

# QUARTERLY REPORT

## Highlights

### Butcherbird Manganese Operations, WA

- Production up 22% on last quarter to 62.2kt, with sales up 218% to 62.4kt helped by inventory destocking.
- Cashflow positive quarter achieved, driven by improved production and sales.
- Installation of secondary feeder in February 2023 has significantly debottlenecked front end feed rates in processing plant resulting in an immediate and material throughput improvement.
- Improved March production highlighted by achievement of 24-hour record production of 1,859t, well above 1,000 tpd nameplate.
- Cash margin per tonne substantially increased at increased production rates following installation of the secondary feeder as unit cash costs are reduced due to higher volumes.
- Plant uptime campaign continues, to further improve plant availability through maintenance system enhancements.

### High Purity Manganese (HPMSM) Project

- HPMSM Feasibility Studies in final stages of completion and peer review, due for release this month.
- Activities for next quarter to include:
  - Evaluation of engineering construction contractor proposals, permitting applications and site based surveys
  - Major packages early commencement of engineering design and awarding of front-end engineering design (FEED) contract.
- Definitive agreements signed with global automaker Stellantis to supply of HPMSM for Stellantis' EV battery requirements.

## ESG

- Supersmart Energy delivers cradle to gate independent Life Cycle Assessment (LCA) on E25's HPMSM process.
- Assessment covers Scope 1,2 and 3 emissions including mining and concentration facilities in WA and the proposed USA-based HPMSM processing plant.
- E25 HPMSM calculated to produce ~1.7kg of CO<sub>2</sub> for every 1kg of HPMSM, approximately 67% lower than current producers in China.
- Approximately 67% lower than competitors in China and up to ~26% lower than closest non-China competitors optimized case.
- Further reduction opportunities identified in the LCA report.

## Corporate

- At-the-Market Subscription Agreement ("ATM") provides E25 with up to \$30M funding over three years as it continues development of its battery-grade high purity manganese sulphate (HPMSM) processing capabilities.
- Board of Directors enhanced with the appointment of experienced manganese miner and analytical chemist Fanie van Jaarsveld and experienced chemical engineer Sam Lancuba.

## Butcherbird Operations

### Production

Mining and processing operations continued at the Company's 100%-owned Butcherbird Manganese Project (Project) in Western Australia.

E25 achieved significant improvements in production metrics during the quarter, with improved profitability as a result. Since commissioning, Butcherbird production volumes have been negatively impacted by clay-rich material that typifies ROM feed through the primary grizzly and crusher configuration into the downstream processing stages. The operational team has been working tirelessly to identify and resolve the root cause of these issues and to devise a solution.

Analysis of the production data generated through the ramp up of the plant concluded that the optimal

solution was to install a secondary feeder into the plant whereby the undersize plant feed material that does not require crushing bypasses the grizzly to minimise the blockages created by clay rich feed material.

E25 installed and commissioned the secondary feeder in February, resulting in an immediate and material improvement in throughput rates and concentrate production with commensurate and substantial reduction in cash operating costs.

Extensive work has also been undertaken on the optimisation of maintenance and uptime rates, and a specialist maintenance planner is currently engaged to further optimise this part of the business.

The Company remains focussed on continued improvements to the plant and the resultant production output.

The strategy for incorporating a dense media circuit into the backend of the process plant remains on foot and E25 will provide an update as soon as practicable with respect to forward planning in this area.

### Production Summary

Category	Unit	Sep-22	Dec-22	Mar-23
Opening Product Inventory	t	11,746	10,560	24,654
Mined Ore	t	267,021	275,338	311,385
Concentrate Production	t	49,893	51,227	62,277
Change	%	-	+2.6%	+21.6%
Product Sales	t	51,025	28,610	62,418
Closing Product Stockpiles	t	10,560	24,654	26,489
CIF China 44% Mn Price	USD/dmtu	\$ 5.77	\$ 4.57	\$ 6.00
Shipping Cost	USD/t	\$ 37.50	\$ 22.00	\$ 14.90

### Costs Summary

Cost/tonne (Mine Gate)	AUD	\$ 129.00	\$ 133.00	\$ 115.00
Cost/tonne (FOB)	AUD	\$ 206.00	\$ 201.00	\$ 180.00

### Key Metrics



Accessing sufficient skilled labour also continues to be a key issue in achieving the Company's operation targets however it is encouraging to note improvements with increasing numbers of applicants for vacant positions.

## Logistics

Ocean freight rates fell to pre-Covid levels in the early part of the quarter, but have trended moderately upwards in the latter part of the quarter. The MV Erin Manx departed in early January with approximately 46.6kt of manganese concentrate on board. A further 50kt of concentrate is in port at present, awaiting the arrival of the MV Pan Poseidon scheduled for early April 2023. The use of supra-max vessels contributed to the increase load rates at Utah Point and achieved a reduction in ocean freight rates.

Increased production volumes required additional road transport capacity and a record of ~30kt of manganese concentrate was transported in March 2023. A record of ~64kt of manganese concentrate was transported for the quarter. Diesel fuel costs have also eased lightly from historical highs in 2022.

## HPMSM Project

### Feasibility Study

The HPMSM feasibility study (FS) team is close to finalising the results of the investigations into a proposed, 100%-owned, vertically integrated battery grade HPMSM facility. The HPMSM will be suitable for use in the manufacture of electric vehicle Pre-Cathode Active Materials (PCAM).

As highlighted in earlier reports, the FS team has been working to localise the work completed previously on a Malaysian location to an alternative potential location in the USA. The investigation of a potential transition has been driven by the legislative changes in the USA which via the Inflation Reduction Act (IRA) now offer significant incentives for battery raw material production in the USA (see discussion below).

During the quarter, the Malaysian based FS estimate and other third-party inputs were completed. The Malaysian design was localised and estimated for a USA location also with completion of the US third-party inputs.

These two parallel studies have, as expected, highlight a difference in capital cost for the development of comparable facilities between the two jurisdictions and the wider strategic analysis of the strengths and attributes of the two locations are in progress. The Company is in discussion with the local and state governments in both jurisdictions regarding potential incentive packages available to support the development of the facility.

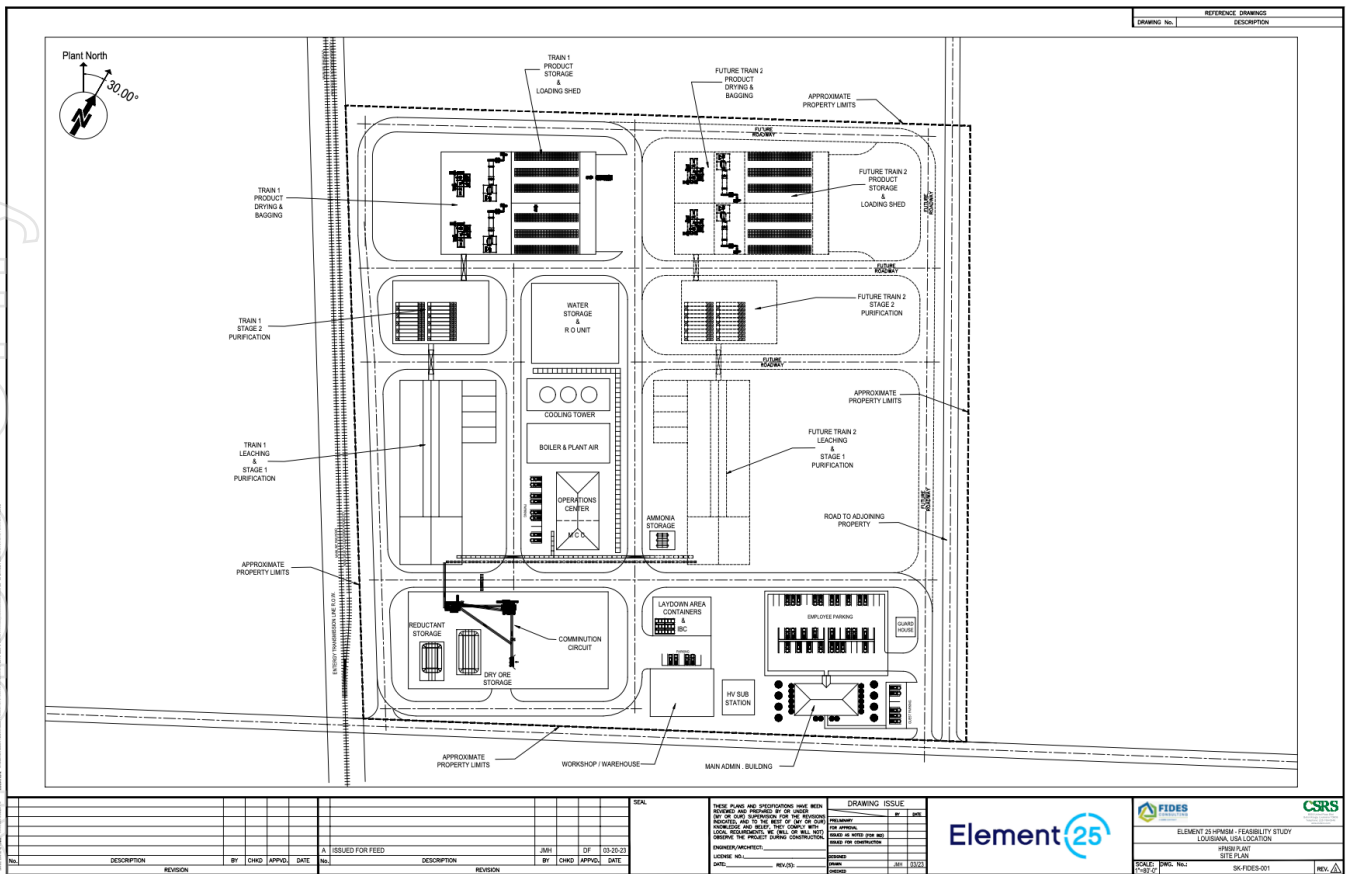


Figure 1: HPMSM site layout design.

Local Louisiana based engineering services firm CSRS/FIDES has been providing project management consultant support for the USA project development. Engineering construction contractors have now been shortlisted with a request for proposal document issued to candidate engineering construction contractors.

The Company looks forward to announcing the results of the FS as soon as it is finalised. Once completed the focus will fall on the following core activities:

- Evaluation of engineering construction contractor proposals;
- Permitting applications;
- Site based surveys;
- Major packages early commencement of engineering design;
- Placement of FEED contract;
- Commitment to land agreement;
- Major raw material supply agreements; and
- Increased local stakeholder engagement.

## Impact of the Inflation Reduction Act<sup>1</sup>

The United States Inflation Reduction Act passed in the USA Congress in August 2022, and will inject hundreds of billions of dollars into clean energy and Electric Vehicle (EV) incentives and programs. Multiple provisions of the IRA directly impact EV supply chains including the HPMSM used in the manufacture of EV batteries. Importantly, to qualify for certain incentives, a percentage of the value of applicable critical minerals contained in a vehicle's batteries must be extracted or processed in the

US or in a country with which the US has a free trade agreement (**FTA**) (or must have been recycled in North America).

Applicable percentages increase from 40 percent prior to 2024, to 80 percent after 2026. Also significantly, after calendar year 2024, the incentives will not be available for EVs that contain critical minerals that were “extracted, processed, or recycled by a foreign entity of concern”. Importantly for E25 investors, qualifying FTA countries include Australia and qualifying critical minerals include manganese, placing the Project and the Company’s HPMSM processing technology in an excellent position to supply US based EV market supply chains in coming years whilst allowing our partners to maintain eligibility for the incentives offered under the IRA scheme.

### Offtake/Financing Negotiations

The IRA caused a perceptible change in the appetite for North American produced battery materials including HPMSM. The Company has been engaged in constructive discussions for several months with several potential offtake partners in relation to the supply of HPMSM using the E25’s process to satisfy potential growth in demand for HPMSM in lithium-ion battery cathodes for EVs.

Element 25 is targeting two to four principal offtake partners to support the project prior to FID. The novel approach to project financing means that partners are incentivised to offer comprehensive financing solutions to ensure timely development of the Project.

### Stellantis Offtake Agreement

As announced in January 2023, Company has entered into a binding agreement (**Agreement**) with **Stellantis N.V. (Stellantis)** to supply HPMSM from E25’s proposed USA-based processing facility (**the Facility**)<sup>1</sup>.

The Agreement combines take or pay offtake commitments for 45Kt of HPMSM from the facility over five years with US\$30M in two tranches of project funding towards the facility capital cost.

### ESG

An independent Life Cycle Assessment (**LCA**) for E25’s battery-grade (**HPMSM**) production process has confirmed the mine-to-market carbon footprint for the production of E25 HPMSM as the lowest in the global manganese industry based on published data<sup>2</sup>.

The LCA was based on data from E25’s Butcherbird operations in the Pilbara region of WA and its FS for a proposed HPMSM plant in Louisiana, USA and was compared to publicly available LCA reports from peers Euro Manganese (**ASX: EMN**) and Giyani Metals (**TSXV: EMM**), which are also developing HPMSM projects as well as independently validated data on the carbon intensity of current Chinese production methods.

E25’s HPMSM process is estimated to produce just **1.7kg CO<sub>2</sub> equivalent per kg of product**, which is ~ 67% lower than competitors in China, and up to 47% lower than planned projects located outside China. Peers included in the comparative analysis include Euro Manganese’s Chvaletice project in the Czech Republic and Giyani Metals’ K. Hill project in Botswana<sup>3</sup>.

<sup>1</sup> Reference: Company ASX release dated 9 January 2023.

<sup>2</sup> Reference: Company ASX release dated 16 February 2023.

<sup>3</sup> <https://www.mn25.ca/post/comparative-lca-study-results-show-emn-s-battery-grade-manganese-products-have-lowest-co2-footprint>

Table 1: HPMSM LCA published result comparison.

LCA Comparison for HPMSM – based on publicly available data					
Impact Category	Element 25	Euro Manganese (Grid)	Euro Manganese (Renewable)	Giyani Metals	Units per Kg of HPMSM
Scope 1	0.07	0.4	0.4	0.2	kg CO <sub>2</sub> eq.
Scope 2	0.38	3.3	0.7	1.2	kg CO <sub>2</sub> eq.
Scope 3	1.21	1.2	1.2	1.8	kg CO <sub>2</sub> eq.
Global Warming Potential	1.7	4.8	2.3	3.2	kg CO <sub>2</sub> eq.

Perth-based consultancy Super Smart Energy completed the cradle-to-gate study, which means the life cycle has been assessed from the point of resource extraction (cradle; including pre-extractive removal of overburden and waste rock) to end gate, which is HPMSM ready for distribution<sup>4</sup>. The study aims to assist in project development and improvement through identification of environmental hotspots, and it was carried out in accordance with ISO-14040/44:2006 and ISO-14044:2006 standards, with 16 Environmental Footprint 3.0 impact categories evaluated. Climate change and water scarcity footprint impacts were investigated in more detail via contribution analysis.

The most significant contributors in the production of E25's HPMSM to climate change impact are the reagents required for the process and electricity associated with the plant.

The plant is initially expected to source electricity from the grid based on natural gas fired generation, which does not include optimisation using renewable energy (RE) integration. The LCA has recommended that E25 focus on sourcing RE for the plant, which is expected to further reduce its carbon footprint. E25 intends to include RE in pre-construction optimisation work, either sourced from the grid via established RE producers or by utilising on site roof top solar and other similar technologies.

### Ternary Battery Metal Comparison

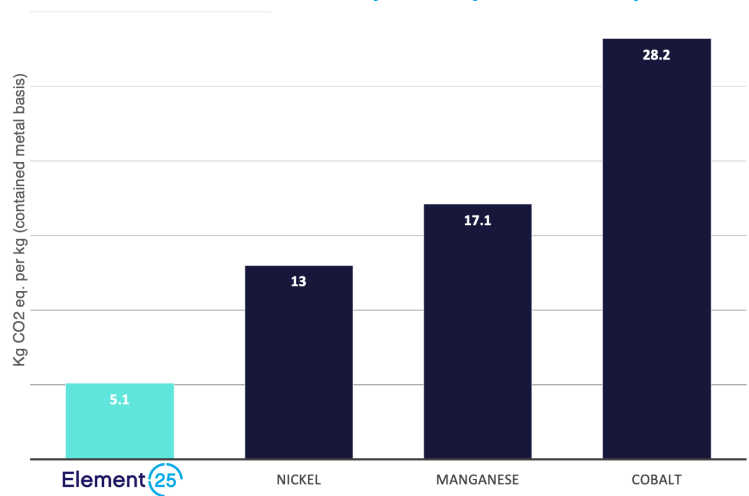


Figure 1. E25 HPMSM carbon intensity vs current cathode metal production.

<sup>4</sup> Supersmart Energy: Prospective Life Cycle Assessment Study of Element 25's High Purity Manganese Sulphate Monohydrate Manufacturing - February 2023

There is also opportunity to consider the environmental impact of reagents by transitioning over time to reagents produced using RE and/or non petrochemical feedstocks. E25 will further investigate these opportunities as part of a longer term decarbonization strategy.

As a base case, this LCA has successfully shown the Element 25 process can produce HPMSM with the lowest global warming potential compared to all available competitors and there remains significant potential to further reduce the carbon intensity of the E25 HPMSM product.

For this LCA, the functional unit was one kilogram of HPMSM at >32% manganese content and the reference flow is 1kg of HPMSM at >32% manganese content produced at the HPMSM plant from manganese concentrate extracted and processed at E25's Butcherbird mine. The study was performed in accordance with ISO 14040/44:2006 standards<sup>5,6</sup>.

The study is based on data from the operational E25 Butcherbird mine, and work completed as part of the FS for the production of HPMSM. Background data was sourced from Ecoinvent 3.9.1 and some global averages were used for reagents, creating associated limitations to the study.

The LCA study was completed by Super Smart Energy and a subsequent critical review was carried out by two independent external experts, covering the required competencies relevant to the critical review. The critical review was performed at the end of the LCA study.

## Climate Change Potential

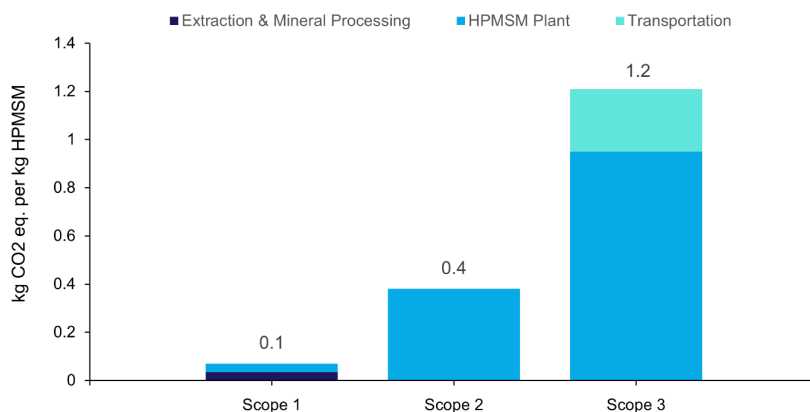


Figure 2. Climate change potential impact by scope 1,2 & 3 classifications.

## Climate Change Potential

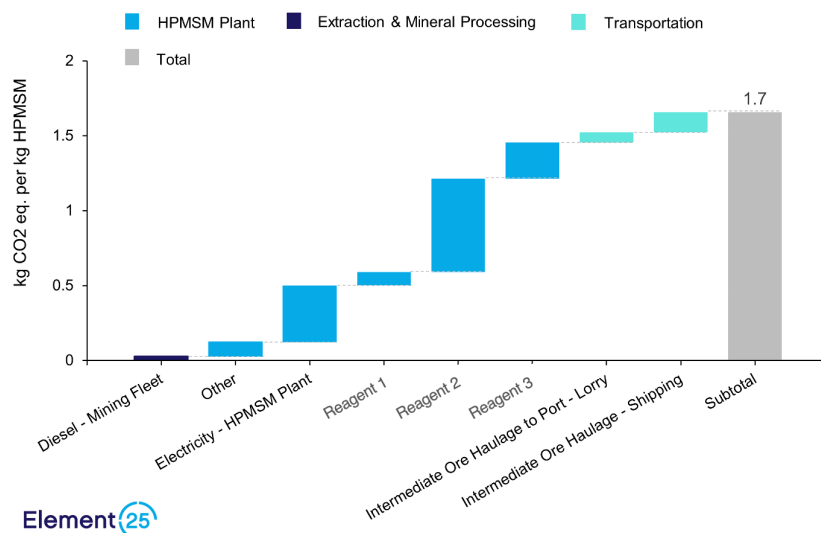


Figure 3. Climate change potential waterfall by supply chain segment.

<sup>5</sup> International Standards Organisation (ISO). ISO 14040:2006 - Environmental Management - Life Cycle Assessment - Principles and Framework. (2006).

<sup>6</sup> International Standard Organization (ISO). ISO 14044: Environmental Management — Life Cycle Assessment — Requirements and Guidelines. (2006).



## Corporate

### Board Changes

During the quarter the Company announced the appointment of Fanie van Jaarsveld and Sam Lancuba as Directors of the Company. Both new board members bring a wealth of experience in key disciplines to support the existing board.



**Mr Fanie van Jaarsveld** is an experienced company director and has held numerous senior management and executive positions over a career spanning more than 40 years. With a demonstrated history of working in the mining and metals industry, Mr van Jaarsvelds Managing Director for OM Manganese which operates the Bootu Creek manganese mine in the Northern Territory and highly skilled in mining, mineral processing and operational management. He has strong business development expertise and will be a key asset in achieving the Company's production targets at the current manganese operation as well as helping to guide the planning and implementation of the expanded production plans at the Project and the downstream production of HPMSM.

Mr van Jaarsveld has a ND Analytical Chemistry from the Cape Peninsula University of Technology, Cape Town.



**Mr Sam Lancuba** is a chemical engineer with more than 40 years' experience in the global fertiliser industry. Mr Lancuba has worked in research and development, process engineering, manufacturing and management. Following 27 years at Incitec Pivot Limited, an ASX top 50 company, Mr Lancuba has been providing expert consulting services for industry clients in Australia, New Zealand, USA, South America, Europe, India and China.

Mr Lancuba currently advises fertiliser industry clients in a range of areas including plant design and maintenance, project management, project evaluation and marketing strategies for fertiliser products. He has extensive experience in chemical processing, project development and operations in the chemical industry as well.

Mr Lancuba will be a valuable asset as the Company moves toward the construction of the first processing plant globally to produce ethical, traceable HPMSM using the Company's proprietary process to convert Australian manganese ore to HPMSM for EV batteries.

Mr Lancuba holds an Engineering Degree in Chemical Engineering from RMIT University.

### Standby Equity Facility

As part of its ongoing capital management strategy, the Company signed an At-the-Market Subscription Agreement (**ATM**) with Acuity Capital to provide E25 with up to \$30 million of standby equity capital over the coming 36 month period. This standby facility may be used to fund the development of the High Purity Manganese Sulphate Facility Project and working capital

Under the ATM, E25 has full discretion as to whether or not to utilise the ATM, the maximum number of shares to be issued, the minimum issue price of shares and the timing of each subscription (if any). There are no requirements on E25 to utilise the ATM and E25 may terminate the ATM at any time, without cost or penalty.



Acuity Capital and the ATM do not place any restrictions on E25 raising capital through other methods. If E25 does decide to utilise the ATM, E25 is able to set a floor price (at its sole discretion) and the final issue price will be calculated as the greater of that floor price set by E25 and up to a 10% discount to a Volume Weighted Average Price (VWAP) over a period of E25's choosing (again at the sole discretion of E25).

As security for the ATM, the Company has agreed to place 9,500,000 fully paid ordinary E25 shares to Acuity Capital at nil cash consideration. Upon termination or maturity of the ATM, E25 may buy back (and cancel) the shares placed as security for nil cash consideration (subject to shareholder approval). E25 has issued 5,000,000 shares on 10 February from its Listing Rule 7.1 capacity and a further 4,500,000 approved at the EGM of 20 March 2023 will be issued to meet the security requirement.

## About Element 25

Element 25 is an ASX listed company (ASX: E25) operating the world class 100%-owned Butcherbird Manganese Project in Western Australia and developing battery grade high purity manganese sulphate monohydrate (HPMSM) products for traditional and new energy markets. It 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](http://www.element25.com.au).

Justin Brown  
Managing Director  
Email: [admin@e25.com.au](mailto:admin@e25.com.au)  
Phone: +61 (8) 6375 2525

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

## 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.

## Forward Looking Statements

This announcement may include forward-looking statements. These forward-looking statements are based on Element 25's expectations and beliefs concerning future events. Such forward-looking statements concern Element 25's anticipated results and progress of its operations in future periods, planned exploration and, if warranted, development of its properties and plans related to its business and other matters that may occur in the future. These statements relate to analyses and other information that are based on forecasts of future results, estimates of amounts not yet determinable and assumptions of management. All statements contained herein that are not clearly historical in nature are forward-looking, and the words "anticipate," "believe," "expect," "estimate," "may," "might," "will," "could," "can," "shall," "should," "would," "leading," "objective," "intend," "contemplate," "design," "predict," "potential," "plan," "target" and similar expressions are generally intended to identify forward-looking statements.

Forward-looking statements are subject to a variety of known and unknown risks, uncertainties and other factors which could cause actual events or results to differ from those expressed or implied by the forward-looking statements. Forward-looking statements in this release include, but are not limited to, statements with respect to risks related to:

- Element 25's operations being further disrupted and Element 25's financial results being adversely affected by public health threats, including any renewed coronavirus pandemic;
- Element 25's limited operating history in the HPMSM industry;
- Completing required permitting, zoning and re-zoning activities required to commence processing operations for Project;
- Element 25's ability to achieve and maintain profitability and to develop positive cash flows from Element 25's mining and processing activities;
- Investment risk and operational costs associated with Element 25's exploration activities;
- Element 25's ability to enter into and deliver products under supply agreements;
- The pace of adoption and cost of developing electric transportation and storage technologies dependent upon lithium batteries;
- Element 25's ability to access capital and the financial markets;
- Recruiting, training and developing employees;
- Compliance with government regulations;
- Environmental liabilities and reclamation costs;
- Estimates of and volatility in HPMSM prices or demand for HPMSM;
- Element 25's share price and trading volume volatility; and
- Element 25's failure to successfully execute Element 25's growth strategy, including any delays in Element 25's planned future growth.

All forward-looking statements reflect Element 25's beliefs and assumptions based on information available at the time the assumption was made. These forward-looking statements are not based on historical facts but rather on management's expectations regarding future activities, results of operations, performance, future capital and other expenditures, including the amount, nature and sources of funding thereof, competitive advantages, business prospects and opportunities. By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties, both general and specific, known and unknown, that contribute to the possibility that the predictions, forecasts, projections or other forward-looking statements will not occur. Although Element 25 have attempted to identify important factors that could cause actual results to differ materially from those described in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those anticipated, believed, estimated, or expected. Element 25 cautions readers not to place undue reliance on any such forward looking statements, which speak only as of the date made. Except as otherwise required by the securities laws of Australia, Element 25 disclaims any obligation to subsequently revise any forward-looking statements to reflect events or circumstances after the date of such statements or to reflect the occurrence of anticipated or unanticipated events. Element 25 qualifies all the forward looking statements contained in this release by the foregoing cautionary statements.