
PROJECT MONTHLY UPDATE

LMG'S DEMONSTRATION PLANT

26th March 2024

Highlights:

- * **The Stage 1 Demonstration Plant Project continues to progress with no reportable Health, Safety, or Environmental (HSE) incidents to date.**
- * **Magnesium Oxide (MgO) production strategy is on track, allowing LMG to initially prove its patented process and to generate early revenue, with construction labour maintained at 70+ local trade workers engaged onsite.**
- * **Ash Handling, Process & Raw Water, Potable Water and Water Treatment Plant are complete and operational.**
- * **Overall construction progress is 95% complete. Construction team racing to the finish line!**
- * **Commissioning of all other areas underway in parallel to construction to ensure production can commence in April as planned.**
- * **Operations readiness plan being actioned.**

1. Stage 1 Demonstration Plant Progress Update

1.1 Engineering & Procurement

Progress is ongoing for the vendor closeout and commissioning handover documentation to LMG. LMG is implementing a document library system for operations personnel to quickly identify and access various documentation to ensure rapid familiarity with equipment documentation such as manuals, drawings, parts lists etc.

1.2 Construction

Magnesium Oxide Strategy

The site team have continued to progress fast-tracking the construction of the plant areas required to produce bulk bags of MgO, an intermediate product, for customer sales, prior to the production of magnesium metal. The construction and commissioning of the remaining plant areas (briquetting system, reduction furnace area, the furnace automation and vacuum system) will be the second phase of the plant to be fully commissioned.

This strategy will not only 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

The bagging plant, that was added to the flowsheet to enable this strategy, has been completed and handed over to commissioning for testing.



Figure: MgO Bagging Plant completed

Structural, Mechanical and Piping

The Spray Roaster has continued to be amongst one of the areas on the project's critical path.

Mechanical and piping is largely complete with the focus now on completing cabling and terminating to all instrumentation equipment.



Figure: Spray Roaster mechanical and piping complete

The ash handling area is complete, commissioned and now under the control of the commissioning team, awaiting the completion of the remainder of the plant.



Figure: Ash Handling area complete

The acid leach area is now being commissioned with water runs and tank filling underway. The acid area scrubber is complete and under commissioning with flow tests being completed.



Figure: Acid Leach area complete



Figure: Acid Scrubber area under commissioning

The filtration area is complete and undergoing pre-commissioning. The filter programmable logic controllers (PLC's) arrived from the vendor without the full code to operate the filters. The code is being rewritten by the commissioning team to allow testing of the filter sequence and ensure it is operational. Once complete this area will move into commissioning control this week.



Figure: Filtration area complete with all piping, hydraulics and electrics installed



Figure: Filtration piping, hydraulics and electrics installed



Figure: Magnesium holding tank complete

The air systems are complete and being commissioned. The startup steam boiler will be commissioned with vendor support in the first week in April once LPG is available. The LPG tank is complete and ready for filling with LPG and commissioning once the Dangerous Goods permit arrives from WorkSafe Victoria, which is expected this week.



Figure: Process Air, Instrument Air undergoing commissioning

The water areas, Process Water, Raw Water, Potable Water and Water Treatment have finished commissioning and are now operational. The water systems are now being used to provide water for water filling of tanks and water runs through pumps and piping to confirm system integrity.



Figure: Water systems operational

Remaining construction activities this week are focusing on completing all instrumentation termination

in the Spray Roaster area, lagging on equipment and tanks and remainder of piping before handover of all areas to commissioning by the end of the week.

Construction resources will transfer to the commissioning team as they wind up to full activities. Construction will remain, undertaking punch listing closeout activities and starting to plan for moving to the next phase of the project, completion of Mg metal. Following first MgO next month, future updates will be provided on the plan for first Mg metal by mid-year.

Commissioning

The commissioning team has dramatically ramped up with up to 20 personnel being assigned to the team to complete all commissioning checks in preparation for first ash.

The Spray Roaster is moving through Stage 1 commissioning in parallel with remaining construction this week. Interactions and simultaneous operations between the two teams are being managed daily.

The hydromet areas are progressively moving through Stage 1 commissioning and Stage 2 with preparations for water runs nearing completion.

Ash handling, the water areas and process and instrument air are complete and operational.

The commissioning team are working under strict procedures to ensure that construction personnel who need to enter an area under commissioning control are aware of the hazards of live equipment and pressurised piping etc.

There is a significant amount of commissioning documentation required and the commissioning team are working diligently to complete all documentation as commissioning is progressed. The commissioning team are putting in a huge effort to complete everything in time for first MgO.

Operations

Operations is gradually ramping up to support production of MgO next month. Numerous conversations have been had with recruitment firms, government supported labour organisations, and contractors about options for supplying labour. The recent shutdown of the white paper line at the Opal paper mill in Maryvale, and the subsequent worker redundancy, has presented opportunities to recruit personnel with skills in similar processes and equipment and would be a logical fit for the process plant.

The commissioning team will support early operations and first MgO whilst the operational workforce comes onstream.

Recruitment has begun for the following management roles:

- General Manager
- Process Engineer
- Maintenance Manager

The existing construction Supply Officer and HSE Officer roles will transition over to operations whilst continuing to provide construction and commissioning support.

Additional process engineering expertise will be available to support commissioning in April. Training consultants are being implemented to develop procedures and processes for operations personnel.

Operational equipment is being purchased such as radios, PPE, tooling, lubricants, hoses etc.

Systems are being put in place such as additional payroll functionality, an inventory module as part of our ERP system, safety management systems, maintenance system, a process historian to optimise the process and cyber security for the OT assets.

Arrangements for vehicle leasing are underway for operations equipment such as forklift, Franna crane, skid steer loader, elevated work platform etc.

First fills are nearly complete with initial reagents on site for Magnesite, Flocculant and chemicals for cooling water treatment. Hydrochloric acid, sodium hydroxide and industrial gases will be delivered in April to support commissioning.

Laboratory service provisions to support the process plant sampling and testing requirements, for day-to-day process optimisation, are underway with laboratory providers in the region.

The Dangerous Goods permit is planned to be available this week to allow filling of the LPG tank and commissioning of that system.

Schedule

The lowest February rainfall in history and lower than average rainfall in March has meant greater workdays outdoors, helping to keep the schedule on track. There is a constant focus on addressing the typical challenges that occur during commissioning that can delay plant startup.

Whilst the focus continues on completing construction, labour in the commissioning team has been ramped up to meet the typical challenges of commissioning. Commissioning expertise is harder to come by and partners such as Rockwell and Tenova have added additional personnel to resolve issues and speed up commissioning progress.

Construction is on track for end of March completion with **First MgO planned for 16th April**. The commissioning team is working hard to make this happen as soon as possible with the operations team ramping up to meet this challenge.

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

26 March 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. The demonstration plant will produce MgO after March 2024 with the full plant being commissioned by 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 Q1 2026. 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 its 10,000 tpa of refined magnesium production 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 CO₂ emitter. LMG adopts the principles of an industrial ecology system.