

# QUARTERLY ACTIVITIES REPORT

# 30 September 2015

# LATROBE MAGNESIUM PROJECT

#### 1. Ash Supply Term Sheet

In August 2015, Latrobe Magnesium Limited (ASX:LMG) executed a letter of intent and Ash Supply Term Sheet with GDF SUEZ Hazelwood (Hazelwood) in relation to the supply of spent fly ash from Hazelwood's site in Victoria's Latrobe Valley.

LMG intends to develop, build, own and operate a 5,000 tonne per annum magnesium production facility at 320 Tramway Road Morwell. The plant will also produce a supplementary cementitious material that is a suitable replacement for cement in the production of concrete. These two products will use over 90% of the fly ash waste stream.

Once the plant operates successfully, LMG intends to expand the plant to produce 40,000 tonnes of magnesium per annum. The expanded plant will also use the ash contained in the Hazelwood ash dams. It is envisaged that this expansion will be undertaken within 18 months of commissioning the initial plant and directly employ up to 150 people. About 800 people are expected to be employed directly or indirectly through the construction and operating phases.

The purpose of the letter of intent is to pave the way for LMG and Hazelwood to enter into a fully termed Agreement for the supply of ash from Hazelwood's premises for use in the LMG plant as well as the installation of associated delivery infrastructure.

LMG and Hazelwood agree to enter into good faith discussions and use their reasonable endeavours to negotiate the Agreement based on the principles and terms set out in the Ash Supply Term Sheet. It is envisaged that this Agreement will be executed following the completion of LMG's feasibility study expected to be completed in April 2016 and prior to the construction of the initial plant in June 2016.

This Ash Supply Term Sheet does not create any legally binding obligations between the parties at this stage.

#### 2. Test Work and Engineering Study

LMG has tendered the design and engineering of the plant with five engineering firms. All firms agreed that it would take some four months to complete this work.

LMG is looking to use vertical retorts in its initial plant. It has a commercial design from China which it intends to test on a small scale at CSIRO to confirm its suitability for LMG's fly ash feedstock. LMG will also finalise its iron reduction and test work on its TEOA regeneration circuit whilst this work is being completed.

This work means that the design and engineering work will be pushed back for three months and should commence early next year with the feasibility study being completed in April 2016.

The previous timetable announced by LMG will therefore be put back by this three month period. The ordering and construction of the initial plant will commence in July 2016 and be completed twelve months later.

## 3. Further Cementitious Material Test Results

In October 2015, LMG completed further cementitious test results that showed LMG's material continues to outperform fly ash. Additional applications in the ultrafine fly ash market, where product sells for over \$200 per tonne, is also being assessed.

There is a major shortage of fly ash in Victoria. Victorian users import up to 300,000 tonnes per annum from New South Wales and Queensland and some users are contemplating importing fly ash from overseas.

The cementitious testing was conducted by BG&E at the TSE Laboratory in Sydney and also at Cement Australia's Laboratory in Brisbane.

TSE conducted shotcrete mortar tests with a control cement, cement incorporating 30% of a fly ash, the cementitious material produced in China and three other residues including, a SR6 sample, for setting times and compressive strength over 24 hours. The SR6 sample is representative of what LMG expects to produce in a commercial plant. TSE found that the strength of material using the LMG residues were significantly higher than those using fly ash but some 23% down on the cement control mix. These tests showed better initial set times for the SR6 residue mix over cement by 19% and better final set times of 8%. TSE conducted these tests on shotcrete because it is a high value product.

TSE conducted concrete tests on a concrete mix, and two other mixes with 30% substitution with fly ash and the China sample. While the initial set times and strengths of the China sample were somewhat slower than the fly ash and the cement mixes in the early stages it progressively caught up to both over the 3, 7, 14, 28 and 56 day tests. LMG believes the slower initial set times were due to problems with the China sample. The slower set times were not evident in the above mentioned mortar tests.

Cement Australia conducted concrete tests on a concrete mix and three other mixes with 20% substitution with two SR6 samples and the China sample. Cement Australia found the relative strength performance close to that of the cement mix with strengths at both 7 and 28 days being 0.9 of the reference cement.

Cement Australia also found the LMG residue performance is slightly better than a number of the fly ashes currently available in the New South Wales market.

#### 4. USA Patent granted

In October 2015, LMG was been granted a United States of America patent for its unique hydromet process.

The Australian patent was granted on 26 September 2013 for 20 years starting from 27 August 2010.

The process is owned 50% each by Ecoengineers Pty Ltd and Magnesium Investments Pty Ltd, a 100% owned subsidiary of LMG. LMG has the exclusive worldwide marketing rights for the commercialisation of this technology.

Patent applications were lodged in March 2013 for additional international territories being all countries within the European Union, China, India and Indonesia. All these countries are known to have large lignite / brown coal deposits. To date LMG has concentrated its activities on the Latrobe Valley and Germany.

The progress of the patent applications in each of these countries is summarised in the table below:

Country/Region	Number	Status	Expected date of grant
Australia	2011293107	Granted	26 September 2013
China	201180040099.2	Response filed to Office Action	By end of 2015
Europe	11819208.7	Response filed to Search Opinion	By end 2016
India	577/MUMNP2013	Examination requested	By end 2016
Indonesia	W00201300844	Examination requested	By end 2016
United States	9139892 (13/818788)	Granted	22 September 2015

## 5. Offtake Agreements

In September 2015, both the LMG's CEO and Chairman met with our German and Japanese trading partners with a view of firming up our earlier stage negotiations about marketing the LMG's future magnesium production within the framework of a firm offtake agreement. Both countries have identified the metal, Magnesium, as a critical raw material for their own needs and their respective national industry strategies reflect the special role which magnesium is expected to play.

Our trading partners expect industrial demand to grow strongly and are keen to advance to a formal agreement with LMG to contract for magnesium deliveries in 2017. Both parties (in Japan and Germany respectively) indicated that each would take up our offer of selling up to 50% or 20,000 tonnes per annum of our magnesium output. Our two partners informed us that they had had discussions with their respective national Development Banks in assisting us with funding. There is clear interest in entering into funding arrangements for the construction of LMG's plant.

The German and the Japanese trading partners confirmed our earlier understanding that once we have completed our feasibility study they would be in a position to commit to formal offtake agreements. We believe that we will be able to complete the feasibility study in April 2016 and finalise the off take agreements shortly thereafter.

These agreements are essential elements in the funding strategy for both the initial and the expanded plants.

## 6. Fund Raising

In September 2015, LMG received an Australian R&D tax incentive of \$421,651 following its lodging of its FY2015 tax return.

In October 2015, LMG raised \$600,000 of debt funding from Platinum Road to progress the development of its Latrobe Valley magnesium project.

This funding will allow LMG to complete its vertical retort, hydromet and cement test work and also commence its design and engineering studies for its initial 5,000 tonnes per annum magnesium plant.

LMG arranged the loan through Platinum Road. The key terms of the facility are:

Term	12 months to 16 October 2016		
Repayment	Cash in full from the 2016 R&D tax rebate refund		
Interest Rate	15% per annum		

Conversion The lenders have the right to convert any part of their loan at a share price of 1.5 cent during the term of their loan

As at 20 October 2015 following the completion of this debt raising, the Company has cash on hand of approximately \$1 million.

David Paterson Chief Executive Officer

20 October 2015

#### 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 in the middle 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<sup>2</sup> emitter. LMG adopts the principles of an industrial ecology system.