
PROJECT MONTHLY UPDATE

LMG'S DEMONSTRATION PLANT

30 September 2023

Highlights:

- * The Demonstration Plant continues to progress with no health, safety, or environmental incidents to date.
- * Magnesium Oxide strategy being implemented to commence production earlier, with a Memorandum of Understanding in place for product sales.
- * Research and Development Rebate has been estimated to be \$12.6 M for the year ending 30 June 2023.
- * Structural, Mechanical and Piping labour hire contract awarded to a local company and works underway.
- * Supply agreements signed with Origin (LPG) and Coregas (industrial gases)

1. Stage 1 Demonstration Plant Progress Update

Engineering

The engineering and design phase is in its final stage, with efforts directed towards supporting the construction team, closeout of remaining suppliers and equipment vendor documentation. The project office has been closed with the remaining engineering team demobilised back to the EPCM contractors head office. The preparation of handover and commissioning documentation from the EPCM contractor is ongoing.

Process engineering is finalising the control philosophy to complete the control engineering. Mechanical engineering is finalising the remaining suppliers during vendor engineering with documentation reviews and close-out. Civil and Structural engineering work is supporting the construction team with miscellaneous minor civil works. Electrical and Instrumentation engineering is supporting vendors and miscellaneous non-process infrastructure (NPI) such as the control room and control system engineering.

The focus going forward for engineering will be field engineering support with one of the mechanical engineers already transitioned to site and supporting the construction team.

Procurement

The procurement team are focused on the purchase of miscellaneous items and supporting the construction team with procurement of site consumables.

Construction

Magnesium Oxide Strategy

Due to the project timing, as a result of the challenges outlined in last month's update, and continuing ongoing challenges with labour resources, the project team is adjusting the strategy to focus on the

delivery of the hydromet areas needed to produce Magnesium Oxide (MgO) as an initial product. MgO is the intermediate product produced before reduction into magnesium metal. As well as being the feedstock for magnesium reduction, MgO is also a saleable product and provides LMG an opportunity to prove its patented process and generate revenue earlier whilst other areas of the project are being commissioned.

The project will focus on the delivery of the areas to produce MgO as soon as possible, with a stretch target of end of the year, which are the ash handling, leaching, spray roasting and magnesite areas. The project team are making slight modifications to the flowsheet to install piping changes and installation of a bagging plant to produce one tonne bulka bags of MgO that can then be sold to customers. A Memorandum of Understanding (MoU) has been signed with a customer to purchase excess MgO the plant generates, including early MgO – refer to below for further details.

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

The advantage of this strategy is that it allows LMG to prove its patented hydromet process sooner. LMG's primary intellectual property pertains to the extraction of magnesium metal from brown coal ash, as well as the subsequent precipitation of marketable, saleable byproducts, constituting the initial phases of our operational process leading to the production MgO. This strategy will demonstrate LMG's unique, world-first hydromet process can be operated successfully and prove to shareholders, investors, community and the government, and all stakeholders the true value of LMG's intellectual property.

Civil

The main civil and concrete works are coming to completion with the filtration area now complete and the furnace automation area to be completed next month. The furnace automation area is underway with blinding installation and will follow up with rebar, formwork and pedestal formation.



Figure: Foundations for Furnace Automation

The main civil works undertaken during September were related to the filtration area slab and bunker walls which was the largest concrete pour since the spray roaster. The filtration area involves the use of concrete walls to form bunkers for the filter byproducts and to support the filtration equipment.



Figure: Filtration Area Base Concrete Pour (left) and Filtration Area Wall Pour (right)



Figure: Completed Filtration Area

Remaining civil work involves small miscellaneous concrete foundations and pedestals.

Structural, Mechanical and Piping

The SMP labour hire contract was awarded to Mechanical Maintenance Solutions (MMS), a local company in the Latrobe Valley. Up to 40 workers have mobilised to site at the time of writing and additional workers will be mobilised as the SMP works ramp up for the remaining of the year.

The SMP works has started in earnest with the continued installation of cable track and pipe racks as well as focusing on the completion of the spray roaster structural steel in time to house the roaster vessel, currently being reassembled at Stable Engineering.

Additionally, agitators have been installed in the hydromet tanks and scaffolding being erected to commence installation of piping, cable and supports through the Hydromet areas.



Figure: Main pipe racks (left) and Furnace Area pipe racks (right)



Figure: Erection of Agitators in Hydromet Tanks (left) and Scaffolding for Pipe Installation (right)



Figure: Erection of Spray Roaster Structural Steelwork

Electrical & Instrumentation

The electrical and instrumentation (EI) work, managed by local contractor O&M, is well underway and is making excellent progress with the recent completion of all the MCC's installed and terminated in each of the switchrooms. The work is focused on the main cable pulls from the main switchboard to the area switchrooms followed by the termination of the cables to the switchboards. The backbone of the electrical network will be installed first followed by cabling to the field areas to provide power to equipment and instrumentation.

The project is awaiting confirmation from AusNet for the timing of shutting down and isolating the main transformer to allow the main switchboard to be replaced. It is expected that this process will be undertaken next month.



Figure: Cable Installation in Cable Trays

Spray Roaster Assembly

The spray roaster vessel assembly continues at Stable Engineering with schedule remaining on track to support installation in October. Plans to transport the vessel to site, once complete, are in place and awaiting final fabrication.



Figure: Workshop Fabrication of the Spray Roaster Vessel

Schedule

The schedule remains on track as per last month's update however continual challenges exist and are being managed as they occur to ensure the schedule continues to be met. Labour availability is proving to be an ongoing challenge to achieving the schedule and is being monitored on a daily basis. The refocus towards interim MgO production will benefit the schedule by ensuring focus is placed on the spray roaster installation which is the schedule critical path. Despite the switch to initial MgO production, **first magnesium production in March 2024 remains unchanged.**

Any further changes to this timetable will be included in future monthly updates.

Commissioning

The commissioning team are adjusting the commissioning plan to refocus on initial MgO production. Additionally, the commissioning team are attending Factory Acceptance Tests (FAT) for the furnace automation to ensure deep knowledge of the automation systems and the commissioning procedures required.

Tenova are beginning to mobilise commissioning personnel to assist with the commissioning of the spray roaster starting with the important task of installing the refractory lining for the spray roaster.

2. Operations

With the switch to focus on MgO production initially, the project team is initiating a recruitment campaign to bring the initial operations work force on board by the end of the year.

LMG are reaching out to recruitment firms, labour providers and government assistance agencies such as the Latrobe Valley Authority to make them aware of personnel requirements.

The operations team will be looking to recruit:

- Process Operators
- Control Room Operators
- Shift Supervisors
- Maintenance Technicians
- Electricians

As well as management personnel such as Maintenance Engineering, Health & Safety, Process Engineering and Supply. LMG is looking forward to engaging with the community to bring jobs to the region in the face of the loss of industry and jobs over the coming years.

Coregas

Coregas, part of the Wesfarmers Group of companies, were the successful tenderer to supply LMG's requirements for Oxygen, Argon, and Carbon Dioxide. This product shall be supplied both in bulk (Oxygen and Carbon Dioxide) and in cylinder 'man-packs' (Argon). The asset management services for each of these products will be fully digitised, with the re-supply of product fully managed by Coregas on a 24/7 basis. Coregas are currently working diligently with the EPCM contractor to complete the installation of the respective storage facilities.

Origin

LMG has partnered with Origin LPG for the supply of LPG to the Demonstration Plant. Origin LPG will commence work with the design and install of the new storage facility scheduled for completion Q4 2023 and will exclusively manage and supply all LMG's LPG requirements throughout the project.

Memorandum of Understanding (MoU) – Magnesium Oxide

To support early production of MgO, the company has executed a Memorandum of Understanding (MoU) with Western Australia headquartered Rainstorm Dust Control Pty Ltd (Rainstorm) who utilise MgO in their operations on both the eastern and western seaboards. This will also apply to the extent that LMG cannot consume all the MgO that it produces.

Under this agreement, LMG have offered preferential access to Rainstorm for the purchase of all MgO product at a mutually beneficial price as and when such material is available.

3. R&D Rebate

The Company's Research and Development rebate has been calculated as being \$12.6M for the year ended 30 June 2023. The Company has its activities registered with AusIndustry and has lodged its 2023 income tax return with the ATO. The rebate will be used to reduce its funding from RnD Funding Pty Ltd, which as at the end of 30 June 2023 was some \$19.9 M.

4. Summary

There will be updates on LMG's Stage 2 and Stage 3 projects in the Company's Quarterly Report due later in this month.

Overall, the project remains on schedule despite ongoing pressure on labour availability. The challenges being faced by the project are being reflected around Australia and the project team are working diligently to respond to each challenge and adjust the strategy as needed.

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

9 October 2023

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 to commence end of Q1 2024.

A commercial plant will then be developed, with a capacity of +10,000 tonne per annum magnesium, shortly thereafter. Further plant capacity expansion will be determined once Geotech works have been completed on the existing Yallourn landfill due for completion by the end of 2023. 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 and Japanese 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.