

## Latrobe Building On Valley Waste

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[LMG - LATROBE MAGNESIUM LIMITED](#)

**With the imminent closure of the Hazelwood power station there may not be much in the way of good economic news in Victoria's Latrobe Valley at the moment, but the eponymous Latrobe Magnesium (LMG) hopes to change that.**

In fact, the company hopes to create something literally out of the vacuum left by Hazelwood. The company is hoping to become the first (and only) magnesium producer in Australia, using Hazelwood's brown coal fly ash waste as its raw material.

Fly-ash is a waste by-product of coal-fired electrical power plants. Latrobe has its world-first, patented Hydromet combined hydro-metallurgical/ thermal reduction extraction process to produce magnesium metal and cement products from fly ash.

The process involves treating the fly ash to reduce sulphur, iron and silicon to suitable levels, so the beneficiated material can be used as feedstock in the ensuing thermal reduction process.

The test runs of the Hydromet process on the Hazelwood fly ash waste have produced magnesium metal with very few impurities, running at 99.7% pure magnesium before the refinery stage. This compares very favourably to normal production, from dolomite, which generally achieves a purity of about 95%.

Also, the cement material that would also come out of the Hydromet process appears to be suitable for use in construction products.

If its plan succeeds, Latrobe will build a \$40 million plant at Morwell in the Valley, which will employ 50 people.

The funding will be a big task to assemble, given that Latrobe, at a share price of 2 cents, is capitalised at just \$25 million.

In a preliminary feasibility study released last month, Latrobe said it planned to build a 3000-tonne-a-year pilot plant that would break even – or turn a small profit – and which would require about \$40 million of funding. That is a step-down from previous plans for a 5000-tonne-a-year plant that would have cost \$53 million.

However, the funding task may not be as large as it looks. Under the federal government's Industry Research and Development Act (1986), Latrobe expects to receive total rebates of about \$16 million for its eligible spending on 11 activities that comprise the initial plant, and its operating costs for the first 12 months of operations. And having completed its preliminary feasibility study, Latrobe has lodged a grant request for up to \$12 million in funding from the Victorian government.

Given the dire employment effect of Hazelwood closing, one would not think that the Victorian government would be greatly keen to knock back grant assistance to a new employer – albeit one on a smaller scale than Hazelwood.

The rest of the funds will be raised through a mixture of equity and debt, from 'sophisticated' investors and "small-cap financial institutions." If the funding is secured as the company expects, Latrobe says it could turn the first sod on the site in May.

From the 3000-tonne-a-year pilot plant, Latrobe expects to gain the necessary "information and confidence" to proceed to a 40,000-tonnes-a-year-plant. If that were to come to fruition, it would likely cost about \$325 million – but employ about 300 people.

A pre-feasibility study and an adjustment study have been successfully completed, and a feasibility study to commercially justify the new technology is due for completion in April 2017, having started in December 2015.

If construction of the plant were to begin in May, the first magnesium metal production would be expected twelve months later.

With about 85% of the world market of magnesium controlled by China, countries like Japan, Europe and the US are looking for another long-term steady supply source. Latrobe has entered into memorandums of understanding (MOUs) with Japanese and US distributors to sell the initial 3,000 tonnes a year production from the pilot plant, and a significant part of its planned 40,000 tonnes a year expanded plant's production. The US magnesium price is approximately 50% higher than the China price mainly due to an anti-dumping duty.

Demand for magnesium worldwide is strong. The lightweight metal 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. Australia imports 100% of the 10,000 tonnes it consumes.

A feature of the proposed LMG plant and interest from Japanese magnesium buyers is the low carbon footprint, which emits 60% less emissions than the Chinese plants. Japan currently uses 40,000 tonnes of magnesium a year and this is projected by industry sources to increase with greater use of magnesium by the motor vehicle industry.

Hazelwood's ash dams contain about 27 million tonnes of the stuff – enough to feed the full-size plant for more than 20 years. Latrobe needs to sign a formal deal with Hazelwood's owner, French electricity utility Engie, to secure the ash, after striking a 2015 non-binding agreement on terms of supply.

The process could also be taken overseas. Back in 2013, Latrobe signed an agreement with Germany's RWE Power to investigate the commercial viability of its Hydromet process in Europe. RWE's fly ash waste pile is significantly larger than the Latrobe Valley resource. Latrobe's test work on the RWE ash has shown, however, that it would have to reduce the high levels of iron in this resource.

Latrobe Magnesium is a speculative stock, but it has outlined a clear path by which it can become the country's only producer of magnesium metal – a metal in growing demand – with significant export potential. If the news flow on the funding process and beginning of construction is trouble-free, investors could expect the share price to move higher. Providing some good news for the Latrobe Valley would be a welcome bonus to the whole process.