

ELEMENT 25 USA HPMSM PROCESSING FACILITY PROJECT EXECUTION UPDATE

Highlights:

- Front-end Engineering and Design (FEED) completed to optimise HPMSM plant design for preferred Louisiana site.
- Cost reduction opportunities identified for further assessment during detailed design phase.
- Detailed project execution schedule finalised with mechanical completion on track for 2025 target.
- Local engineering and construction firms CDI Engineering Solutions and Universal Plant Services to continue engineering activities.
- CSRS Inc and subsidiary Fides Consulting to continue to support E25 as the owners engineer/strategic consultant.
- Local legal firm Roedel Parsons has been engaged to represent E25 as Louisiana legal advisor.
- Key utility and reagent supply agreements in negotiation.
- Preferred site offers significant strategic advantage including over the fence supply of sulphuric acid, steam and other key inputs.
- Site assessments including cultural, environmental and geotechnical surveys completed with no issues or concerns.
- Project execution plan advancing in line with project development timelines outlined in the FS.
- All contractual milestones under the General Motors LLC (GM) and Stellantis N.V. (Stellantis) offtake and funding packages on track.
- Final approvals for Louisiana state government subsidy package received.
- Industrial Tax Exemption Plan (ITEP) has been submitted.

Element 25 Limited (E25 or Company) (ASX:E25) is pleased to provide an update in relation to the planned construction of the first North American commercial scale battery grade high purity manganese sulphate (HPMSM) processing facility to produce key raw materials for electric vehicle (EV) battery manufacture in the USA. The facility is targeting commissioning in 2025 to produce the first low carbon, ethically sourced HPMSM in the USA (Project or Facility), processing manganese oxide ore from the Company's 100%-owned Butcherbird Manganese Project in Western Australia (Butcherbird).

Element 25 Managing Director Justin Brown said: “E25 aims to be a leading source of high quality, vertically integrated, traceable and ESG and IRA-compliant battery material to the global electric vehicle industry. The construction of our first HPMSM facility in the USA – the first of its kind there – is a key pillar to the strategic plan which aims to position E25 as the industry leading provider of high quality ethically sourced battery grade manganese to support global electrification efforts. The team has made extraordinary progress to date and we will continue to push hard to achieve the project execution plans which are rapidly taking shape for a 2025 commissioning date.”

Project Execution Update

In April 2023, E25 published the detailed Feasibility Study (FS) for the construction of an integrated battery grade high purity manganese sulphate facility in Louisiana USA to produce HPMSM¹. HPMSM is a critical raw material used in the construction of various lithium-ion battery cathode precursor materials to power the electrification of the global vehicle fleet. The HPMSM produced in Louisiana will be used in the manufacture of electric vehicle Pre-Cathode Active Materials (pCAM).

The Project is supported by key offtake and funding agreements in place with General Motors LLC (GM) and Stellantis N.V. (Stellantis) which are contributing a combined US\$115M in project funding through a combination of equity, pre-payment and senior debt alongside offtake for approximately 65% of the planned HPMSM production from the first production train.

Subsequent to the release of the FS, E25 has continued to engage local engineering firms CSRS Inc (CSRS) and FIDES (a CSRS subsidiary) as owners engineers and CDI Engineering Solutions (CDI) and Universal Plant Services (UPS) as design and construction engineers to continue to refine the engineering and design of the facility prior to commencement of construction targeted for first half 2024. Key focus areas include:

- Front end Engineering and Design (FEED).
- Site Assessments and permitting.
- Inbound and outbound logistics and reagent supply.
- Project financing.

Engineering/Procurement Services

CSRS, FIDES, CDI and UPS are experienced local engineering contractors in Louisiana a track record of chemical plant design and construction in the Louisiana region. Subsequent to the publication of the FS, E25 engaged CDI (with the support of UPS) to execute front end engineering and design (FEED) for the Project. The FEED programme began in early May 2023 and is now complete.

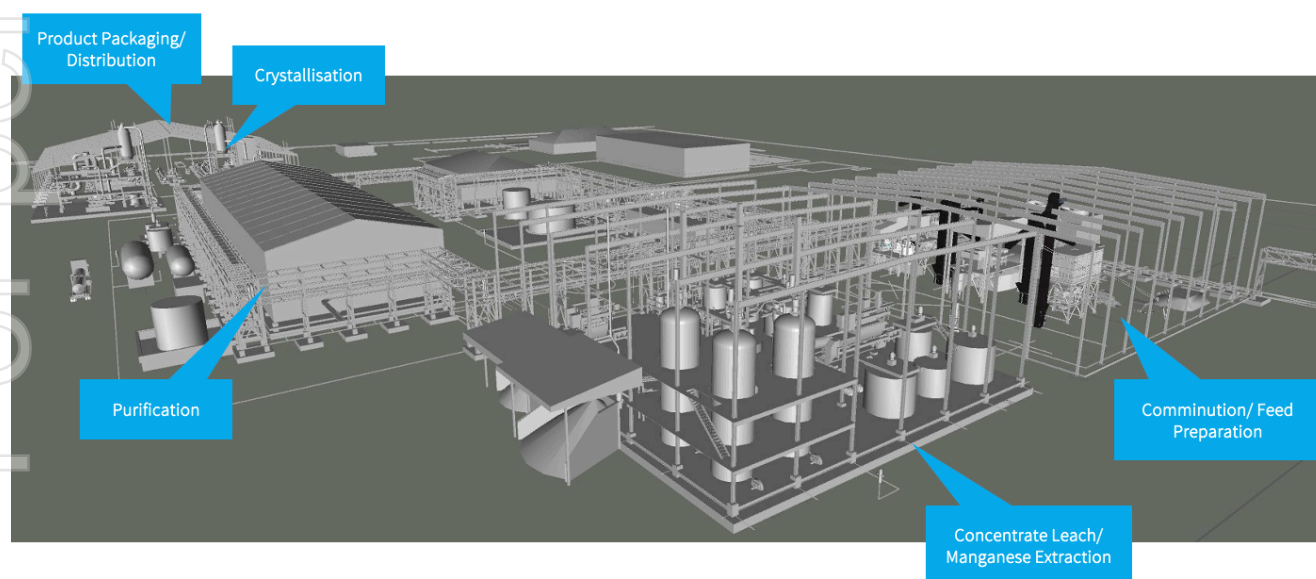


Figure 1. Plant design based on updated detailed engineering 3D model developed as part of FEED studies.

¹ Reference: Company ASX release dated 12 April 2023.

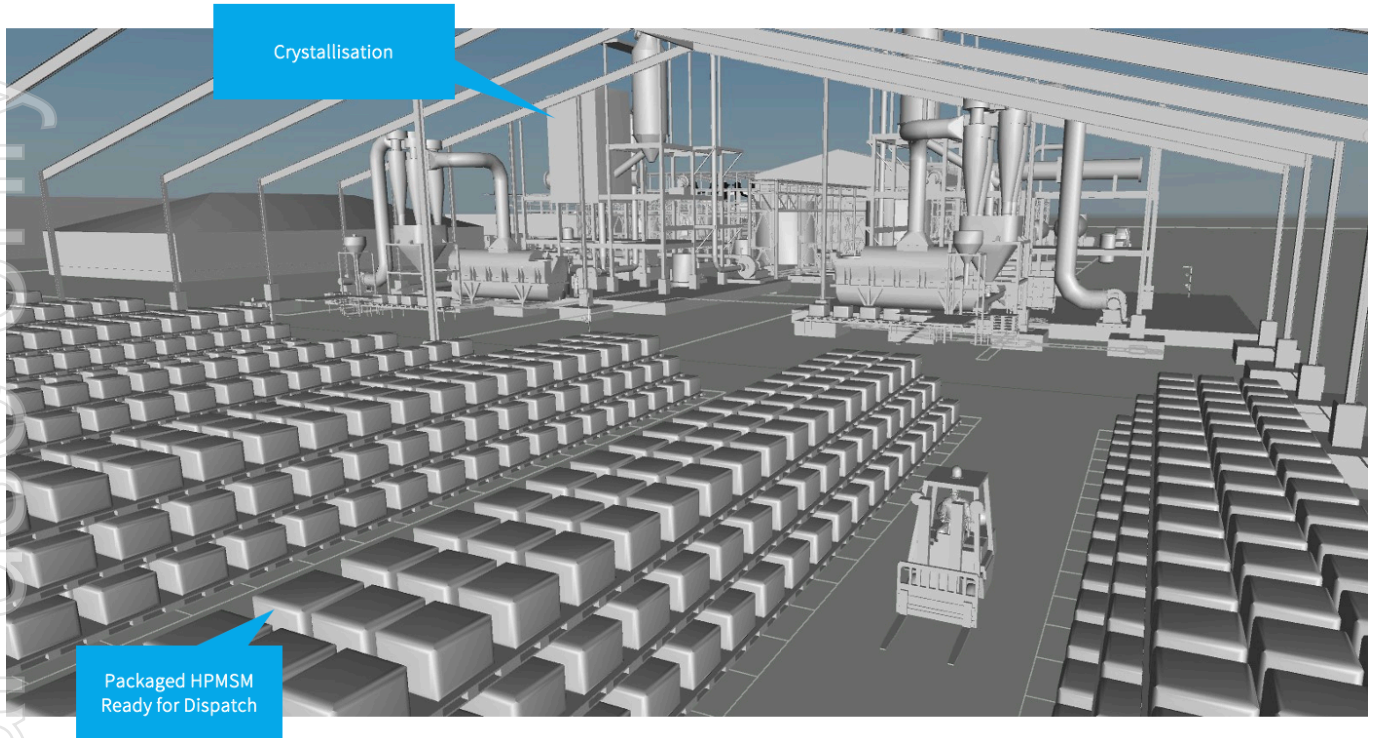


Figure 2. Render showing plant internal layout – product packaging and distribution warehouse.

FEED work programme covers engineering which is conducted to a greater level of rigor and detail compared to a Feasibility Study. It is an important engineering phase which provides additional engineering and cost estimation detail as a project transitions from conceptual design to an Engineering, Procurement and Construction (EPC) contract.

The FEED study typically precedes a final investment decision phase of a large project such as E25's planned HPMSM facility in Louisiana. The scope of the study covers a range of engineering disciplines including:

- Site layout optimisation.
- Civil and Structural design and layout.
- Process flow diagrams.
- Process and instrumentation diagrams.
- Electrical design.
- Piping and mechanical design.
- Material take-offs to inform cost estimation activities.

E25 have commissioned FIDES, CDI and UPS to undertake the next phase of detailed engineering and design which will advance the project through to FID and commencement of construction targeted for Quarter 1, calendar 2024.

Engineering Subcontractors



CSRS Inc

CSRS is an engineering and architectural services firm with six (6) offices across the Gulf South and 250 employees. The services provided include industry site selection, governmental advisory, environmental permitting, surveying, site engineering design, port advisory, hydraulics & hydrology, and stormwater solutions.

CSRS is engaged as the strategic consultant to E25 for aspects specific to the development of the project in Louisiana.

Fides Consulting

Fides Consulting is a subsidiary of CSRS providing program and project management owner support services, including conceptual design and front-end project planning for renewable fuels, clean energy, chemical and petro-chemical projects. Fides has engineers of all disciplines to manage and oversee the engineering design and technical aspects of projects.

FIDES is engaged as the **Owners Engineer** for E25.

CDI Engineering

CDI is a full-service Engineering, Procurement, and Construction Management firm serving the energy and chemical industries in the USA. CDI has nine (9) offices in the USA with a major office in Baton Rouge, LA. In business for over 70 years, providing services to a range of clients from major energy producers to pilot plant developers.

CDI is responsible for the **Engineering and Procurement** scope of the EPC Joint Venture with UPS.

Universal Plant Services

Established in 1968 UPS is a leading provider of project construction and maintenance services for small to large capital projects. These services include fabrication, welding, piping, mechanical, structural, electrical, instrumentation, and inspection services, among others. UPS contracts combined to deliver a revenue of USD\$453m in 2021.

UPS is responsible for the **Construction** scope of the EPC Joint Venture with CDI.

Supply Agreements

Negotiations have commenced with regard to utility, service and reagent suppliers, including natural gas, power and sulphuric acid. All are at an appropriate stage in alignment with the project schedule. Finalisation of these contracts will only occur once the proposed site is formally selected for the construction of the Facility, which remains dependent on finalisation of the LED incentives package and various co-dependent commercial discussions with the landowner.

Contractual arrangements with local suppliers, or nearby facilities are also being negotiated to utilise their existing infrastructure to provide key process and logistical inputs to the project including:

- Sulphuric Acid;
- Steam;
- Raw water;
- Water treatment;
- Construction materials offloading; and
- Manganese ore offloading.

The potential to source this infrastructure and related services without needing to build dedicated infrastructure is an important part of the execution strategy to minimise capital costs.

Site Selection Programmes

Cultural Survey

APA, a local archeological consultancy was engaged under contract with CSRS to undertake a Phase I cultural resources survey for the proposed Facility site in Ascension Parish, Louisiana. The Phase I survey was performed in March 2023. The purpose of this study was to determine if any prehistoric or historic properties exist within the limits of the project area, and if so, to document and assess each based on the National Register of Historic Places.

The proposed site has been historically used for agricultural purposes and no archaeological sites, historic areas, historic structures, or cultural material were found as a result of this survey. APA recommends that the project area be cleared of any cultural resource concerns.

Wetland Delineation Survey

The purpose of this study was to determine which areas should be considered jurisdictional wetlands and waters when submitted for a USACE permit for approval. Jurisdictional Wetlands and Waters require a permit from the USACE before any construction can begin in those designated areas.

All critical surveys completed with minor potential wetlands areas covering approximately 400 m² identified for follow up with USACE.



Figure 1: Cone penetration test (CPT) track mounted rig.



Figure 2: Soil test borehole drilling rig.

Geotechnical, Boundary & Topographical Surveys

Completed in April 2023, the survey data is used to validate the piling and foundation capacities for the site and to establish the topographical datum for the site. This data is further utilised for the digital 3D model for the project design basis.

The programme comprised the drilling and sampling of test boreholes and performing cone penetration tests (CPTs) to evaluate subsurface stratigraphy and groundwater conditions at the project site. Deliverables from the programme based on geotechnical and analytical laboratory tests on the recovered soil samples included:

A detailed report detailing findings including existing project site conditions, subsurface soil and groundwater conditions including design recommendations including;

- Shallow foundation systems;
- Deep foundation systems;
- Ground storage tanks;
- Rigid, flexible and aggregate-surfaced pavement systems;
- Heavy haul roads (HHRs) and aggregate-surfaced laydown areas;
- Heavy crane lifts and/or transloading sites; and
- Site and subbase preparation, excavation considerations, dewatering and groundwater control, fill and backfill placement, compaction requirements, foundation installation and quality control testing, monitoring and inspection guidelines.

Government / Local Industry Engagement

The E25 HPMSM facility will bring significant economic benefits to a local community through the creation of new direct and indirect jobs during construction and operations. Louisiana Economic Development (LED) estimates the project would result in an additional 408 new indirect jobs, for approximately 628 new jobs in the Capital Region.



As a result of this ongoing engagement, the state of Louisiana has offered Element 25 a competitive incentives package to support a final decision in Louisiana. The incentives include property tax abatements of up to 80% for up to 10 years at parish level and abatements in state property and sales taxes as well as wage subsidies and utility headworks contributions from the state. The final part of the incentives package consists of an in-kind recruitment and training package offered by Louisiana Economic Development. The incentive is provided on the understanding that a minimum number of quality jobs will be created, and a certain level of investment will be made in industrial buildings.

The company has also applied for the state's Quality Jobs and Industrial Tax Exemption Programs (ITEP)² which includes local government tax abatements and state-based incentives. The application has now passed the local parish's finance committee, school board and council meetings unanimously and has been recommended for approval by the Louisiana Government and ultimately the Governor. The Agreement is expected to be issued for execution in coming weeks.

² <https://www.opportunitylouisiana.gov/led-news/news-releases/news/2023/04/12/element-25-proposes-ev-battery-materials-facility-in-ascension-parish>

Project Financing

The financing for the proposed Louisiana Facility is cornerstoned by binding commitments for US\$115M from offtake partners General Motors and Stellantis³. The strategy to complete the funding stack includes a number of parallel processes including the investigation of funding under the Department of Energy ATVM loan programme, conventional senior debt alongside the GM senior loan facility of US\$85M, strategic investment from a third offtake partner as well as project level equity partners. The Company is progressing these various discussions in parallel and will provide a more detailed update as soon as further details are available. Notably, Stellantis has completed the first tranche investment of US\$15M in equity and is now the Company's largest shareholder with a 10.2% shareholding⁴.

Pilot-Scale Metallurgical Test Programme

The final pilot scale process verification test programme for the E25 flowsheet was completed at Veolia HPD's North America facility. The programme utilised the purified leach solution (PLS) previously produced and processed it through the Veolia pilot scale crystalliser facility using optimised conditions established in previous test programme(s).

The programme was entirely successful, producing HPMSM well within the required specifications for battery applications and well inside the E25 Standard Specification which is the quality stipulated in the agreements with both Stellantis and GM.

The results have exceeded expectations and confirmed the E25 process as being able to deliver into existing requirements but also to offer opportunities to supply higher purity product options into the future as battery technology develops and higher purities are required.

The programme also yielded significant quantities of HPMSM which has been packaged and stored in suitable conditions before being dispatched to our existing offtake partners as well as potential future offtake and funding partners to assist in ongoing discussions.



Figure 3: E25 HPMSM Sample.

³ Refer ASX releases dated 9 January 2023 and 26 June 2023.

⁴ Reference: Company ASX release dated 11 July 2023.

About Element 25

Element 25 is an ASX listed company (**ASX: E25**) operating the world class 100%-owned Butcherbird Manganese Project in Western Australia (**Butcherbird**), shipping high quality manganese oxide concentrate to partners in traditional steel related industries.

E25 has developed an innovative, proprietary, low-cost flowsheet to convert Butcherbird manganese concentrate into battery grade high purity manganese sulphate monohydrate (**HPMSM**) to supply the global Electric Vehicle (**EV**) industry. Manganese is an important battery cathode material and is a critical mineral in Australia, Europe and the USA⁵.

In addition to an industry leading ESG footprint, the E25 process provides a vertically integrated, fully traceable single source of HPMSM for global markets. E25 is developing an HPMSM processing facility in Louisiana USA to supply the growing US based EV battery industry, with offtake and financing support from General Motors and Stellantis.

E25 aims to become an industry leading, world class, low-carbon battery materials manufacturer underpinned by the large, long life manganese resource at Butcherbird.

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.

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⁵ Reference: USGS, European Commission, Australian Department of Industry, Science and Resources