PROFILED COMPANY

ASX: LKE / PINK: LLKKF

Lake Resources N.L.

Why new projects are essential to supply the EV revolution

LAKE RESOURCES | AT THE HEART OF THE LITHIUM TRIANGLE

America's newfound love for electric vehicles (EVs) saw more than 1.1 million hit the road by the end of 2018, which was led by Telsa. However, the EV revolution would have stalled long ago without supplies of key battery minerals, principally lithium.

A soft, silvery-white metal, lithium is used to make batteries for smartphones, laptops and EVs. Demand has soared in recent years, with global output having increased three-fold since 2005 to reach more than 300,000 tonnes last year.

Yet with miners' expansion plans now falling short of expectations amid current sluggish prices and weak investor sentiment, automakers and battery companies are now scrambling to secure supply.

Steve Promnitz, Managing Director

"The lithium industry is looking to increase supply by five to eight-fold in the next five years, simply to meet the rising demand for EVs," says Stu Crow, chairman of Argentina-focused lithium miner, Lake Resources.

"This is hard to comprehend when you think there's never been a commodity ramp up supply so quickly."

A WALL OF DEMAND IS COMING

Analysts have projected that a "wall of demand is coming for lithium from the EV sector," and judging by the latest news, it is easy to see why.

The global electric car fleet exceeded 5.1 million as of 2018, up 2 million from the previous year. However, the International Energy Agency has forecast that EV annual sales could reach 23 million by 2030, or even higher depending on policy and technology advances.

Globally, battery makers have committed US$300 billion in building around 100 "megafactories" by 2028, with EV makers having invested a further US$250 billion to expand production of EV's over the same period.

Benchmark Mineral Intelligence predicts lithium supply will need to increase at a compound annual growth rate of 19 percent through to 2025, simply to meet demand. Yet even at the height of the market, the industry only managed an 11 percent annual expansion, from 2015 to 2018.

Lithium is currently produced as "hard rock" spodumene in countries such as Australia and Canada, and "brine" in the so-called "Lithium Triangle" of South America, including Argentina. All types of lithium will be needed however, according to Benchmark.

"The question in the lithium market is no longer whether spodumene or brine resources will be developed – both are needed to take us anywhere near the growth estimates of the next two to three years," Benchmark

said in its July 2019 report, "Lithium's price paradox."

ARGENTINA: HOME TO THE WORLD'S LOWEST COST LITHIUM

Lake Resources sees its lithium brine projects in Argentina as part of the answer to the looming supply challenge. Based in the heart of the Lithium Triangle, home to the world's lowest cost lithium output, Lake's projects are adjacent to multi-billion dollar producers.

With the added upside of a potentially revolutionary technology solution straight from Silicon Valley, the company is quietly confident of delivering results.

With four wholly owned lithium brine projects comprising Cauchari, Kachi, Olaroz and Paso in its portfolio, Lake has assembled one of the largest lithium exploration plays in Argentina, spanning more than 700 square miles.

Already, Lake has identified a top 10 global lithium brine resource at its flagship Kachi project, equivalent to 11 times the size of Manhattan Island, however the company has even bigger targets ahead of it.

Lake's managing director, Steve Promnitz points to the company's upcoming prefeasibility study (PFS) for Kachi and recent high-grade discovery at Cauchari as potentially transformative, with added potential at Olaroz.

PUTTING A VALUE ON LAKE'S PROJECTS

A pointer to the value of Lake's projects comes from the prices paid for nearby operations.

Chinese producer Gangfeng Lithium invested a combined US$397 million to acquire a 50 percent stake in its Cauchari project, which was followed by a 10-year supply agreement with German automaker Volkswagen.

Together with other recent transactions,

including a US$280 million investment by Korean giant Posco, the implied acquisition cost is around US$55 million to US$110 million per million tonne of lithium carbonate equivalent.

"Doing the numbers on our projects and we're looking at some potentially very valuable operations, still 100 percent owned by Lake," Promnitz said.

TECHNOLOGICAL SOLUTION COULD HELP SAVE THE PLANET

A new technology developed by U.S.-based Lilac Solutions, Inc based on direct extraction could get the whole industry excited.

A Phase 1 engineering study completed with Lilac showed the potential for production costs at Lake's Kachi project to be slashed to among the lowest globally. Importantly too, high lithium recoveries of 85 to 90 percent were confirmed from multiple brine samples tested by Lilac, with concentrates produced in just three hours.

This compares to traditional brine operations, which have lithium recoveries below 50 percent and a lengthy nine to 24 month waiting period for evaporation to produce a suitable concentrate.

The technology also has an environmental benefit too, since traditional evaporation ponds are not required and any water used is reinjected into the aquifer. Amid concerns over the level of water extraction and its potential impact on the ecosystem, such solutions will be crucial in ensuring the lithium industry's sustainability.

For Lake, the next step towards production is building a pilot plant on-site to test Lilac's technology, a process expected to be completed in late 2019.

The company then expects to be shipping product samples to potential partners and offtakers in early 2020 - confirming its ability to produce a high quality, low impurity product capable of attracting premium prices. ■

For more information on the company, visit www.lakeresources.com.au