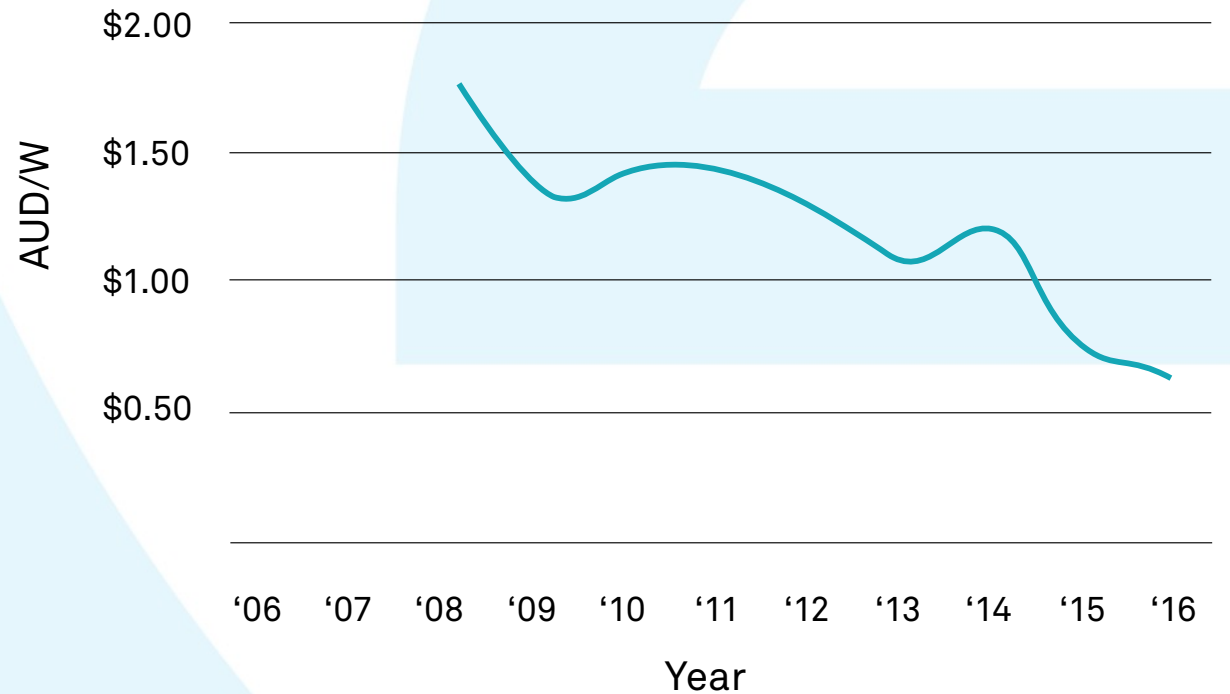
# Renewable Energy - Lower Emissions and Getting Cheaper

- With a long term PPA, renewables are now significantly cheaper than gas generation.

Solar PV modules cost trend<sup>19</sup>

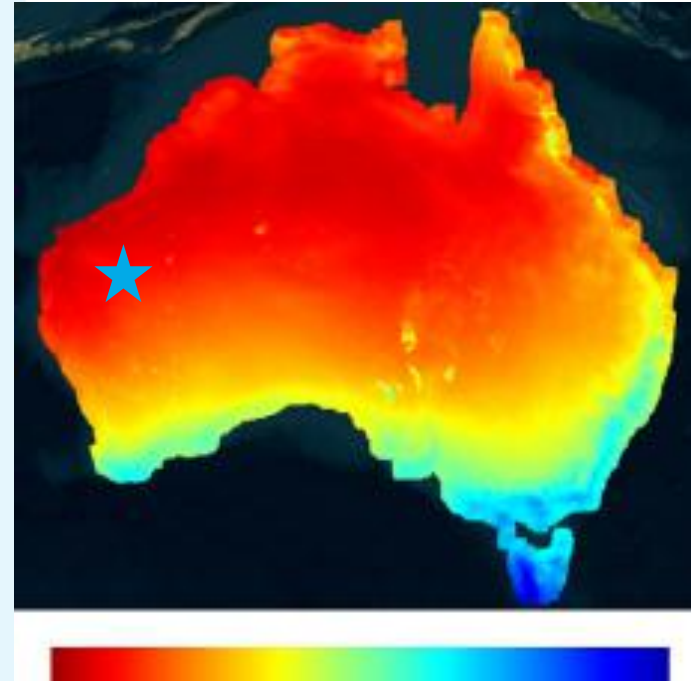


Wind turbines cost trend<sup>21</sup>



# Wind/Solar Resource

- Much of Australia has good wind and solar resources.
- The southern Pilbara has good solar and wind.
- An ideal region for hybrid generation.



23.5 20.4 17.2 14.1 11.0

Australian average daily global horizontal irradiation (GHI) (MJ/m<sup>2</sup>)<sup>6</sup>

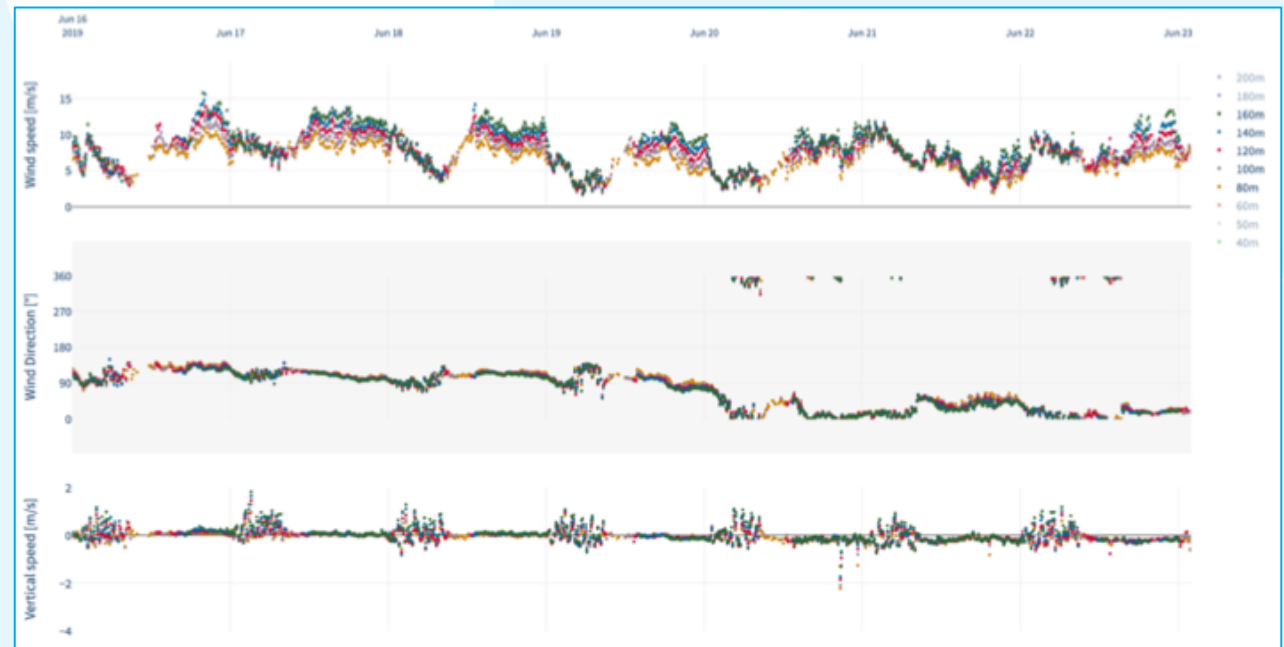


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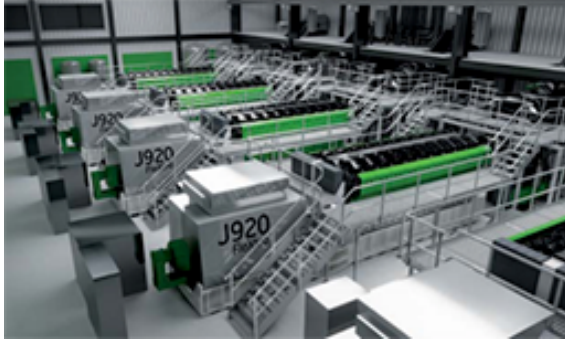
Australian average 150 m wind speed (m/s)<sup>7</sup>

# Wind/Solar Resource Mapping

- Real-time wind and solar data being collected at site via Triton SODAR.
- Ten minute sampling interval.
- Multiple sampling heights from 40-200m.
- Data collection to be ongoing through PFS and DFS.



# Energy Optionality Allows for Optimal Energy Mix



## Gas generation:

- Reciprocating gas engines/turbines
- Cost effective base case power solution
- 100% gas power assumed in the Scoping Study

## Wind turbines:

- Competitive Levelised Cost Of Energy (“LCOE”)
- Long mine life supports favourable PPA terms
- Protection from gas price changes

## Solar photovoltaics:

- Competitive LCOE
- Offsets lower daytime wind speeds
- Assists in smoothing the renewable power supply

EMM EW  
consumes  
~6.5 MWh/t of  
electricity

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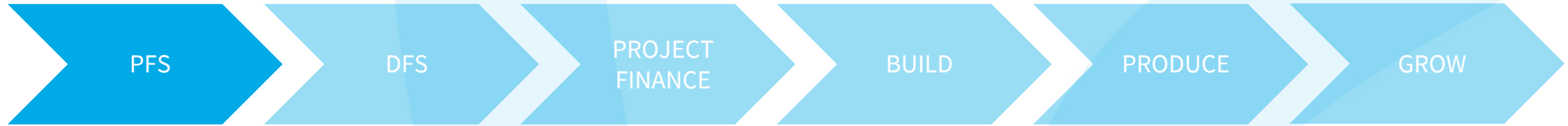
Expected  
energy mix is  
50% wind and solar  
plus 50% gas, halving  
emissions and  
reducing cost over  
gas only\*

An aerial photograph of an industrial site, possibly a refinery or chemical plant, with various structures and piping. The image is overlaid with a dark blue gradient. A large, bright blue rectangular area is positioned on the left side, containing the main title text in white. Below the title, there is a smaller, semi-transparent blue area containing two lines of white text.

# Next Steps for Element 25?

Scoping Study complete and positive.  
What is the pathway to development..?

# Our Journey...



- Flowsheet Development - COMPLETE
- Resource Infill & Upgrade - COMPLETE
- Environmental Surveys - COMPLETE
- Native Title Agreements - COMPLETE
- Power Solution - COMPLETE
- Metallurgical Scale Up - ADVANCED
- Marketing & Offtake - COMMENCED
- Permitting & Approvals - COMMENCED



PFS Delivery  
Estimated Q4  
2019

# Marketing and Project Finance

- Discussions underway with numerous potential offtake partners in Japan, Korea, USA and EU.
- Demand outside China is robust with a preference for non Chinese supply.
- Looking to negotiate bankable offtake agreements to underpin project financing.
- Project financing will explore traditional debt/equity as well as novel solutions;
  - Offtake pre-pay/royalty streaming.
  - Recently approved to enter the due diligence phase with the Northern Australia Infrastructure Facility (NAIF).
  - Export Credit Agency debt financing.
  - Project level equity investment.
  - Burnvoir Corporate Finance engaged to provide Project Financing support services.

# A Strong Team...

- An experienced owner's team for core disciplines.
- Experienced industry partners for specialist skill sets.
- All bases covered.
- Owner's team will grow as the project progresses.





# Our Journey...

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## Our Goal...

- Produce the cleanest, greenest manganese products globally.
- Become a globally significant high purity manganese producer.
- Achieve best in class quality and cost profile.
- Operate ethically and sustainably in a Tier 1 jurisdiction.
- Generate strong sustainable investor returns over the long term.



# Thank you.

For more information, please contact Element 25 Limited:

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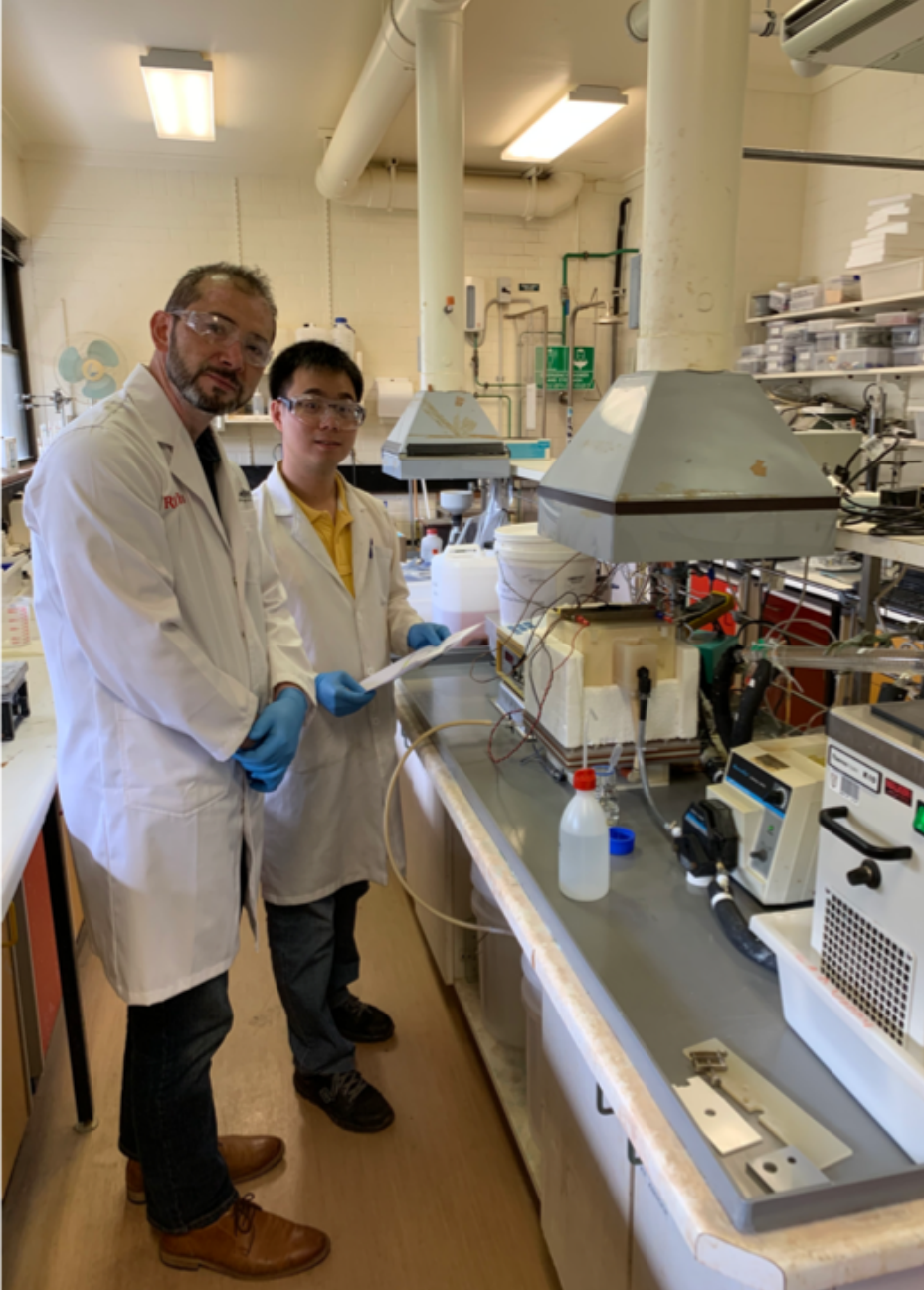
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Element 25







# Appendices



# World Class Manganese Resource



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

- Significant potential remains to increase the resource with further drilling.
- Scale of development not resource constrained.

Resource is not closed off and can be extended.

Reference: Element 25 Limited ASX release dated 17 April 2019.

# Competent Person's Statement

The information in this presentation that relates to Exploration Results, Exploration Targets and Mineral Resources 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.

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.

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.

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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