# Element 25 Limited Investor Update

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

Renewables and Resources March 2020



#### **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.



## **Corporate Overview**



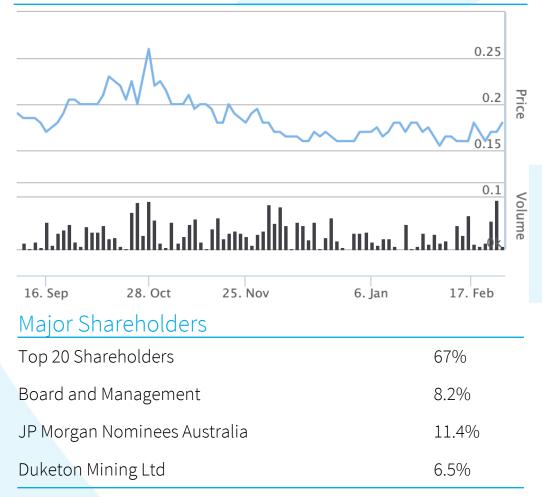
#### Financial Information

ASX Ticker	E25
Shares on Issue	92M
Share Price	\$0.16
Market Capitalisation	\$14.7M
Cash & Investments (at 31 December 20	19) ~\$8.2M
Debt	Nil
Enterprise Value	<\$10M

#### 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







Australia's largest onshore manganese resource is ripe for development to produce high purity manganese products. Multiple competitive advantages mean lower costs of production.

### The Butcherbird Manganese Project

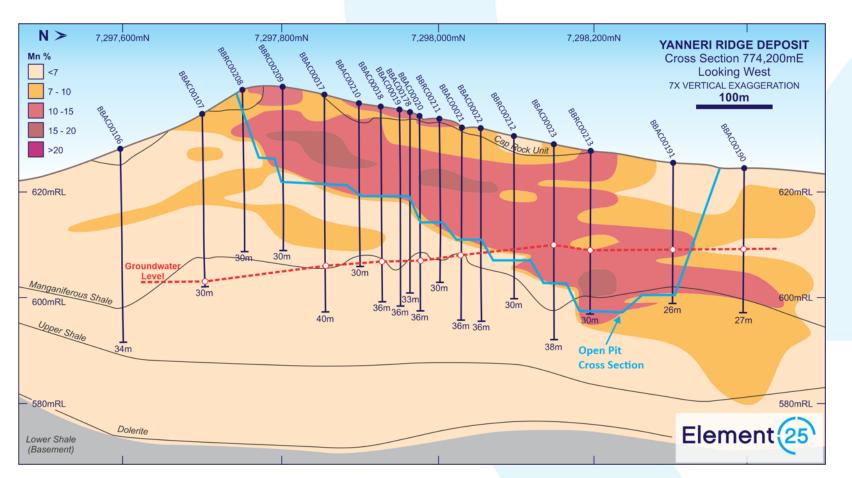
- Large resource, currently >260 Mt of manganese ore in Measured,
   Indicated and Inferred JORC resources\*.
- Excellent local infrastructure (bitumen road and gas pipeline).
- 100% owned by Element 25 Limited.
- Located in WA, a tier 1 mining jurisdiction.
- Very simple geology, no strip and free dig.
- Measured and Indicated resources are the focus of the **50 year PFS**.
- Metallurgically process proven.
- Pre-Feasibility Study nearing completion.





## **Drilling Highlights the Simple Geology**





- 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.

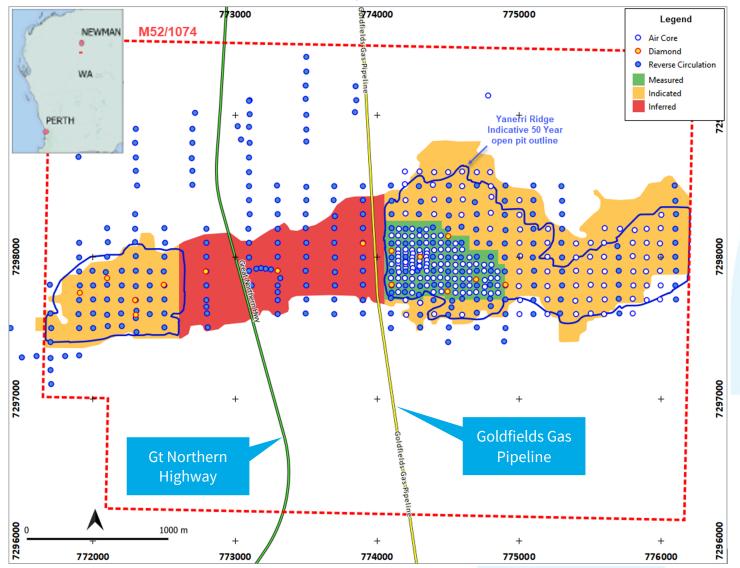








## World Class Resource, Great Infrastructure Endowment





- Energy opportunity: GGP gas pipeline traverses the Project.
- Logistics opportunity: Great
   Northern Highway traverses the
   Project.
- Port solutions: North to Port
   Hedland or south to Fremantle.
- Measured and Indicated Resources as basis for 50 year PFS.





### **Breakthrough Technology**

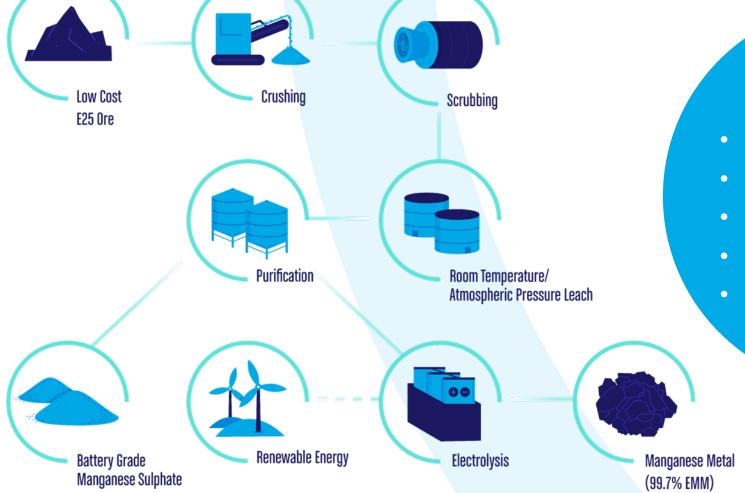


- The E25 process produces high purity manganese with less energy and lower emissions.
- Products include high purity manganese sulphate monohydrate ("HPMSM") for NMC Li-Ion battery cathodes and Electrolytic Manganese Metal ("EMM") for specialty steels.
- Pursuing a high value high margin business model potentially with a low-cost bulk export start-up.



## Element 25 Uses a Simple, Low Cost, Clean Process





#### Element 25 Process:

- cheap local ore
- clean, efficient leach
- renewable energy
- cleaner, lower cost
- More sustainable



"Renewables and mines may be unlikely bedfellows, but the pairing is booming as mining companies look to reduce energy costs and emissions at remote sites.."

ARENA 2019.

## **Electrowinning Metals is Energy Intensive**

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- 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 Wind turbines cost trend \$2.00 \$9.00 \$8.00 \$7.00 AUD/W \$1.50 \$6.00 AUD/W \$5.00 \$1.00 \$3.00 \$0.50 \$2.00 \$1.00 Year Year



## Wind/Solar Resource Mapping

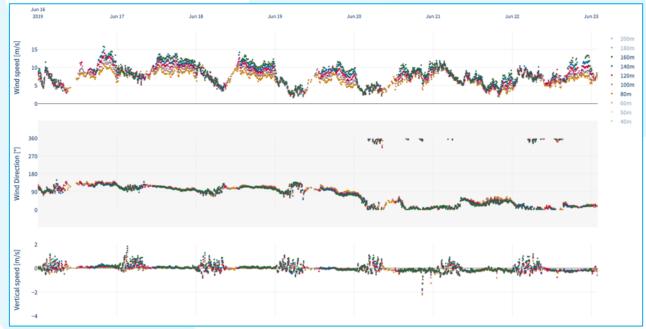
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- Real-time wind and solar data being collected at site via Triton SODAR.
- Ten minute sampling interval.
- Multiple sampling heights from 40-200m.
- Data collection to be ongoing through PFS and DFS.





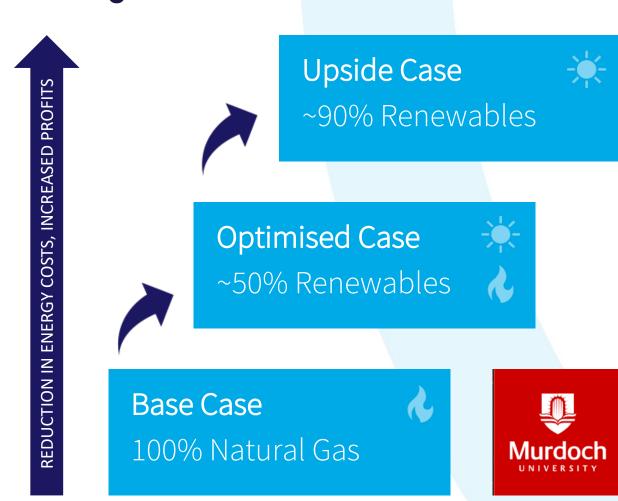






#### **Making Metals with Renewables - IDE**





#### Maximising Renewable Penetration:

- Optimising electrowinning process to utilise dynamic energy supply.
- Finding the limits on key variables such as voltage, current density, solution chemistry.
- Designing management systems to use dynamic energy while maintaining quality.
- Co-funded to \$490K by the Australian Renewable Energy Agency ("ARENA").



## **Energy Optionality Allows for Optimal Energy Mix**







Element (25)
\*Subject to final PFS modelling



- 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 MWh/t o electricity



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

### **Exporting Renewable Energy as Metals?**

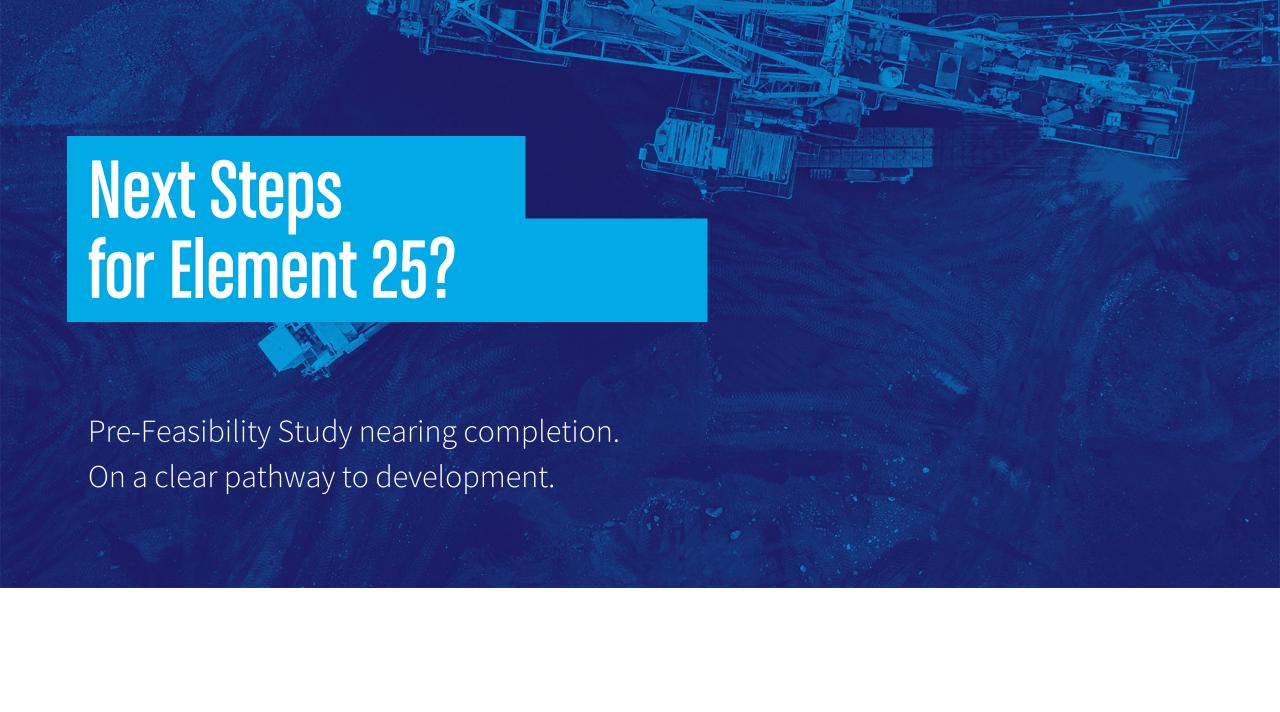
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- Renewable energy powered electrowinning of metals embeds the renewable energy into the product for export.
- Technology potentially applies to a range of commodities including manganese, copper, lead, zinc, nickel etc.
- Positions Australia to become a leader in renewable energy exports.
- A viable alternative/adjunct to hydrogen exports?





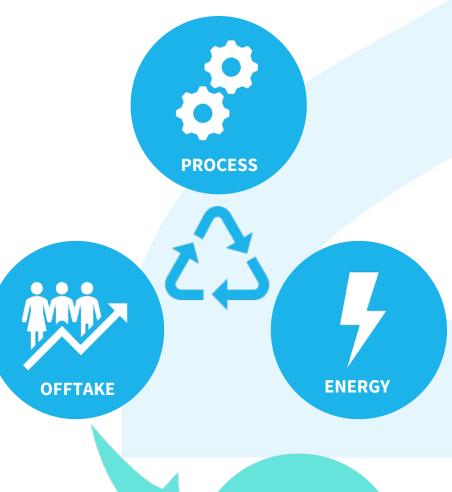




## Key Project Challenges Well Understood

- Appetite for non-Chinese supply in Korea, Japan,
   USA and EU is strong (site visits in November 2019).
- Energy cost structure clear and clearly competitive.
- Metallurgy de-risked next phase is pilot testing.
- Project financing will explore multiple options;
  - Traditional debt/equity.
  - Offtake pre-pay/royalty streaming.
  - NAIF funding support (DD phase commenced)\*.
  - Export Credit Agency debt financing.
  - Project level equity investment.







#### Ingredients for Success...













- Tier 1 jurisdiction
- Permitting risks low
- Established infrastructure
- History of mining
- Proven location

- Simple geology
- Low cost mining
- Massive resource
- Native Title resolved
- Low cost manganese units for processing

- Efficient processing
- Fast leach kinetics
- High recoveries
- Low costs
- Scalable
- More efficient

- Chinese costs rising
- Decline in ore supply
- Demand growth from batteries
- Support from offtakers

- Huge resource
- Production growth unconstrained
- Modular plant design
- Can match demand



## Thank you.

For more information, please contact Element 25 Limited:

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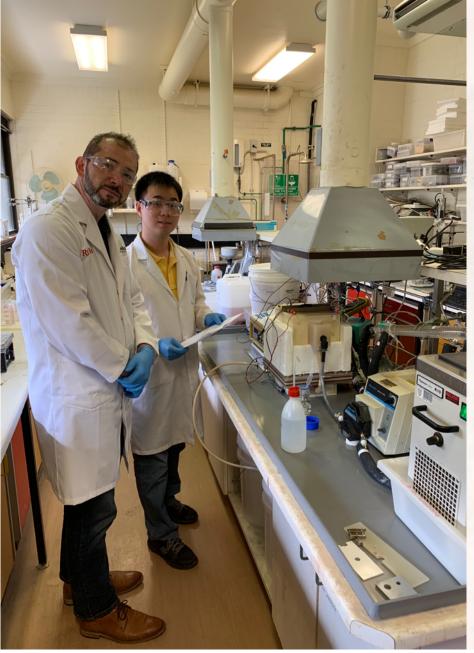
www.element25.com.au





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 which contains copies of all continuous disclosure documents to ASX, Competent Persons' Statements and Corporate Governance Statement and Policies.

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