ANNOUNCEMENT | 13 MAY 2024 | ASX: E25

E25 OPTIMISES PLANT DESIGN AS BUTCHERBIRD EXPANSION ACCELERATES TOWARDS FID

In line with its strategic plan, Element 25 Limited (**E25** or **Company**) (**ASX: E25**; **OTCQX: ELMTF**) is accelerating activities for the planned expansion of its Butcherbird Manganese Project in WA (**Butcherbird** or **Project**), as outlined in the Feasibility Study (**FS**) released in January 2024[1]. Key areas of focus include process optimisation, Front-End Engineering and Design (**FEED**) activities, project finance and permitting. The Company is pleased to provide the following update.

The FS published in January 2024 outlined a compelling opportunity to expand production at the Butcherbird Mine to take advantage of the large resource base and increase commercial returns by increasing production to a nominal 1.1 Mt per annum of manganese concentrate at lower unit costs. The FS estimates a modest capital cost of $49.8M.

Element 25 Managing Director Justin Brown said: "*The Butcherbird Project hosts a world-class manganese deposit with more than 260Mt in resources, which will underpin the mine as a long-life producing asset[2]. The decision to progress with the Stage 2 expansion project comes at a time when manganese ore prices are showing strong gains after a period of depressed pricing during 2023[3]. The decline in prices came to a halt when the extent of the damage at South 32 Limited (**S32**) Groote Eylandt Manganese Mine became clear with S32 recently forecasting a disruption in production until 2025[4]. Prices in recent weeks have rebounded strongly with current pricing for 44% high-grade material quoted at **U$6.93/dmtu** cif Tianjin, approximately **60% higher** than the quoted pricing in early April.[5]*"

Capital Cost	NPV_8	IRR	Cashflow	Payback
AU$49.8	AU$228M	113%	AU$57.3M	1.2
(incl. contingency)	(Pre-tax, real)		(annual)	(years)

[1] Reference Company ASX release dated 23 January 2023
[2] Reference Company ASX release dated 29 September 2023
[3] https://investingnews.com/manganese-forecast/
[4] https://www.abc.net.au/news/2024-04-22/south32-groote-eylandt-manganese-mine-exports/103752974
[5] https://www.fastmarkets.com/

Element 25 Limited
Level 1, Building B, Garden Office Park,
355 Scarborough Beach Road,
Osborne Park WA 6017

ABN: 46 119 711 929
T: +61 8 6375 2525
E: admin@e25.com.au
W: element25.com.au

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OTCQX Ticker:	ELMTF
Issued Shares:	218M
Debt:	Nil

INNOVATION AT BUTCHERBIRD

There have been important advancements, particularly in the FEED phase of the Butcherbird expansion, where the Company has optimised the plant's delivery while minimising design, cost, delivery risk, processing risks and improving energy efficiency and emission profiles. This update outlines the progress in engineering design and project management, processing plant enhancements, procurement, project scheduling, environmental initiatives, technological advancements, and the Company's commitment to technical excellence, indigenous engagement, as well as social and environmental responsibility and sustainability.

Engineering Design and Project Management

E25 has engaged local specialist engineering firm ProjX to manage the engineering design phase and serve as owner's engineer throughout project execution. ProjX will assist with engineering, procurement and construction management activities to ensure a streamlined and well-managed project implementation plan.

Operational Improvements

The project team has made strategic improvements to the initial plant design, enhancing operational efficiency and maximising productivity. Integrating a second-stage crushing system will process larger materials directly into the primary circuit. The feed bin and apron feeder have been upsized to optimise truck cycling times and minimise feed disruptions, which has the potential to increase plant utilisation and reduce bottlenecks. The secondary crushing stage has been optimised to handle specific material sizes, ensuring a seamless process flow and eliminating the need for additional screening and material re-handling, a key focus of the design methodology.

Mining equipment sizing optimisation modelling has confirmed equipment selection to minimise unit mining costs, rehandling and ensure continuous plant feed availability. Further studies will investigate the potential to introduce electrified mining equipment and minesite light vehicles to reduce carbon emissions.

Process controls are being designed to ensure that each principal processing stage can operate as close to maximum performance as possible whilst allowing for in-process surge points and redundancy to allow for scheduled maintenance without interrupting production. Automation is being implemented at each stage to optimise equipment set points and performance.

Water consumption reduction through the potential introduction of a thickener and intelligent recycling will reduce the impact on the local water resources while reducing bore field operational costs.

Inline analysers will enable dynamic feedback to process control systems based on desired product specifications and allow for the optimisation of product blends and sales pricing based on customer requirements.

Crushing and Screening Circuit

Through extensive review, E25 has identified significant improvements to the crushing circuit at Butcherbird. These enhancements are designed to streamline operations, reduce the frequency of plant stoppages, and optimise material handling efficiencies. Key consideration was given to the clay-rich nature of the ROM feed, and several design modifications have been made to the flowsheet to eliminate the impact of these materials. Consideration has also been given to minimising double handling of material, with direct truck dump feed as the principal feed method into a feed hopper.

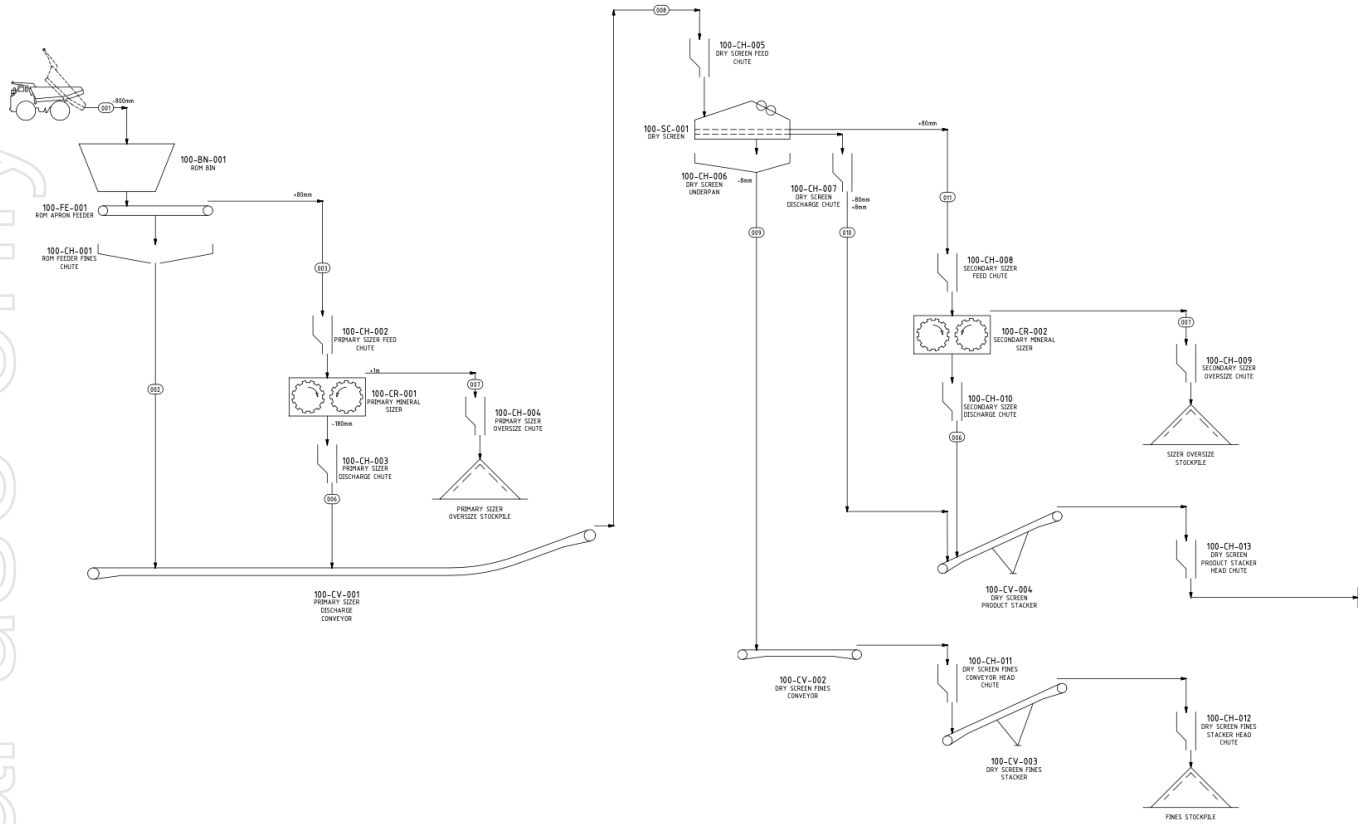

Figure 1. Crushing circuit process flow diagram

Key Crushing Circuit Upgrades

During post-FS design optimisation, several changes have been made to improve crushing circuit performance and reliability including:

- Upgraded Apron Feeder: The apron feeder has been expanded from 1.5m to 2m wide, enhancing its capacity to handle larger particles. This adjustment allows direct feeding into the mineral sizer, reducing the likelihood of bridging and associated process disruptions.
- Two-Stage Crushing Circuit: Installation of a larger mineral sizer replaces the need for a roller screen. This new sizer is ideal for processing larger particles, with an increased open area that allows undersize materials to pass through effortlessly. The sizer can reduce material up to 1m to a nominal size of 180mm. A secondary, smaller mineral sizer will process oversise feed (>80mm) to ensure product sizing aligns with customer requirements.
- Streamlined Screening Process: After stage 1 crushing, feed material will be screened via a flexible media double-deck dry screen, where particles over 80mm are redirected to the secondary sizer. The screen removes material smaller than 8mm from the system. This “dry fines” material is used to construct tails storage facility (TSF) walls.

Operational Benefits

The enhancements are expected to minimise the impact of clay-rich laterite ROM feed material, minimise double handling with the truck-dumping strategy, and maximise plant utilisation and throughput. They aim to minimise potential blockages and to future-proof the plant against expected expansions, ensuring sustained operational excellence and reduced downtime. Implementing strategic upgrades allows E25 to continue prioritising efficiency and reliability, demonstrating the Company’s commitment to innovation and leadership in the manganese industry.

Logwashing System

E25 is improving the processing capabilities of its log washing system by introducing technical enhancements that optimise material handling and increase water recovery efficiency.

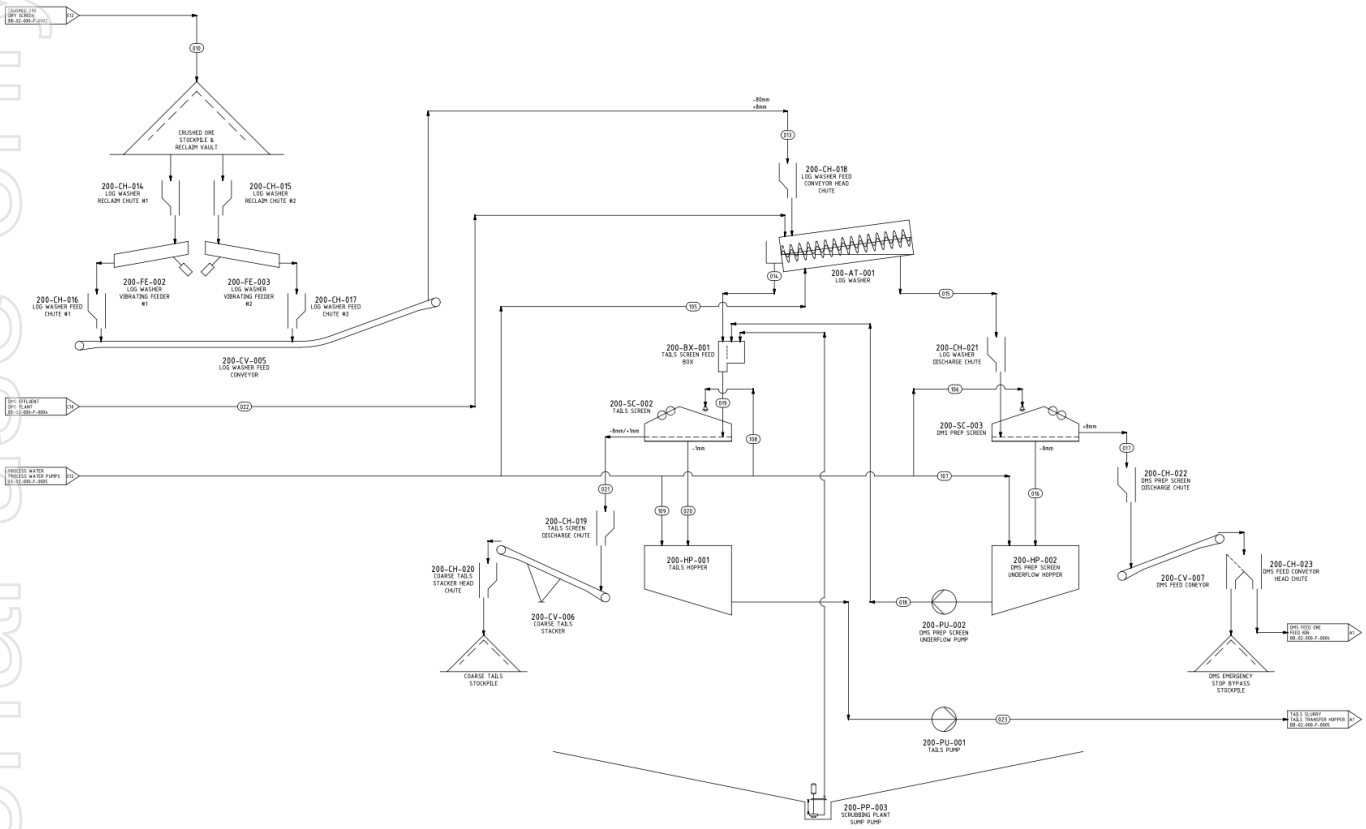

Figure 2. Washing circuit process flow diagram.

Enhanced Logwashing System Features

- Adjustable Washing Angles: The logwasher features variable angles, allowing precise control over the residence time of materials in the washer, thereby optimising the scrubbing efficiency.
- Upgraded Washing and Screening Equipment: The washing screen has been increased in size, ensuring thorough rinsing of slimes following log washing. This larger screen facilitates effective particle rollover, enhancing the washing coverage on all material surfaces scrubbed by the log washer.
- Strategic Screening of Oversized Materials: Material exceeding 8mm is screened out and directed to an oversized trash and organics screen, which has been expanded to manage additional material from the log washer rinse screen. This screen is equipped with 1.2mm X 12mm polyurethane panels, optimising the separation of particles down to -1.2mm.
- Improved Slimes Management: The undersized fraction from this screening stage, primarily comprising slimes, is transferred to the TSF. Incorporating this additional screening step will effectively reduce ~35% of the mass destined for the TSF, streamlining the pumping process and tailings deposition.

Water Recovery and Operational Efficiency

The system enhancements will also improve the water recovery rate above the initial recovery of 83% at Stage 1 operations, with further water savings anticipated from reduced material being pumped to the TSF. This optimised process aligns with the Company's sustainability goals and enhances the project's overall efficiency.

Dense Media Separation (DMS)

E25 is nearing the final design stages for a new Dense Media Separation (DMS) circuit, which will use results from ongoing test work with typical feed material.

Recent Testwork Overview

The latest test work involved recombined product and waste samples from the Stage 1 pilot plant operations, re-processed through a DMS drum at a test facility in South Africa at selected cut densities of 3.0, 2.9, and 2.7 t/m^3.

Figure 3. DMS testwork sample trays showing sinks (dark) and floats (light).

The data resolution was enhanced using 10mm tracers distributed across 20 density bins ranging from 2.64 to 4.54 t/m^3, with approximately 50 tracers per bin. The test work was performed on a DMS drum identical to the technology selected for E25's flowsheet, ensuring consistency and relevancy in the results and operational forecasts.

This work was undertaken on the <40mm sample fraction. The second phase of the work, which is currently being completed, involves individual particle density measurement and modelling for material >40mm. The outcomes of this test program will provide essential data to guide the DMS plant design and operating parameters.

Anticipated Outcomes

The visual observations from the test work are encouraging, and the team is awaiting the analytical results and results from the subsequent tests of the >40mm fraction to further validate the effectiveness of the DMS process under these operational parameters. These findings will play a crucial role in optimising the final design of the DMS circuit to enhance both the efficiency and throughput of the processing operations.

Next Steps

Upon receipt of the complete analytical results, E25 will refine the DMS circuit design to ensure maximum operational efficiency and material handling capacity. The Company aims to implement a system that meets and exceeds its operational requirements.

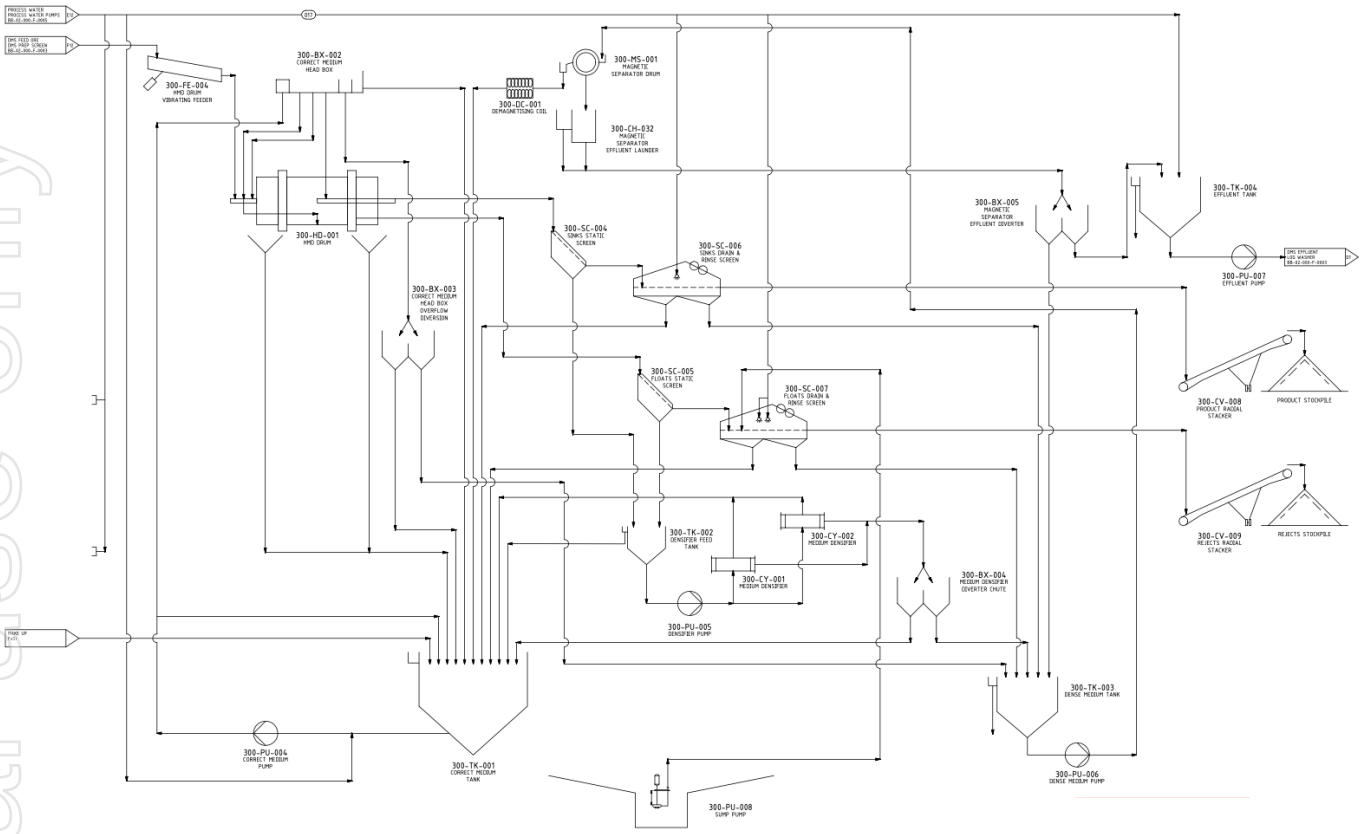

Figure 4. Dense media separation circuit process flow diagram.

Dust Suppression Systems

The Company is committed to maintaining a safe and efficient workplace. To that end, significant improvements have been made with respect to on-site dust suppression and containment systems. The proactive approach involves collaborating with multiple technology providers to integrate the most suitable solution(s).

Key Features of Dust Suppression System

- Innovative Suppression Technologies: Incorporating atomised and dry fog systems that effectively suppress dust with minimal water usage. These systems are designed to significantly reduce water consumption while maintaining optimal dust control.
- Electrostatic Dust Mitigation: Utilising cutting-edge electrostatic technology for dust mitigation further enhances operational cleanliness and safety.

Operational and Environmental Benefits

Dust suppression technologies are essential to ensure that the Company's personnel and machinery operate in an environment where airborne dust hazards are minimised. Implementing these systems supports E25's commitment to environmental stewardship and occupational health, ensuring operations exceed industry standards for safety and efficiency.

Control optimisation and IIOT integration

Element 25 plans to integrate an Industrial Internet of Things (IIoT) system into the Butcherbird operations. This strategic upgrade is designed to enhance data integration and operational control both onsite and remotely from E25's Perth office, ensuring high-level oversight and efficiency.

Key Features and Integration Strategy

- Advanced-Data Management and Analysis

The platform will enable enterprise-wide data integration and reporting. Leveraging the Historian software and Vision analytics platform, the team will have access to efficient data storage and analysis tools that will integrate with existing data sources in the E25 Perth office.

- **Enhanced Operational Visibility**

Utilising simple, intuitive dashboards, graphs, and Key Performance Indicators (KPIs), the platform will allow real-time analysis and live operational oversight, significantly improving decision-making capabilities.

- **Real-time Analysis of Material and Automated Process Control**

Integrating Prompt-Gamma Neutron Activation Analysis (PGNAA) analysers into the processing plant marks a leap forward in real-time material stream analysis. This technology provides in-line, real-time whole rock analysis for key elements, providing an opportunity for immediate adjustments in process parameters to align with feed composition. This allows the process plant control algorithm to optimise mineral recovery and grade and eliminates the need for manual intervention, leading to near-complete plant automation and remote monitoring.

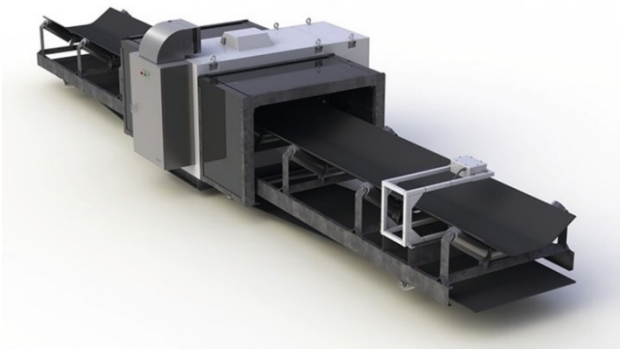

Figure 5. Inline PGNAA analyser provides real-time analysis.

- **Secure and Efficient Operational Control**

As a result of the Insights feature, operations will benefit from secure storage and robust analysis of operational data, facilitating improved strategies and processes across the value chain.

- **Remote Access and Expert Collaboration**

The VIP Platform supports remote access to real-time standardised data, enabling the team in Perth to collaborate with global specialists and OEM suppliers. This promotes a collaborative environment, extending E25's remote consulting and decision-making capabilities.

- **Continuous Improvement and Customisation**

The Company's approach includes a systematic, data-driven methodology that begins with quality data collection and extends through information analysis, control, and optimisation. This system will support ongoing adaptation and improvement and be tailored to the specific needs of the operations.

- **Integration Across the Value Chain**

The Data Platform connects people and processes and integrates with a wide range of instruments, products, and advanced process control solutions. This comprehensive integration is essential for optimising every aspect of the operations, enhancing efficiency, and reducing downtime.

- **Futureproofing Operations**

Investing in the VIP Platform ensures E25 has a scalable and adaptable system that can evolve with technological advancements and operational needs. This forward-thinking approach guarantees the Company's data management and process optimisation infrastructure remain at the cutting edge, providing a sustainable competitive advantage.

Through the deployment of the VIP Platform, E25 reinforces its commitment to technological innovation, operational excellence, and environmental stewardship, setting new standards in the mining industry.

Project Scheduling, Procurement and Cost Management

The Company is initiating the FEED design stage before the final funding allocation, which allows E25 to control initial costs and avoid timeline delays. This proactive strategy ensures that plant design advances efficiently to 3D modelling, effectively managing equipment selection risks, ordering long-lead items, layout design, and permitting.

Detailed project scheduling has identified several long-lead procurement requirements, particularly the vendor selection and ordering of the principal equipment for the crushing circuit. The project team has confirmed mineral sizers as the technology of choice, and a bid package has been prepared to source crushing equipment from reputable suppliers who can provide ongoing support and maintenance services. Other long-lead items are being approached similarly to minimise project execution schedules.

Indigenous Engagement

As part of the Company's commitment to ongoing engagement with Traditional Owners, an Indigenous Engagement Plan (IEP) is being developed to provide a strategy to enhance Indigenous groups' participation, procurement, and employment in relation to the project.

The IEP will include processes for engaging with local Indigenous groups to assess their capabilities and capacity to participate and ensure that they have an opportunity to participate in procurement and contracting opportunities as they arise throughout project execution.

Element 25 has agreements in place with Traditional Owners on whose land the project will operate, but the intention is to expand the level of Indigenous engagement into other opportunities through construction and operations.

Environmental and Operational Innovations

E25 is actively pursuing strategies to reduce water usage and dust emissions. The Company's innovative approaches demonstrate commitment to environmental stewardship, such as advanced dewatering screening systems, optimised log washers for reduced water consumption, and high-pressure mist systems for dust suppression.

Furthermore, the Company have streamlined material handling processes to significantly reduce dust generation, enhancing operational efficiency and workplace safety.

Reducing double handling is a key focus of the engineering team's design initiatives. Where this can be achieved, it will reduce cost and overall energy consumption from diesel-powered mobile plants. Additionally, E25 is exploring the opportunity to deploy an electric or hybrid mining fleet further to reduce fossil fuel usage during mining operations.

Power generation is likely to be a hybrid diesel-solar system, and discussions have been initiated with potential suppliers to optimise the energy mix and explore a range of contracting strategies, including engaging with an IPP to minimise upfront capital.

COMMITMENT TO EXCELLENCE AND SUSTAINABILITY

E25's commitment to building a state-of-the-art processing plant that sets new standards in performance, reliability, emission reduction, safety and operational efficiency is unwavering. By leveraging industry-leading expertise and lessons learned from the Butcherbird pilot plant, the Company targets a high level of operational readiness and smooth project execution and commissioning.

The Stage 2 Butcherbird Expansion Project aims to harness lessons learned from the Stage 1 Pilot Plant to extract the maximum value from the process-proven resource at the Butcherbird Project, deploying cutting-edge technologies with a view to generating shareholder returns whilst demonstrating a core focus on safety, sustainability, indigenous engagement and operational excellence. The expanded Butcherbird Mine has the potential to supply high-quality, low-carbon, sustainable manganese ore supply over many years to the Company's planned HPMSM refineries to provide a critical raw material for the electrification of the world energy systems as the world looks to reduce its dependency on fossil fuels and fight climate change.

ABOUT ELEMENT 25

Element 25 is an ASX-listed company (**ASX: E25**) that operates the world-class, 100%-owned Butcherbird Manganese Project in Western Australia. It is currently undertaking activities to expand production to approximately 1.1Mtpa of medium-grade high silica manganese ore for use in traditional and new energy markets.

E25 is also commercialising innovative proprietary technology to produce battery-grade high-purity manganese sulphate monohydrate (**HPMSM**) for use in Electric Vehicle (**EV**) battery manufacturing. The Company is planning to construct its first HPMSM refinery in Louisiana, USA, to produce raw materials for the US EV market, in partnership with General Motors LLC (GM) and Stellantis N.V. (Stellantis). E25 aims to become an industry-leading, world-class, low-carbon battery materials manufacturer.

Company information, ASX announcements, investor presentations, corporate videos, and other investor material in the Company's projects can be viewed at www.element25.com.au.
This announcement is authorised for market release by Element 25 Limited's Board of Directors.

Justin Brown

Managing Director
Email: admin@e25.com.au
Phone: +61 (8) 6375 2525

Media Inquiries:

Nathan Ryan
Email: nathan.ryan@nwrcommunications.com.au
Phone: +61 (0) 420 582 887

Competent Persons Statement

The company confirms that in the case of Mineral Resources or Ore Reserves estimates, all material assumptions and technical parameters underpinning the estimates in the market announcement dated 29 September 2023 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 have not been materially modified from the original market announcement.