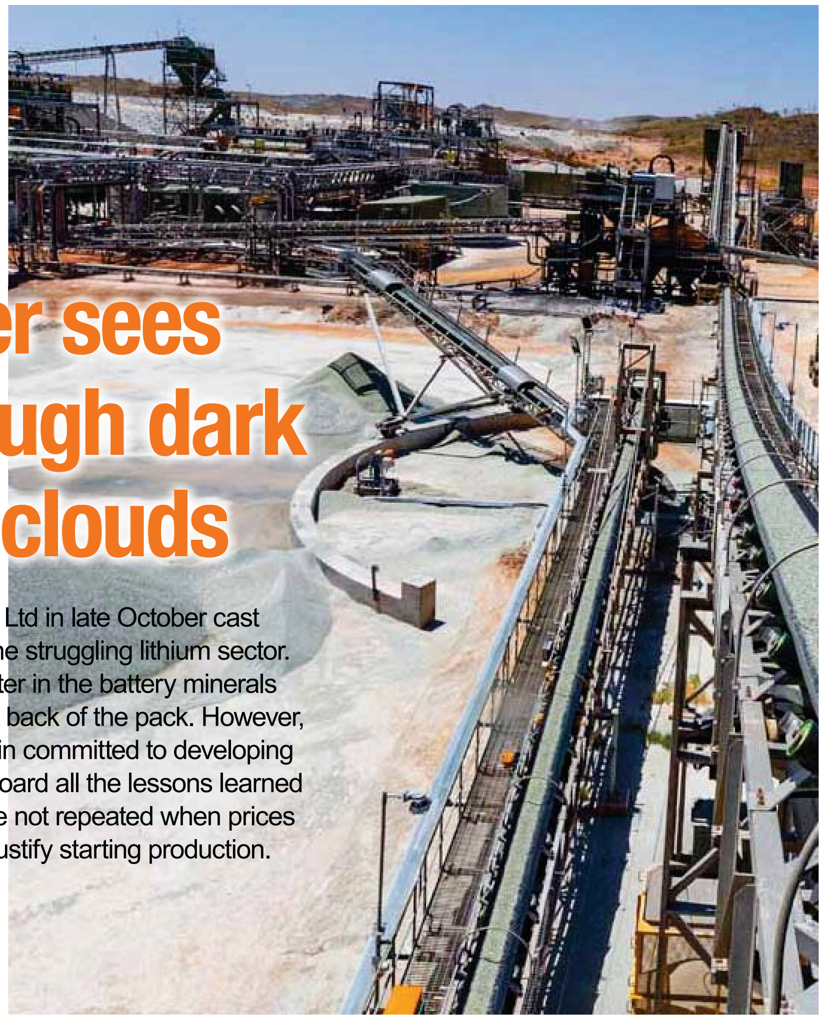
JANUARY, 2021

Next tier sees hope through dark lithium clouds

Paydirt, National

BATTERY MINERALS



Next tier sees hope through dark lithium clouds

The collapse of Altura Mining Ltd in late October cast another dark cloud over the struggling lithium sector. What was once the pacesetter in the battery minerals revolution is now lagging at the back of the pack. However, those companies which remain committed to developing lithium projects are taking on board all the lessons learned in a bid to ensure mistakes are not repeated when prices have recovered enough to justify starting production.

KordaMentha was appointed receivers of Altura on October 26 after the company conceded it could not attract enough support for its $150 million recapitalisation effort aimed at wiping away most of its climbing debt. Voluntary administrators were called in the next day.

Receivership comes a little more than two years after Altura officially opened its namesake lithium operations in the Pilbara and only 14 months after fellow spodumene producer Alita Resources also entered voluntary administration. Mineral Resources Ltd has also mothballed its Wodgina project, while the likes of Pilbara Minerals Ltd and Galaxy Resources Ltd have had anything but smooth rides since starting up their respective mines in Western Australia.

Pilbara Minerals has put its hand up to take control of the Altura operations, having entered into an implementation deed with the senior secured loan noteholders of Altura just two days after receivers were appointed. The conditional deal for the shares in Altura's operating subsidiary, valued at about $US175 million, is subject to completion of the receivership process.

Altura loan noteholders have reportedly agreed to vote in favour of Pilbara Minerals taking control of the operations should the acquisition proceed. Pilbara Minerals has also procured the right to match any competing proposal offered.

Pilbara Minerals was the obvious buyer for Altura given its Pilgangoora operations sit immediately to the west. Both mines have been producing spodumene for roughly the same period.

"This potential acquisition represents a logical consolidation of two neighbouring operations to unite the greater Pilgangoora orebody, unlocking tangible synergies in both the short and long term," Pilbara Minerals managing director Ken Brinsden said in an ASX announcement.

"If successful, the acquisition will cement Pilbara Minerals' position as the largest pure-play ASX-listed lithium company by enterprise value and will provide strong leverage to the expected recovery in lithium prices, driven by the increasing demand for electric vehicles and energy storage applications evident across the world.

"We believe this will help safeguard jobs in the WA lithium sector and ultimately create some exciting new growth opportunities that will deliver a range of benefits for the local economy."

The collapse of two lithium companies so soon after entering production has cast doubt over the ability of other hopefuls in the space to make it to market, especially while prices remain depressed and not forecast to hit their straps again for at least two more years.

Liontown Resources Ltd is one such developer. The Tim Goyder-chaired company is focused on the Kathleen Valley lithium project, about 350km north-northwest of Kalgoorlie, and recently published both an updated PFS for a standalone 2.5 mtpa mining and processing operation there, as well as a scoping study for a potentially lucrative downstream option.

Based on indicative timetables, Liontown is still four years away from commissioning an operation at Kathleen Valley that is forecast to produce an average 350,000 tpa spodumene concentrate and 430,000 tpa tantalum concentrate over a 40-year mine life.

Liontown managing director David Richards said his company had the luxury of time on its side given spodumene prices were

Pilbara Minerals has emerged as the frontrunner to acquire the neighbouring Altura lithium operations from the administrators of Altura Mining

tipped to recover by 2024.

"We're not in a hurry to rush into production now and the board is quite firm on the principle that we will not go into production unless the price of lithium [spodumene] improves," Richards told **Paydirt**.

"I think the key is we've got time. We don't want to be a miner for the honour and glory of it. We want to be a profitable miner and the key is to make sure that the price recovers, is sustainable and we see the increasing demand that people are predicting around the place.

"We've got the opportunity to learn from other groups and be disciplined when it comes to making that decision to mine."

Liontown updated its original PFS published in 2019 following this year's twofold increase in the resource base at Kathleen Valley to 156mt @ 1.4% lithium and 130 ppm tantalum. The updated PFS released in October is based on a new reserve of 71mt @ 1.4% lithium and 130 ppm tantalum.

Key financial outcomes for the updated PFS included life-of-mine free cash flow of $4.8 billion, post-tax NPV of $1.12 billion and IRR of 37%. Capex is estimated at $325 million with payback in three years, underpinned by cash operating costs of $US283/dmt.

Unlike other lithium mines in WA, Kathleen Valley will be both an underground and open pit operation, with processing via whole of ore flotation to produce spodumene and tantalum concentrates.

Richards said while whole of ore flotation was not a conventional process for lithium production, it provided a greater degree of certainty in making spodumene.

"We were cognisant of the fact all the other developers and processors at the moment have been struggling with their grades and recoveries in the concentrate," he said.

"Everyone has got to remember the whole lithium space is pretty new and there's a lot of learning going on. We wanted to take advantage, but learn from those guys that have gone before us in the last couple of years and work out how we can approach it differently to ensure we do our best to avoid the issues that the others have had."

Liontown chief operating officer Adam Smits said a predominantly underground mining operation allowed the company to be more selective about which ore could be processed first.

"The key was to get higher grade and lower costs earlier in the mine life as opposed to later and make the project hum from day one rather than wait to the end to make a lot of money," Smits said.

Low-cost production is the signature feature of another ASX-listed hopeful in ioneer Ltd which has the most advanced lithium play in the US with its Rhyolite Ridge project in Nevada.

The DFS on Rhyolite Ridge highlighted a lowest-quartile AISC of $US2,510/t for production of 20,600 tpa lithium carbonate and 174,400 tpa boric acid over a 26-year mine life. This is a huge point of difference for ioneer chairman James Calaway, who held the same position at established producer Orocobre Ltd for eight years until the company became a producer in 2016.

"Like any other material that we produce, it has the tendency to be cruel to those at the top part of the cost curve and the companies that do well are the ones at the lower part of the cost curve because they can withstand the downturns," Calaway told **Paydirt**.

"Now they may not be happy about it, they may not be joyous, but they don't run the risk of being taken out. Nobody at Orocobre is running around dancing in the streets about the price they're receiving today for their lithium, but they're also not worrying about falling apart. And they know better days are coming and they're coming soon.

"In our case, we have the benefit and we do truly believe that we will be the lowest-cost producer on the planet…so if our company goes into receivership, there's going to be a whole lot of blood on the floor because we are at the very bottom of the curve and a substantial part of our operating costs, about 70%, is covered by a very low volatility material in the boric acid."

According to ioneer's DFS, the company will need $US785 million to build the proposed 2.5 mtpa mining and processing operation at Rhyolite Ridge. Managing director Bernard Rowe said high capital costs in the construction of other lithium projects had proven their downfall and he did not want his company to suffer the same fate.

"Not only did they have to battle the high cost [of operations]…the fundamental issue here was that they used incredibly expensive capital to build the projects," Rowe said. "There was very little-to-nil margin for error and that's something our board is adamant that we just won't do."

While his company is less advanced in the development cycle as Liontown and ioneer, Lake Resources Ltd managing director Steve Promnitz believes the support is there for lithium companies which show early promising signs for production of a consistent high-grade product.

Lake has done just that in 2020 and recently teamed with the likes of Hazen Research Inc and Novonix Battery Technology Solutions to finalise test work on production of a 99.97% battery-quality lithium carbonate product from the Kachi brines project in Argentina.

Promnitz said end-user support from key markets in China, Europe and the US had already lifted for existing lithium producers and it was "only a matter of time" before that filtered down to the next group of developers.

Steve Promnitz

"As we learnt last time, although that may lift the sector, there's always going to be parts of the sector that are going to do better than others and it's been our view for a couple of years now that those who are going to do well are the ones that produce a consistently high quality product," Promnitz told **Paydirt**.

"There is quite a bit of lithium out there, but one of the reasons that the price is depressed is there was a lot of poor-quality material that had to get reprocessed in China. We wanted to leapfrog that step and produce a high-quality battery product consistently and then secondly to do that with a sustainable and responsibly sourced benefit.

"We're fortunate we've got a project that can be scaled up to pretty much whatever size the market wants, with a process [direct extraction] which is quite simple and doesn't use much water and produces a quality product."

And while it may seem counterintuitive to be thinking about downstream options for lithium projects when concentrate producers in Australia are yet to have mastered their craft, Liontown has put forward a strong case for future production of a battery-grade lithium hydroxide monohydrate or lithium sulphate monohydrate.

Richards said the company's recent downstream scoping study had received an "overwhelming positive" reaction from investors which he put down to Liontown acknowledging this was not its skillset and a partner with the requisite expertise would be needed to assist with such a development.

"The financial metrics are such that if we could do it, then it's a no brainer, but we have to acknowledge our expertise," Richards said.

"We're confident that we can mine a deposit and confident we can produce a spodumene concentrate, but obviously the next step of turning it into battery chemicals, that's something where we probably need some help."

– Michael Washbourne