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# PROJECT MONTHLY UPDATE

## LMG'S DEMONSTRATION PLANT

### December 2023

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#### Highlights:

- \* The Demonstration Plant continues to progress with no health, safety, or environmental incidents to date.
- \* Magnesium Oxide (MgO) production strategy is on track with construction labour expanded to 50+ local trade contractors engaged onsite.
- \* Major fabrication, refractory and erection of structural steel related to the MgO strategy completed with installation of mechanical equipment well advanced.
- \* Fly Ash Beneficiation area construction completed, ready for commissioning.

#### 1. Stage 1 Demonstration Plant Progress Update

##### 1.1 Engineering & Procurement

As per the demobilisation plan, the core EPCM engineering team, consisting of 4 – 6 personnel, continue providing support to the EPCM construction team and continue the completion of vendor closeout and commissioning handover documentation to the Owner's Teams.

The procurement buyer is supporting the construction and commissioning phases by procurement of any necessary site consumables and local hire of mobile equipment.

##### 1.2 Construction

###### **Magnesium Oxide (MgO) Strategy**

As outlined in the monthly updates, the project is currently focused on fast-tracking the construction of the plant areas required to produce one-ton bulk bags of MgO, an intermediate product for customer sales, prior to the production of magnesium metal. Latrobe Magnesium (LMG) has a Memorandum of Understanding (MoU) with Rainstorm Dust Control Pty Ltd for the sale of MgO in the initial phase, as well as any excess MgO produced.

The EPCM engineering team have made the necessary modifications to existing engineering deliverables to install piping and a bagging plant to produce one tonne bulk bags of MgO that can then be sold to customers. The MgO Bagging Plant fabrication was complete in December as scheduled, third-party inspected, factory-tested, and currently in transit to Demonstration Plant Project Site for installation.



**Figure: MgO Bagging Plant Shipped**

The commissioning methodology by sub system will allow the EPCM construction team to transition to other areas of the plant as sub systems are handed over to LMG Operations ensuring a seamless transition from priority areas to the remainder of the project.

The construction and commissioning of the briquetting system, reduction furnace area, the furnace automation and vacuum system will then be the second phase of the plant to be fully commissioned. This strategy allows operations personnel to familiarise themselves with the flowsheet whilst at the same time generating revenue.

This strategy will demonstrate LMG’s patented, world-first hydromet process can be operated successfully and prove to all stakeholders the true value of LMG’s intellectual property.

### Site

The site team continues with a daily workforce of 50+ local trades, from our three major local contractors, Mechanical Maintenance Services (MMS), Operations and Maintenance (O&M) and GEM Industrial Services who are responsible for Structural & Mechanical installation, Electrical & Instrumentation installation, and Piping fabrication & installation, respectively.



*Figure: Site Construction Team – December 2023*

## Civil

All major civil and concrete works have been completed.

## Structural, Mechanical and Piping

The Spray Roaster continues to be the projects critical path. The erection has proven to be intricate with the SMP contractor teams successfully erecting preassembled modules lifted into place as larger segments to expedite installation time.

The EPCM construction team have achieved the following major milestones:

- Complete fabrication and assembly of the Spray Roaster's reactor vessel
- Complete fabrication of the Spray Roaster's oxide bin
- Installation of the Spray Roaster's reactor vessel and oxide bin, including ancillary components
- Complete erection and installation of all major Spray Roaster structural steel
- Complete internal refractory lining of the reactor vessel



**Figure:** Spray Roaster's reactor vessel & oxide bin installed along with structural steelwork erection complete.

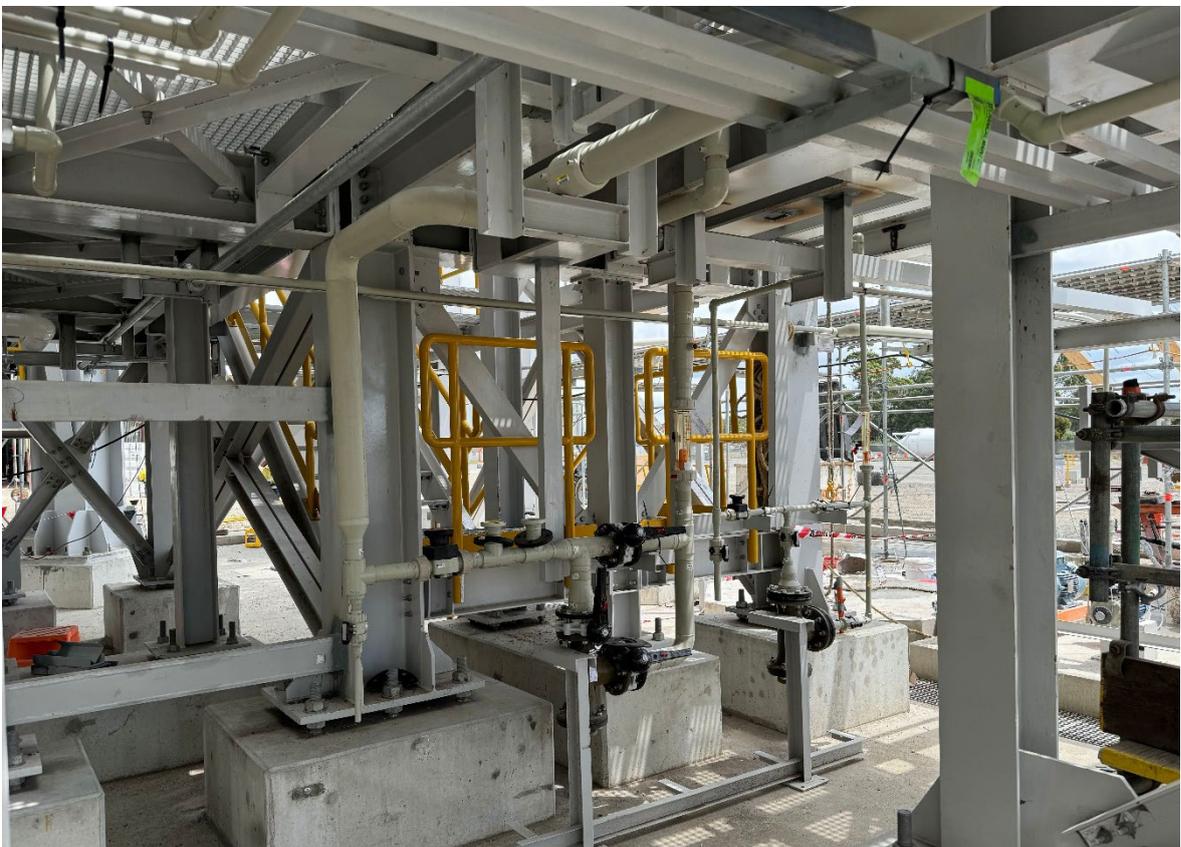
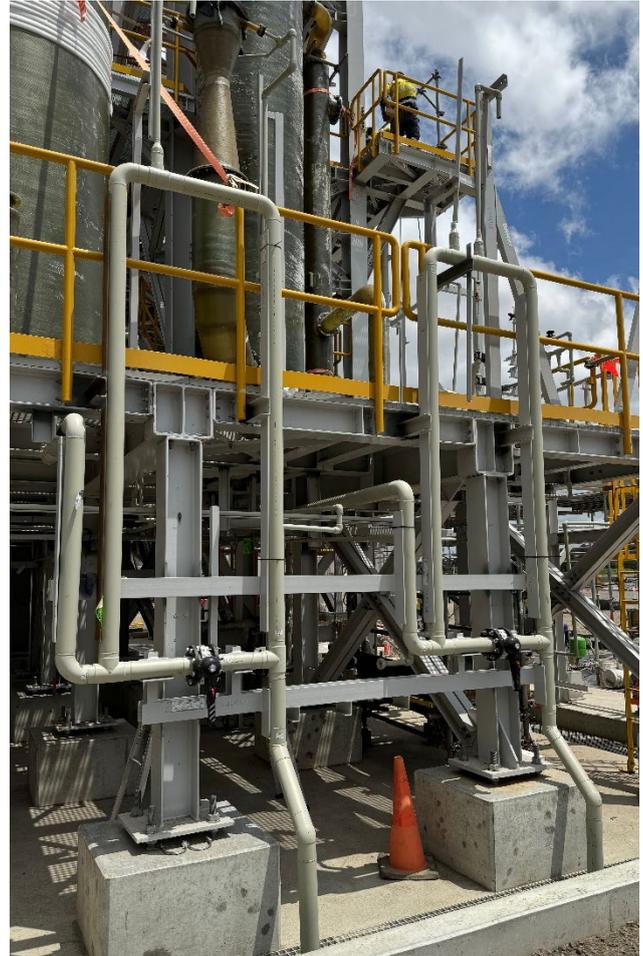
Steuler, a specialised refractory contractor, has completed the internal refractory lining installation required for the reactor vessel in over 4 weeks over December.

The work has included installation of insulating refractory castable for the lower cone, fireclay brick & mortar for the shell and a mouldable refractory mix for the three (3) off burner chambers.



**Figure:** Spray Roaster reactor vessel refractory lining completed.

The completion of the refractory has allowed the SMP and E&I contractors to continue to progress with the installation of the mechanical equipment, including tanks and burners, absorption towers, stacks, pumps, fans, lowers, instrumentation, pipe & cable supports.



*Figure: Piping, valves, and instrumentation installation progressing*



*Figure: Mechanical and piping installation progressing*

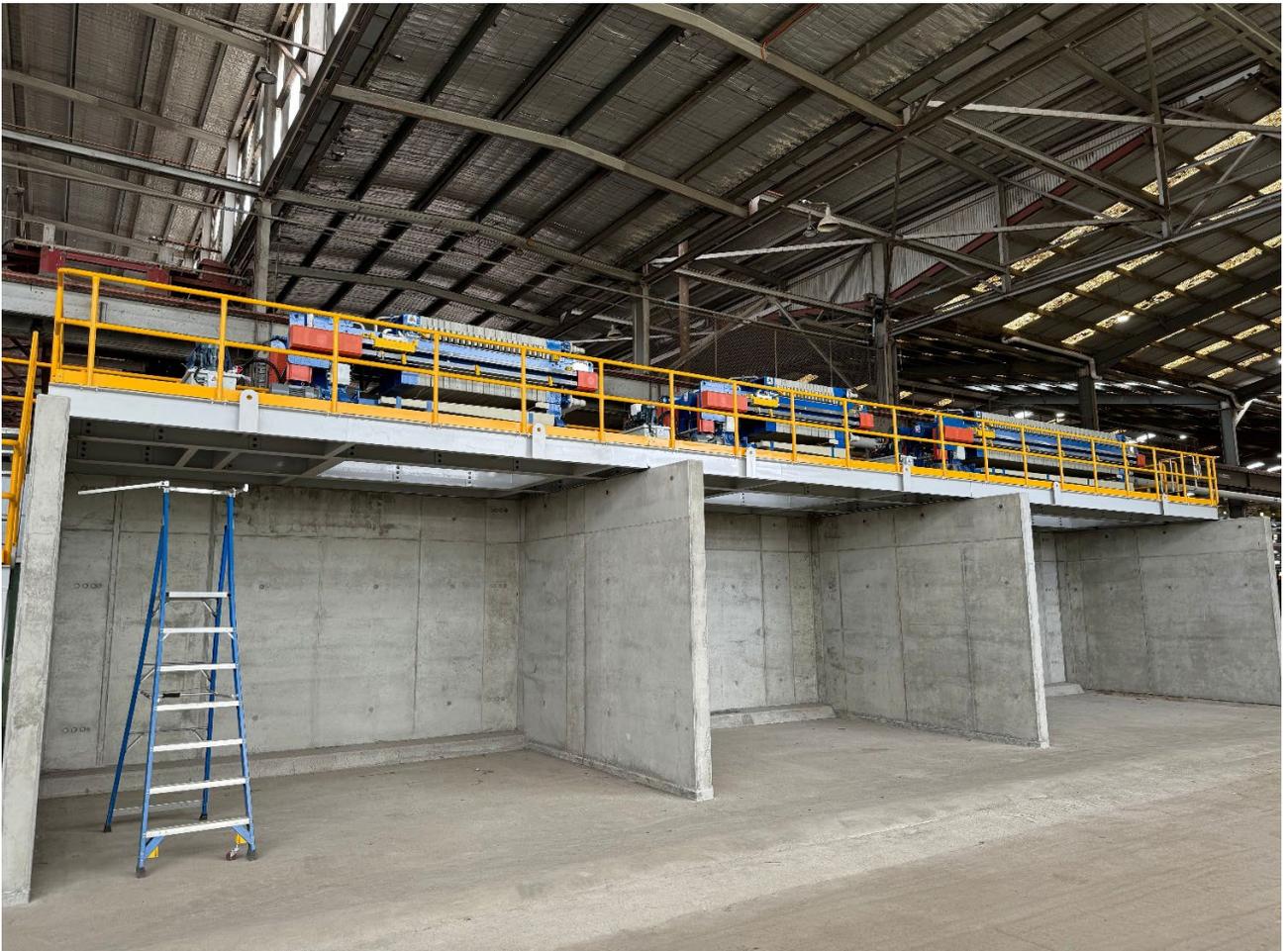
The SMP contractor teams have completed the erection of both the Ferrosilicon and Magnesite Hopper and Bag Breaker units in December. Given its criticality to the production of MgO, the Magnesite Hopper Bag Breaker has progressed significantly with most of the mechanical equipment, pneumatic piping, electrical and instrumentation equipment installed, ready for commissioning.



**Figure:** Magnesite Hopper & Bag Breaker unit E&I and Mechanical equipment installation completed.

The work continues to progress in the hydromet areas with all the major mechanical equipment installed, including the Thickeners and Filter area presses, tanks, pumps, agitators, and compressors, the area where LMG’s saleable by-products will be processed and stored.

Pipe welding, spooling, and installation for the plants PVDF, HDPE & PVC and carbon steel piping and valves is progressing steadily as construction completion nears for each area and transfers to commissioning sub-systems.



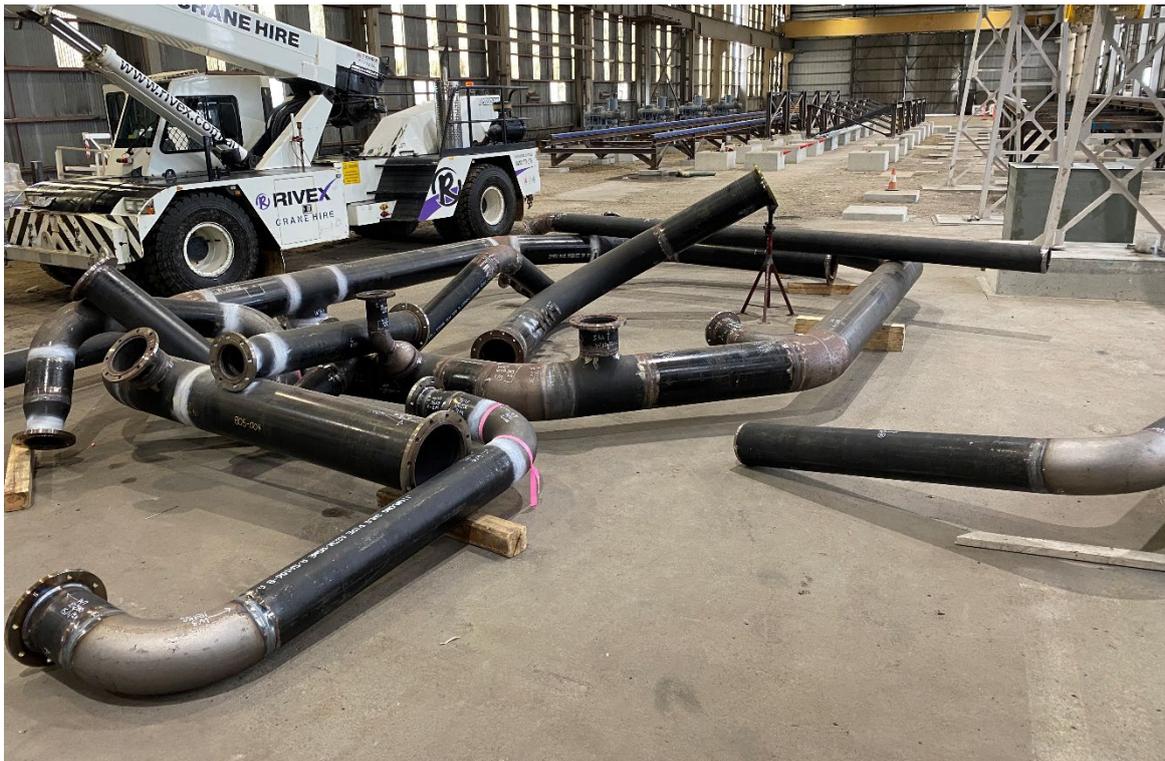
**Figure:** Filter Presses installed over Filter bunkers and all major mechanical equipment



**Figure: Filter area FRP tanks and air compressors installed**



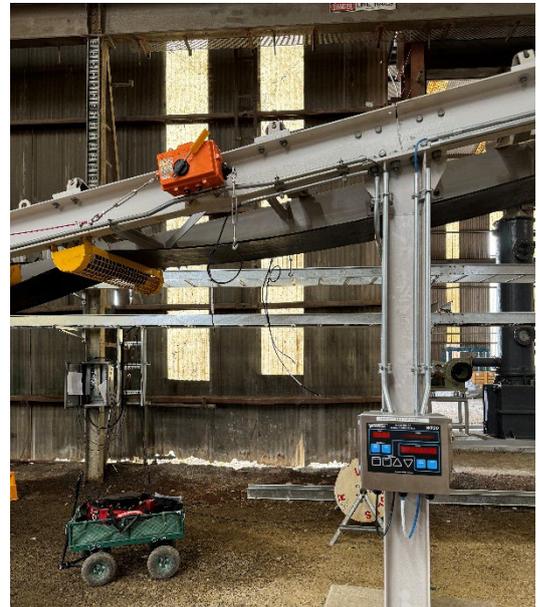
**Figure:** Thickeners with internal rakes installed (top) and carbon steel spoils welded ready for install (bottom)





**Figure: PVC & PVDF piping installation in progress**

The Fly Ash Beneficiation area is 100% construction complete with minor punch list items outstanding. This area marks the first area to achieve this construction milestone and will be ready for handover to commissioning.

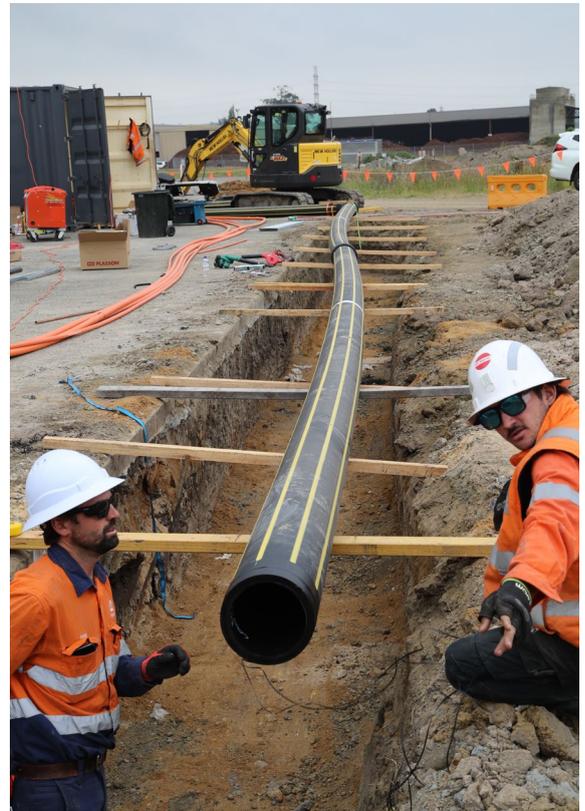


**Figure: Fly Ash Beneficiation construction complete**

The Coregas team have completed the installation of the equipment required for the supply of industrial gases for the plant, which include the Oxygen and Carbon Dioxide tanks, along with Argon cylinder man-pack facility, ready for commissioning.

In addition, the Origin team have successfully completed the LPG storage facility, ready for supply of LPG, including the installation of the 120,000 litre LPG bullet, designated fill point and underground portion of the LPG pipeline.

The origin team have continued to progress with the above ground piping supports along the sheds to the Spray Roaster and Reduction Furnace, with a target construction completion by early February.



**Figure:** Origin LPG pipeline complete

### Electrical and Instrumentation

As outlined in the previous monthly updates, the electrical and instrumentation (EI) cabling is complete for all three main switch rooms and the main switchboard. The EI contractor team continues to progress the construction and installation of local junction boxes, local control stations, instrumentation, and cable terminations locally.



**Figure:** Installation of local control stations, electrical cabinets and instrumentation and cabling.

The removal and installation of the new Main Switchboard (MSB) is complete with great assistance from contractor Pro-Built, responsible for removing and installing the switchboards and AusNet, who performed necessary maintenance on the grid prior to reestablish power to Site.



**Figure: New Main Switchboard (MSB) installed and powered.**

To further optimise CAPEX budgets and avoid any unnecessary schedule delays associated with the refurbishment of the existing redundant buildings adjacent to the Fabrication Sheds, the strategic decision was made to purchase a new standalone, ready-to-install modular Control Room, adhering to Australian standards, for LMG Operations.

The Control Room fabrication was complete and delivered to Site late in December 2023. The EI contractors' team will begin cable pulls and installation of equipment necessary for the control systems.

Should you have any queries in relation to this announcement please do not hesitate to contact the CEO on his mobile 0421 234 688.



**David Paterson**  
Chief Executive Officer

19 January 2024

## About Latrobe Magnesium

Latrobe Magnesium is developing a magnesium production plant in Victoria's Latrobe Valley using its world first patented extraction process. LMG intends to extract and sell magnesium metal and cementitious material from industrial fly ash, which is currently a waste resource from Yallourn brown coal power generation.

LMG has completed a feasibility study validating its combined hydrometallurgical / thermal reduction process that extracts the metal. Early construction has commenced on its Stage 1, initial 1,000 tonne per annum magnesium plant with commissioning targeted for MgO production as at 31 March 2024 and the full magnesium production to commence end of Q2 2024.

A commercial plant will then be developed, with a capacity of +10,000 tonne per annum magnesium, shortly thereafter with completion targeted for December 2025. Further plant capacity expansion will be determined once Geotech works have been completed on the existing Yallourn landfill. The plant will be in the heart of Victoria's coal power generation precinct, providing immediate access to feedstock, infrastructure, and labour.

LMG plans to sell the refined magnesium under long-term contracts to USA customers. Currently, Australia imports 100% of the 8,000 tonnes annually consumed.

Magnesium has the best strength-to-weight ratio of all common structural metals and is increasingly used in the manufacture of car parts, laptop computers, mobile phones, and power tools.

The LMG project is at the forefront of environmental benefit – by recycling power plant waste, avoiding landfill and is a low CO<sub>2</sub> emitter. LMG adopts the principles of an industrial ecology system.