

## Butcherbird Manganese Project - Operational Update

- Temporary process plant outage from logwasher shaft failure brings forward pre-existing plans for plant engineering modifications targeting improved plant production volumes.
- Ore processing halted while rectification strategy implemented, pre-processing ongoing.
- Full plant restart estimated for mid-December 2021.
- Replacement parts have been sourced, logistics solutions are being finalised.
- Local fabrication options are also being pursued to reduce downtime.
- Outage will not affect timing of November 2021 manganese shipment.
- E25 has brought forward pre-existing plans for plant engineering modifications to align with unplanned outage and reduce downtime.
- Scheduled modifications will be implemented earlier than scheduled, targeting efficiency gains and increased throughput capability of the processing plant.
- Pre-processing of material via the scalping screen is ongoing – this will provide substantial stocks of material for processing when full operations resume.
- **E25 continues to target nameplate production rates by year end 2021.**



Element 25 Limited (**E25** or **Company**) (**ASX:E25**) advises that the processing plant at the Company’s Butcherbird Manganese Project (**Project**) experienced a logwasher shaft failure on 18 November 2021. There were no injuries or damage to other plant components, however as the logwasher is a critical part of the processing plant, E25 has temporarily brought down the plant to rectify the problem.

The failed part is not a wear part and the failure is considered unusual and unexpected. As a result, spares are not held on site for these specific components, requiring remote sourcing of replacements.

Suitable replacement parts have since been sourced from the original equipment manufacturer (**OEM**) in Northern Ireland. Preparations are being made to air-freight the parts to site as quickly as possible to minimise the impact on ore production volumes. Until the logistics solution is fully defined, local fabrication alternatives are being pursued as a contingency against potential long lead times on transporting the parts to Australia and then to site.

### COMPANY SNAPSHOT

#### Market Summary

ASX code: E25  
 Shares on issue: 149M  
 Share price: \$1.175

#### 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.

E25's ore shipment planned for late November 2021 remains on track, however total volumes will reduce from an expected 47,000t to approximately 43,000t. The bulk vessel for this shipment, **MV Top Fair**, is expected to arrive in Port Hedland on or around 29 November 2021 to load during a scheduled laycan of 27 November to 1 December 2021.

Whilst this processing plant outage is unexpected, it coincides with a period of planned downtime in December 2021 to undertake engineering modifications to improve plant performance and maximise production of concentrate volumes.

The modification works include a range of tasks designed to improved plant access for maintenance, manage material flow through the plant, reduce wear on key components, improve noise and dust control as well as adjusting the overall site layout to increase operational and maintenance scheduling flexibility. The modifications are expected to reduce the requirement for manual labour, facilitate more proactive and more efficient maintenance activities to improve plant uptime and capacity thereby increasing total production volumes.

Whilst the timeline for these remediation and modification activities is fluid and dependent on a range of factors outside the Company's control, E25 is targeting a plant restart date of mid-December 2021.

This announcement is intended to lift the trading halt requested on 18 November 2021.

## Project team focus

E25's Operations team continues to focus on delivering nameplate production and anticipates achieving nameplate production at Butcherbird by Q1 2022.

The Business Development team is focussing on E25's multi-stage development strategy, including a Stage 2 expansion of the concentrate business followed by a Stage 3 development to convert the concentrate material into **HPMS** 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>1</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

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<sup>1</sup> <https://thenextavenue.com/2021/01/22/svolt-opens-orders-for-its-nmx-nickel-manganese-batteries/>

first **Zero Carbon Manganese** for EV cathode manufacture<sup>2</sup>. The Company anticipates releasing a Scoping Study in Q4 2021 prior to the release of the PFS in H1 2022.

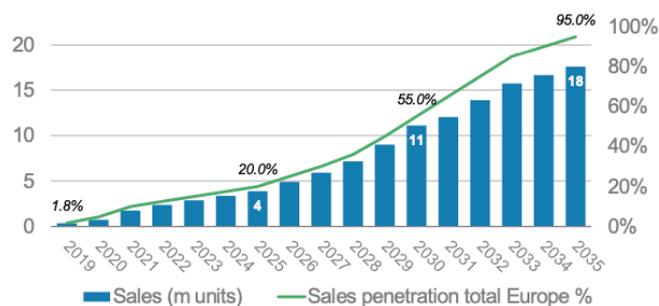
E25 remains well financed to expand operations with cash at bank exceeding \$29M at the end of the September Quarter<sup>3</sup>.

## Battery EV Penetration Rate Forecast to Increase Further

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>4</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>5</sup>



Source: ACEA, Morgan Stanley Research estimates

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

<sup>2</sup> Reference: Company ASX release dated 12 February 2019.

<sup>3</sup> Reference: Company ASX release dated 29 October 2021.

<sup>4</sup> Morgan Stanley Research published 3 September 2021

<sup>5</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>6</sup>. In May 2020, the Company completed a Pre-Feasibility Study (PFS)<sup>7</sup> with respect to developing the deposit to produce manganese concentrate for export to generate early cashflow with a modest capital requirement<sup>8</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>6</sup> Reference: Company ASX release dated 17 April 2019.

<sup>7</sup> Reference: Company ASX release dated 19 May 2020.

<sup>8</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>9</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>9</sup> Reference: Element 25 Limited Reserve Statement lodged with ASX 19 May 2020.