
Latrobe Magnesium's Progress on their Fast Cycle Reduction Furnace

29 March 2018, Sydney Australia: Latrobe Magnesium Limited (ASX: LMG) wishes to advise the market on the progress made in relation to the commissioning of its new Fast Cycle Reduction Furnace ("FCR"). LMG and its engineers have designed a new vertical retort and furnace system to improve the capital and operating cost of the magnesium reduction step.

A prototype retort, furnace and all necessary ancillary equipment has been designed, built and installed at a CSIRO facility in Melbourne. Commissioning of the FCR commenced in December last year. Early problems included a leak in the vacuum system and some damage (cracking) to the internal silicon carbide lining of the retort. This was repaired in January and February.

During March, cold and hot commissioning of the FCR has been progressing. A number of equipment improvements have been identified and implemented. At this time, hot commissioning is close to being completed on all elements of the FCR except for the retort.

The retort design and its construction material still needs to be finalised. At present, the retort life is unsatisfactory and a review is being conducted of the design and of the materials of construction. The current intention is to use the existing retort for the next few steps in the commissioning program, while preparing an improved retort for the final test work. This test work is estimated to take between two to three months.

A large sample of dolomite and RWE Power's fly ash has been prepared and are ready to be processed through the FCR to produce magnesium and supplementary cementitious material.

It is believed that this FCR will be superior to existing horizontal retorts in the following areas:

- The retort charge will be larger
- The reduction time will be greatly reduced
- The energy usage will be less due to more efficient heat transfer within the retort
- The use of better quality material in the retort should greatly increase the retorts life
- The FCR offers a competitive advantage over other vertical retort designs. These benefits should produce reduced capital and operating costs for the project.



David Paterson
Chief Executive Officer

About Latrobe Magnesium

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

LMG is currently finalising a bankable-feasibility study to validate its combined hydromet / thermal reduction process that extracts the metal. Construction is estimated to start on its initial 3,000 tonne per annum magnesium plant in the third quarter of this year with production commencing 12 months later. The plant will then be expanded to 40,000 tonne per annum magnesium 18 months later. 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 Australian, Japanese and United States 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