

## Butcherbird Manganese Project - Operational & Shipping Update

- The MV Aquamarine SW left Port Hedland on 24 May 2022 with 35,002 tonnes of a special high silica manganese concentrate blend on board.
- FOB sale price for this cargo was higher than for any of the previous shipments because of buoyant manganese ore markets.
- A further shipment of approximately 35 to 40kt of normal contract material is expected to be despatched prior to the end of June 2022.
- Provisional payments received for the current shipment with final payments for both shipments expected before 30 June 2022
- Equipment to reconfigure primary comminution circuit to aid plant de-bottlenecking has been mobilised.
- Preventative maintenance optimisation plan implemented to improve plant uptime and operational efficiencies.



Element 25 Limited (E25 or Company) (ASX:E25) is pleased to advise that a shipment comprising 35,002 tonnes of Butcherbird manganese concentrate departed Port Hedland aboard the MV Aquamarine SW on 24 May 2022.

The contract price received was higher than for previous shipments due to the buoyant prevailing manganese markets, which helped to offset the higher than forecast diesel and shipping costs which remain above long-term trends due to ongoing geopolitical and COVID related issues around the world.

Manganese ore markets have remained strong through Q2 2022 with 44% index material remaining well above US\$7 / dmtu CIF Tianjin<sup>1</sup>.

Feedback on the handling properties of E25 concentrate ore remains positive from logistics providers to consumers. The marketing team will continue to look for opportunities to place additional conventional and non-conventional material into the current market whilst strong markets conditions prevail.

<sup>1</sup> Reference: Fast Markets benchmark pricing.

### COMPANY SNAPSHOT

#### Market Summary

ASX code: E25  
 Shares on issue: 153M  
 Share price: \$0.64

#### Board of Directors:

Seamus Cornelius Chairman  
 Justin Brown MD  
 John Ribbons NED

Element 25 Limited is developing the world class Butcherbird Manganese Project in Western Australia to produce high quality manganese concentrate and high purity manganese products for traditional and new energy markets.

## Process Plant Optimisation

As reported in the March 2022 quarterly report, the Company has been undertaking rectification works around the primary comminution circuit to alleviate throughput bottlenecks caused by material handling challenges due to high clay content feed.

The first stage of this work has culminated in the mobilisation to site of a scalping screen and radial stacker conveyors to allow clay rich ore feed to be better managed through the front end of the plant and eliminate one of the biggest challenges in achieving nameplate throughput volumes.



Scalping screen and radial stackers mobilising to Butcherbird.

The units are scheduled to arrive on site on 27 May 2022 and will be installed and commissioned immediately. This is the first of a series of steps identified in the recent review which are expected to lead to improved throughput volumes and maximise production from the installed plant and equipment.

## Stage 2 Expansion Update

The strategy around the development of the Butcherbird Project has consistently included an expansion of current production to take advantage of the large resource, which currently has a mine-life of 42 years whilst utilising only 20% of the identified resources<sup>2</sup>.

As part of the optimisation studies being undertaken on the plant, the Company has been conducting engineering design work on the expansion, focussing initially on the primary (dry) comminution stage(s) and the final beneficiation step which currently utilises optical ore sorters. As part of the review process, dense media separation (DMS) is being assessed as an alternative to ore sorters to provide more consistent results in terms of both manganese recovery and grade. The results of this work will provide guidance on engineering design decisions for Stage 2 expansion works.

<sup>2</sup> Reference: Company ASX release dated 19 May 2020

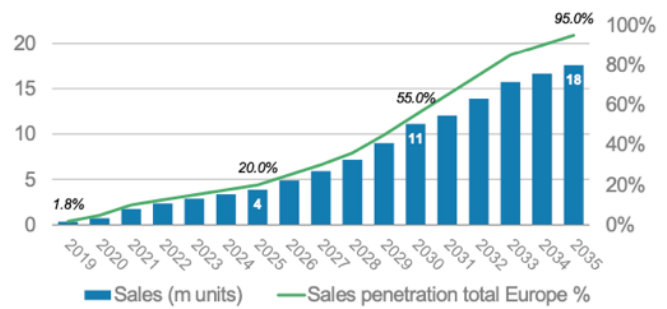
## Project team focus

E25's Operations team continues to focus on delivering sustained nameplate production. The Business Development team is focussing on E25's multi-stage development strategy, including a Stage 2 expansion of the concentrate business in parallel with the Stage 3 development of a conversion facility to convert the concentrate material into HPMSM for electric vehicle EV batteries to power the global transition away from fossil fuel powered mobility.

**Manganese is emerging as an increasingly important ingredient** for EV batteries, with potential supply constraints for nickel and cobalt forcing battery manufacturers to look to high manganese cathodes to produce the vast amount of cathode material required by the EV industry in coming years<sup>3</sup>.

The Project is ideally placed to feed this potential demand, with **advanced flowsheet development** work undertaken in 2019 and 2020 confirming a simple leach process for E25 ores which, when combined with offsets, will target the world's first **Zero Carbon Manganese** for EV cathode manufacture<sup>4</sup>.

The Company released a Scoping Study (**Study**) in January 2022<sup>5</sup> to update the market prior to the release of the Feasibility Study (**FS**) which is currently being completed.



Source: ACEA, Morgan Stanley Research estimates

## Battery EV Penetration Rate Forecast to Increase

As battery electric vehicle (BEV) makers seek to increase the uptake of electric vehicles, one commercial driver is cost reduction. VW's Power Day suggested a 50% cost reduction for batteries with cell design (-15%), production process (-10%), **cathode/anode materials (-20%)** and battery systems (-5%) driving the change. Global BEV penetration is expected to rise to 15.2% by 2025 and 39.5% in 2030 – led by Europe and China, according to Morgan Stanley's latest report<sup>6</sup>. The main driver in the cathode materials is a shift to a high manganese cathode material for the volume production, which is expected to underpin strong demand growth for battery-grade manganese sulphate. Current estimates put demand by 2030 at 13 times current supply and a deficit of 1.3Mt even factoring in planned supply increases<sup>7</sup>.

Table 1. Europe BEV sales volumes (m) and penetration (%)

<sup>3</sup> <https://thenextavenue.com/2021/01/22/svolt-opens-orders-for-its-nmx-nickel-manganese-batteries/>

<sup>4</sup> Reference: Company ASX release dated 12 February 2019

<sup>5</sup> Reference: Company ASX release dated 18 January 2022

<sup>6</sup> Morgan Stanley Research published 3 September 2021

<sup>7</sup> Euromanganese company presentation dated September 2021

## About the Butcherbird Manganese Project

E25's Butcherbird Manganese Project is a world-class manganese resource with current JORC resources of more than 263Mt of manganese ore<sup>8</sup>. In May 2020, the Company completed a Pre-Feasibility Study (PFS)<sup>9</sup> with respect to developing the deposit to produce manganese concentrate for export to generate early cashflow with a modest capital requirement<sup>10</sup>. Stage 1 of the Project development plan is complete and E25 has commenced shipping ore to offtake partners.

The PFS also highlighted the Project's potential for significant growth beyond the initial Stage 1 production volumes (the studies examined the potential for a 2X and 3X expansion to Stage 1 within 12 months of initial commissioning), and the Company expects to expedite the expansion of the Project in 2H FY2022.

In addition to the concentrate export business, the Company has completed extensive research & development and laboratory test work into the production of high purity manganese products including battery grade manganese sulphate (HPMSM) and High Purity Electrolytic Manganese Metal (HPEMM). The work has highlighted that the Butcherbird ores are highly amenable to an ambient temperature, atmospheric pressure leach process, resulting in a very efficient extraction of the manganese into solution, the key requirement for the cost effective and sustainable production of HPMSM and HPEMM.

The Project straddles the Great Northern Highway and the Goldfields Gas Pipeline, providing turnkey logistics and energy solutions. The Company plans to integrate renewable energy into the power solution over time to target a zero-carbon footprint for the Project, which is expected to also reduce energy costs. A cleaner, lower carbon flowsheet and high penetration renewable energy will place Butcherbird at the forefront of sustainable high purity manganese production.

### Mineral Resources

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
<b>Total</b>	<b>263</b>	<b>10.0</b>	<b>20.8</b>	<b>11.4</b>	<b>5.9</b>

Notes:

- Reported at a 7% Mn cut-off for the Measured and Indicated categories and an 8% Mn cut-off for the Inferred categories.
- All figures rounded to reflect the appropriate level of confidence (apparent differences may occur due to rounding)

<sup>8</sup> Reference: Company ASX release dated 17 April 2019.

<sup>9</sup> Reference: Company ASX release dated 19 May 2020.

<sup>10</sup> Reference: Company ASX release dated 3 December 2020.

## Mining Reserve

Based on the results of the Pre-Feasibility Study completed in May 2020, E25 has published a Maiden Ore Reserve for the Project of 50.55Mt in the Proved and Probable categories<sup>11</sup>.

Classification	Tonnes (Mt)	Grade (Mn%)	Contained Mn (Mt)	Recovered Mn (Mt)
Proved	14.4	11.5	1.65	1.35
Probable	36.2	9.8	3.56	2.92
<b>Total</b>	<b>50.6</b>	<b>10.3</b>	<b>5.21</b>	<b>4.27</b>

Justin Brown

**Managing Director**

Company information, ASX announcements, investor presentations, corporate videos and other investor material in the Company's projects can be viewed at: <http://www.element25.com.au>.

## Competent Persons Statement

The company confirms that in the case of estimates of Mineral Resource or Ore Reserves, all material assumptions and technical parameters underpinning the estimates in the market announcements dated 17 April 2019 and 19 May 2020 continue to apply and have not materially changed. The company confirms that the form and context in which the competent person's findings are presented has not been materially modified from the original market announcements.

The information in this report that relates to Exploration Results and Exploration Targets is based on information compiled by Mr Justin Brown who is a member of the Australasian Institute of Mining and Metallurgy. At the time that the Exploration Results and Exploration Targets were compiled, Mr Brown was an employee of Element 25 Limited. Mr Brown is a geologist and 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'. Mr Brown consents to the inclusion of this information in the form and context in which it appears in this report.

This announcement is authorised for market release by Element 25 Limited's Board of Directors.

<sup>11</sup> Reference: Element 25 Limited Reserve Statement lodged with ASX 19 May 2020.