

## QUARTERLY ACTIVITIES REPORT

30 June 2016

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# LATROBE MAGNESIUM PROJECT

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### **1. Feasibility Study**

In May, 2016 Latrobe Magnesium Limited (ASX:LMG) announced that it had successfully completed the second stage of its bankable feasibility study (BFS) of a plant to produce 5,000 tonnes of magnesium a year from the brown coal fly ash at the Latrobe Valley's Hazelwood power station.

The second stage of the BFS estimated the capital cost of the initial 5,000 tonne per annum plant to be in the range between \$46 million and \$51 million. A number of areas have been identified that could produce capital cost saving and these will be investigated in the final stage of the BFS.

The final stage of the feasibility study is expected to be completed by the end of October.

LMG's financial modelling indicated that the Project is economically viable and consistent with its previous prefeasibility and adjustment study projections. A summary of the operating revenues and costs together with the final capital costs will be released upon completion of the final stage of the BFS.

### **2. Offtake Agreements**

In March 2016, LMG signed a Memorandum of Understanding with a Japan-based company committing to purchase up to 4,000 tonnes of magnesium per annum from the LMG planned production facility in Morwell Victoria. The offtake company is Advanced Material Corporation of Japan (AMCJ), the largest titanium and magnesium trading house in Tokyo.

Japan currently uses 40,000 tonnes of magnesium per annum and this is projected to increase with greater use of magnesium by the motor vehicle industry. Currently most of this magnesium is imported from China. The Japanese Magnesium Association has a stated objective to diversify their magnesium supply chain.

In June 2016, LMG signed a Memorandum of Understanding to appoint an exclusive USA distributor to sell its magnesium into North, Central and South America and the Caribbean in the aluminium market. The distributor has committed to purchase a minimum of 2,000 tonnes of magnesium a year from LMG's planned production facility in Morwell Victoria. The deal will deliver excellent prices to LMG due to an anti-dumping duty payable on Chinese imports into US markets.

The distributor is Metal Exchange Corporation (MEC) which is headquartered in St. Louis, Missouri. Founded in 1974, MEC has grown from a regional aluminium scrap company to a global trader with offices in Switzerland, China and Brazil. In the USA, MEC has six manufacturing plants employing over 700. With a unique blend of marketing expertise and deep manufacturing excellence, MEC provides its customers an unparalleled array of products and services, directly supplying scores of aluminium and magnesium ingots under short and long term agreements.

North and Central America currently uses 160,000 tonnes of magnesium a year and this is projected to increase with greater use of magnesium by the motor vehicle industry. There is only one magnesium producer in North and Central America, with most magnesium imported from China.

In the USA, there is an anti-dumping duty payable on imported China magnesium. The result of this duty is that the magnesium price in the USA is currently US\$1.65 per lb or in the order of US\$3,640 per tonne, whereas the FOB China magnesium price is currently US\$2,050 per tonne.

Under the USA-Australia fair trade agreement, magnesium produced in Australia is exempt from this import duty. LMG proposes to sell at least 50% of its production into the US market at this higher price.

### **3. RWE Power**

In June, 2016 LMG signed a MoU with RWE Power AG to continue to develop a magnesium plant capable of producing approximately 30,000 tonnes per annum of magnesium from brown coal fly ash from its Hambach mine near Cologne, Germany.

The project involves four stages of development, being:

- Conduct process test work on the RWE fly ash
- Completion of a feasibility study
- Completion of engineering, procurement and permitting
- Construction and commissioning

Each stage is conditional on the successful completion of the preceding stage.

Europe imports in excess of 150,000 tonnes of magnesium per annum. There is currently no producer in Europe and magnesium metal has been listed as the fourth most critical raw material in the EU list of 14 metals.

RWE Power AG and LMG have identified the brown coal fly ash from RWE's Hambach mine as being the most suitable to commercially extract magnesium. RWE Power mines produce approximately 100 million wet tonnes of brown coal per annum (from which approximately 35 to 40 million tonnes per annum are produced from its Hambach mine) compared to 65 million tonnes per annum in the three Latrobe Valley mines.

RWE Power AG is part of the RWE Generation SE. Since 1 January 2013, all generation in the RWE Group has been steered by RWE Generation SE, enabling the pooling of the generation and engineering expertise of RWE Power in Germany, RWE Essent in the Netherlands, and RWE Generation UK in the UK. RWE has some 14,000 employees in its generation business and more than 40 GW of power generation capacity.

#### **4. Hydromet Process now 100% owned**

On 1 July 2016, LMG acquired the remaining 50% of the hydromet intellectual property for the issue of 30 million LMG shares. These shares will be escrowed for a period of six months until 31 December 2016.

Patents have been granted for USA, China and Australia and patents are pending for India, Indonesia and EU. These patents are expected to be granted by the end of 2016.

In addition, Dr. Steve Short entered into a consultancy agreement so that LMG may retain his services to adapt the current hydromet technology to process other brown coal fly ashes both in Victoria and overseas.

#### **5. Funding**

In July, 2016, LMG announced the completion of a \$1,000,000 placement to sophisticated investors at an issue price of \$0.026 per share. On the same day, LMG also announced a Share Purchase Plan (SPP) to raise an additional \$500,000 from its shareholders.

Funds raised will be used for the completion of the bankable feasibility study for the Latrobe Valley Magnesium Project and provide working capital.

The Opening Date for the SPP is 1 August 2016. The shares will be issued on a first come first served basis. Given the level of interest in the SPP to date, LMG expects to close the issue before the nominated closing date on 19 August 2016.



David Paterson  
Chief Executive Officer

28 July 2016

#### **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 stream from brown coal power generation.

LMG has completed a pre-feasibility and an adjustment study validating its combined hydromet / thermal reduction process that extracts the metal. Production from its initial 5,000 tonne per annum magnesium plant is due to start at the end of 2017. 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 and overseas customers. Currently, Australia imports 100% of the 10,000 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.