Latrobe Magnesium

ABN 52 009 173 611

QUARTERLY ACTIVITIES REPORT

30 September 2019

LATROBE MAGNESIUM PROJECT

1. Feasibility Study

In September 2019, LMG announced the results of its recently completed Feasibility Study. The study results are subject to further experimental and equipment testing but are extremely positive showing a higher potential EBITDA owing to increases in the magnesium price over the past two years.

In two years, the demand for magnesium has increased to approximately 1 million tonnes per annum largely due to increasing use of magnesium alloys in cars that reduce weight with reduced energy consumption and emissions.

EBITDA

The 3,000 tpa magnesium plant is estimated to make an EBITDA of up to $5.6 million per annum when it is operating at its name plate capacity and will provide the necessary information and confidence for LMG to proceed to a 40,000 tpa plant.

A breakdown of how the EBITDA estimate is derived is shown below:

			$M's
Revenue			30.9
less -	Production expenses	(22.4)	
	Selling & transport costs	(2.4)	
Total production & selling costs			(24.8)
Gross profit from operations			6.1
less -	Operating costs		(0.5)
EBITDA			5.6

Components of EBITDA

Some 70% of the revenue figure is calculated using the current magnesium price from the US Geological Survey quarterly report by the Department of Interior, of US$2,650 fob China and US$2.30 per lb in the USA. The exchange rate used is A$1.00:US$0.67.

The balance of the revenue forecast is derived for the other five by products produced by LMG in its process. The product quantities are estimated via the Metsim model in its mass balance. The selling prices used are based upon the assessment of the value of these products by third party experts in the cement and steel industries.

The largest contributor to this additional revenue is LMG's Supplementary Cementitious Material (SCM). This material has been analysed and tested for its strength and set times by BG&E Technologies Pty Ltd, an independent third party expert in the cement industry. BG&E Technologies Pty Ltd has also provided a market analysis which predicts the range of selling prices for this SCM product.

The costs used in the production expenses are also based upon the inputs detailed in the Metsim model produced by Mincore and the costings are estimated using current cost estimates which are supplied from third party suppliers and have been audited by LMG's auditors.

LMG has conducted sensitivity analyses on the financial summary included in the feasibility study. The effect of this sensitivity analyses on EBITDA of $5.6 million has been summarized below:

EBITDA amount	**$M's**	**$M's**
Sensitivity to Mg price	-10%	+10%
EBITDA	3.5	7.8
Exchange rate	7.4	4.1

The above sensitivity analyses shows that a 10% rise in the magnesium price will increase the EBITDA by $2.1 million to $7.7 million while a 10% reduction in price would reduce the EBITDA by $2.1 million to $3.5 million. If the magnesium price stays the same, but there is a 10% rise in the US exchange rate to 74 cents then the EBITDA will be reduced by $1.5 million to $4.1 million while a 10% reduction in US exchange rate to 60 cents will increase the EBITDA by $1.8 million to $7.4 million

Employee Numbers

The initial plant is estimated to employ up to 54 on-going direct employees and contractors and the expanded plant is estimated to employ approximately 370 people during operations. Between 50-75 construction jobs will be needed with the initial plant and up to 240 to construct the expanded plant.

Capital Expenditure

LMG has advised that the capital expenditure for its 3,000 tpa magnesium plant is in the order of $54 million. The feasibility study was completed to an accuracy level of +20%/-10%.

The breakdown of the capital expenditure is as follows:

	$M's
Hydromet	10.8
Spray Roaster	19.0
Briquetting	2.3
SCM equipment	1.0
Furnace, Retort, Smelter	15.2
Refining Equipment	4.2
Laboratory and Administrative activities	1.5
Total Capex	54.0

Mincore Pty Ltd (Mincore), our third party consulting engineers, have received quotes from third party suppliers for the Spray Roaster, Furnace, Retorts and Smelter, and Refining equipment, being a large part of the overall capex. Mincore has also allowed for design growth and a contingency of 14% or $6.1 million, included in the $54 million above.

The capital equipment required has been derived from the Metsim model which was produced by Mincore's process engineer. The Metsim model produces the production flowsheet which provides the mass balance and the equipment list. The steps in the production flow sheet are then tested by LMG's third party laboratory, Bureau Veritas Laboratories Ltd in Perth.

All LMG's smelter work is conducted by CSIRO Laboratories.

After completion of these funding arrangements, LMG expects to commence construction work on site in the first quarter of 2020 and it should start production in the middle of 2021.

2. Hambach Project (Germany)

LMG has produced a large sample of supplementary cementitious material from its beneficiated RWE fly ash that is being tested locally. Once the results of these tests are known, LMG will send the report and the second sample to Germany so that the Verein Deutscher Zementwerke e.V (German Cement Institute) in Düsseldorf may analyse the product to ensure it meets EU Standards.

3. Funding

On 16 October 2019, LMG announced it had secured project funding of $2.7 million from Australian-based finance company RnD Funding Pty Ltd, repayable in October 2020.

This funding allows LMG to carry out additional engineering studies and optimisation of its 3,000 tpa plant and provide additional working capital, prior to its construction early next year. The funding will also be used to refinance its existing $1.5 million project finance facility.

A term of this facility is that LMG will issue 13.33 warrants for every dollar drawn under this facility. The warrants have an exercise price of 3 cents and are exercisable for a period up to 3 years post the drawdown dates.

The interest rate payable on the facility is capitalised at the rate of 15% per annum.

This project funding will release some $850,000 of new funds. If required, LMG intends to also secure a Research and Development funding facility in the order of $500,000 in the next three months. LMG has received interest from its traditional R&D lender to provide this facility. The total new finance available to the Company will therefore be in the order of $1.35 million.

D. Paterson

David Paterson
Chief Executive Officer

17 October 2019

About Latrobe Magnesium

Latrobe Magnesium is developing a magnesium production plant in Victoria's Latrobe Valley and another plant near Cologne in Germany 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 preliminary feasibility study validating 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 fourth quarter of 2019 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 and overseas 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_2 emitter. LMG adopts the principles of an industrial ecology system.