



Lithium lift-off

A number of mining companies are being energised by their involvement with lithium deposits. **Stephen Bell** looks at the company they are trying to catch up to.

Miners are rushing to exploit deposits of lithium, betting that demand for the metal will explode in coming years because of its growing usage in batteries and new generation electric vehicles. Australian lithium hopefuls include Perth-based duo Galaxy Resources and Reed Resources, while Brisbane-based Orocobre is chasing brine success in Argentina.

But all the newcomers are playing catch-up with Talison Lithium.

Already the biggest global producer, Perth-based Talison recently upped production of lithium concentrates from its Greenbushes mine in WA. It is expected to unveil a bigger-than-expected Phase Two expansion in early 2011.

In the longer term, plans are afoot for a downstream lithium carbonate plant as Talison eyes growth in the nascent electric vehicle sector. At present, car batteries

account for less than 1% of global demand for lithium, the lightest known metal.

However, if electric cars take off as quickly as some expect, the total lithium market could "double or triple in the foreseeable future," Talison managing director Peter Oliver said. "The only question is the timing."

Talison's latest expansion continues a rich and varied tradition of mining at Greenbushes, located in the heart of Western Australia's lush southwest karri forest.

Tin was discovered at the site in 1886 and mined in 1888. At the peak of production in the early 1900s, the local numbers swelled to 3000 people, probably a decent chunk of WA's population back in those days.

Mechanical dredging was introduced for the alluvial tin deposits in the 1960s, but the region's modern hard-rock era began in 1980 with the discovery of a major tantalite resource. Tantalite is the source of tantalum.

For many years the tin-tantalum operation

was run by Sons of Gwalia. SOG's 2004 collapse was the trigger for the rise of Talison, formed in 2007 to acquire the Greenbushes and Wodgina (tantalum) projects from the administrators.

Today the tantalum is in a separate business, privately owned Global Advanced Metals, while Toronto-listed Talison focuses on lithium.

"The lithium business has only gained significant traction in the last two or three years - before that it was really small," Oliver said.

On a global scale, it is still a modest market, estimated at 110,000 tonnes per annum of lithium carbonate, mostly sourced from brines in the "Lithium Triangle" that stretches across Chile, Argentina and Bolivia. However, it is growing steadily, driven largely by China's rise in the manufacturing of smart phones and hand-held computers. On average, demand has risen 5.5% a year in the past decade. ▶



Talison's Salar de las Isla project in Chile.



Batteries account for more than 20% of demand for lithium chemicals, up from near zero a decade ago, and the segment could grow to 34% by 2014.

Some analysts are predicting an even faster growth curve if there is a significant take-up of new generation electrically-propelled or hybrid vehicles, the successors to Toyota's Prius.

Talison is determined to capture a fair chunk of that growth by expanding production at Greenbushes. It has just commissioned Phase One, a 20% upgrade, and has started ordering equipment for another ramp-up planned for 2011.

The recent mine expansion has gone "exceptionally well", Oliver said, with the company able to complete commissioning before Christmas, a few weeks ahead of schedule. It lifted Greenbushes' rated capacity to 320,000tpa of spodumene concentrates – equivalent to 46,000tpa of lithium carbonate.

Talison operates two processing plants, one producing chemical-grade concentrates, which are sold mainly to China for use in batteries. Another plant pumps out technical grade material suitable for the glassware market.

The mine itself is not large scale by modern standards, with Talison processing around 600,000tpa of ore to achieve its new production rate.

The company was planning a \$20 million expansion in 2011 to lift the mine's capacity further to 620,000tpa lithium carbonate equivalent. However, Talison saw such strong growth in demand that it revised the plan to allow for further increases in capacity above the original design, Oliver said.

The extent of the increase will be announced early in 2011. In the meantime, long-lead items have been ordered to ensure construction is not delayed.

Talison has also completed early engineering studies on building a lithium carbonate plant onsite, which provide some "pretty encouraging economics", Oliver said.

"Longer-term we see there is an opportunity to supply lithium chemicals into markets, particularly outside of China, direct from Australia."

That option is yet to be properly costed, and may be funded by an eventual listing on the Australian share market.

In late 2009, Talison scrapped a \$196 million initial public offering in Australia when it hit rocky market conditions. Instead, the group focused on a Toronto listing, combined with the September acquisition of Salares Lithium Inc, which holds a lithium brines project in Chile.

It was a strategic diversification for Talison,

which is the only one of four major global lithium suppliers not producing from South American brines.

The listing proved timely for Talison, with its Canadian share price more than doubling in three months, pushing the valuing of the group to \$680 million.

Much of that enthusiasm is for the long-term growth story.

At present, lithium it is not a hugely profitable business for Talison, especially compared with bumper earnings from some WA gold, iron ore and nickel miners. For the three months ended September 30, Talison reported gross earnings of \$4.8 million, from sales of \$21.1 million.

Oliver said the quarterly period did include some one-off costs associated with the separation of the tantalum business and he expected earnings to grow rapidly from there as the group ramped up volumes.

"A lot of people, like us, see the electric car market growing," he said. "They can see that our business will grow by multiples, and there is a big opportunity, too, to increase our profitability."

In contrast, Oliver believes that some of the smaller lithium hopefuls may struggle to hit cost targets.

"In my view, none of the juniors are economic at current prices," is his sober assessment.

"The newcomers have a challenge, both to fund themselves and to profitably operate in the current price scenario."

The incumbent producers, in contrast, have an "enormous economic advantage" over the new entrants, as they are able to expand production cheaply, Oliver added.

Small volume metal markets can be fickle, so it may be prudent for the juniors to get into production as soon as they can.

Resource Capital Research, for instance, says lithium producers, current or near-term, are best placed to take advantage of the forecast increases in prices by the middle of the decade. "Resources are ample but could be slow to bring online, due to financial and technical hurdles faced by some projects," the research firm said.

Lithium prices shot up to a peak of about \$US6000 per tonne in 2008, but weakened with the onset of the global financial crisis. Lithium carbonate sells for about \$US4500/t in China, Oliver said.

"A lot of people that are proposing projects are looking at substantially higher prices of, say, \$6500 to \$7000 a tonne," he said.

Brisbane-based Orocobre believes it can build a profitable business, based on forecast low production costs at its Salar De Olaroz project in Argentina.


back



Japan's Toyota is an investor in the project, where a definitive feasibility study for a \$US100 million development is due in the first quarter of 2011.

Olaroz, capable of satisfying roughly 10-12% of the current lithium market, may start construction in the second half of 2011, Orocobre managing director Richard Seville said.

Seville insists the newcomer will hit cost targets.

"We are going to be competitive with existing low-cost producers in South America," he said.

These include two of the world's biggest producers: Chemetall, a unit of Rockwood Holdings, and Sociedad Quimica y Minera de Chile SA, or SQM.

Some analysts forecast Orocobre would

produce lithium at a cost of \$US2000/t, which would provide a significant profit margin even at current prices, Seville noted.

Like existing South American producers, Orocobre plans to produce battery-grade lithium from salt lakes. This contrasts with Galaxy and Reed Resources which, like Talison, are targeting production from hard spodumene deposits.

Galaxy recently commissioned its Mt Cattlin mine, set to be the world's second-largest hard-rock lithium operation after Greenbushes, with a forecast production rate of 137,000tpa of concentrates. The company plans to ship the concentrates out of Esperance to a purpose-built lithium carbonate plant in China, due to begin operations in the second quarter of 2011.

While not commenting directly on

competitors, Seville said that, "as one coming into the sector, I'd much prefer to be a low cost brine producer, rather than a high-cost minerals producer".

Orocobre unveiled its deal with Toyota in January 2010. The Japanese car maker can buy 25% of Olaroz on completion of the feasibility study, and, as part of the deal, must secure a Japanese government-guaranteed debt facility for at least 60% of the project's capital cost.

"If it all goes according to plan, the project is fully funded," Seville said.

If market growth forecasts are correct, there will be room for newcomers such as Orocobre and Galaxy as electric vehicles gain traction with consumers. But grand old Greenbushes will still rule the lithium roost for some years yet.



