Lithium is the latest hot metal commodity, but investor fever could be cooling

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Lithium, the lightest metal on earth, has become such a heavyweight in commodities markets that it is increasingly being mentioned in the same sentence as rare earths or vanadium. It's not a compliment.

Once red hot, those commodities are just the most recent metals to experience a boom/bust cycle of quickly rising prices and a subsequent rush by miners into the space, only to end in burst bubbles.

5 things to know about lithium

1. Demand for lithium is surging alongside the increasing viability of electric vehicles. Lithium is a central component of lithium-ion batteries, which also power laptops and smartphones.
2. The much larger lithium-ion batteries required for electric vehicles use 4,800 times as much lithium than electronics batteries use.
3. Lithium’s use extends beyond industrial purposes. It is also a mood-stabilizing drug used in the treatment of bipolar disorder.
4. Lithium is a super soft thin metal that can be cut with a knife. The lightest-weight metal is also highly reactive and flammable, so it is often stored in mineral oil.
5. Lithium is not very water soluble in its elementary form, but it does react with water, and can be extracted from brine and clay.

Demand for lithium, a silvery-white metal called “the new gasoline” by Goldman Sachs, rose 26 per cent in 2016 and is predicted to climb another 39 per cent in 2018. By 2025, demand is projected to increase by 73 per cent as electric vehicles become more viable and an increasing number of countries, including China, tighten restrictions on gas- and diesel-powered cars.

The growth of electric vehicles, along with a broader push for battery storage to facilitate the growth of clean energy, has raised supply fears, sparking a rush of junior miners into the space. Many of these miners claim they could be first to disrupt the sector with technology that could make lithium cheaper and easier to extract.

But many analysts question whether the supply/demand dynamic is overblown. “Lithium is a great story because it’s a gigantic bubble,” said Jeffrey Christian, managing director at researcher CPM Group.
He believes the expected future supply shortage is over-hyped by lithium stock promoters whose estimates of electric vehicle numbers in a decade are three times what the auto sector is predicting. In addition, he adds that only about one per cent of the world’s lithium consumption comes from recycling, so any ramp-up there could massively undercut a supply shortage.

The global lithium-ion battery market is projected to grow to US$77.4 billion by 2024 from US$29.7 billion in 2015, according to a 2016 report by Transparency Market Research.

Lithium-ion batteries also power hot ticket items such as smartphones and laptops, but a car battery uses about 4,800 times the lithium, so developments in the auto sector tend to be the biggest drivers behind lithium outlooks.

Worldwide plug-in vehicle sales last year reached 773,600 units, a 42-per-cent increase from 2015, according to electric-vehicle researcher EV-Volumes. If last year’s growth rate continues, it would mean eight of every 10 cars sold by 2030 would be electric.
The resulting swell of anticipated demand for lithium has sent prices soaring to US$9,100 from US$5,800 a tonne in 2011, according to metal price checker Metalary.

However, prices widely vary since the metal is still traded directly between buyers and sellers rather than through an exchange.

Long-term contracts for lithium hydroxide, the chemical used in batteries, fetch US$13,000 a tonne in North America, while spot prices hover closer to US$23,000 in China.

The lithium market is currently dominated by four players: Sociedad Química y Minera de Chile (SQM), Albemarle Corp., FMC Corp. and China’s Tianqi Lithium Industries Inc. Analysts who believe there’s a bubble say those players can likely keep up with increasing demand, eliminating the need for new suppliers.

SQM alone has so many low-cost lithium reserves “they could crush all of these guys talking about developing lithium mines,” CPM’s Christian said.

There are two types of lithium processing: through hard rock ore, which is mined like other metals in Australia and Canada, or through a salt water brine, most prevalent in South America’s “lithium triangle” of Bolivia-Chile-Argentina, which holds an estimated 70 per cent of known reserves.

Bolivian engineer Marcelo Aguirre shows brine from a pool at the Uyuni Salt Flats in Bolivia, October 10, 2009
Argentina is the most politically attractive of the three countries and much of the enthusiasm around lithium is centered there since many believe it will account for as much as 45 per cent of future global supplies.

Vancouver-based Advantage Lithium Corp. is hoping to distinguish itself in the Argentine lithium sector by partnering with Australian lithium producer Orocobre Ltd., which has been operating in Argentina for more than a decade.

Advantage acquired five properties from Orocobre in exchange for 30% of the company’s stock, and they are joint-venture partners on a sixth.

Chief executive David Sidoo said competition in Argentina has picked up in the past year as many stake claim to any brine properties, known as salars, they can get their hands on, regardless of the grade.
“There’s a lot of junior companies that are starting to pop up and say, ‘We’re going to produce lithium, we’re going to be in the market,’” he said. “I don’t see those companies actually doing anything but promoting their stocks.”

He believes consolidation will occur within two years and foresees Chinese companies coming in to acquire anything with good assets that are close to production. He even anticipates Advantage as one such takeover target.

But before investors sink their money into lithium plays, Sidoo said they should ask three questions: Does the company have the funds necessary to get a project built? Can it prove its assets contain saleable lithium. And, most importantly, has it ever done brine extraction before?

Brine extraction is different than traditional mining processes. Brine is pumped to the surface and solar evaporation ponds, some so big they can be seen from space, passively process any lithium.

The process has lower operating expenses since the metal doesn’t have to be mined, but a higher capital expense because of the investment required to create the large solar evaporation ponds, which also leave a large environmental footprint.

In addition, brine extraction is a much longer process than mining. It can take up to two years for the evaporation process to complete, which is a huge challenge for companies to account for.

Hard rock ore, meanwhile, produces higher purity lithium and holds greater potential to be directly processed into lithium hydroxide, the type required for batteries. Currently, lithium must be processed from lithium carbonate, which is used for medical and industrial applications that comprise the bulk of the demand for lithium.

But as the potential for battery power increases, so, too, does the demand for lithium hydroxide. As a result, companies are racing to find cheaper and more efficient ways to mine and process lithium in order to compete with the big established players.

Toronto-based LSC Lithium Corp. is one recent addition to the race, listing on the TSX Venture exchange at the end of February.

The company has big ambitions. Chief executive Wayne Richardson believes LSC could initially produce 50,000 tonnes of lithium per year and has designs on becoming the world’s biggest lithium producer.
He said LSC could soon break away from the pack because of an exclusive deal to use an extraction technology that could disrupt the entire industry.

The Australia-based executive also heads up Enirgi Group Corp, which he said has developed technology that can process brine in a matter of hours rather than years.

LSC has the exclusive rights to use that technology in Argentina if and when it reaches commercial scale. The goal is to reduce the evaporation process from 12 to 24 months to as little as eight hours.

Many other juniors claim to have similarly disruptive technology, but Richardson challenges investors to find out if those companies can put their money where their mouths are.

Enirgi has invested more than US$200 million to develop its direct extraction technology over the past 3.5 years. Another US$50 million has been spent on a demonstration plant and to deliver the new process.

Construction of the plant is expected to be complete at the end of March and a commercial-scale plant could be in production as early as 2019.

The top-secret technology has been demonstrated at scale to an independent third party, Richardson said.

“That’s really what’s held the industry back. There’s lots of promises, lots of dreaming and lots of noise, but very few people who can actually cut through and execute,” he said. “We’ve got the execution capability to not just dream it, but to do it.”

The concentration of lithium in South America hasn’t stopped lithium hopefuls from exploring other mineral-rich countries such as Canada. Investors appear enthused about their chances of success, despite the lack of concrete results.

Montreal-based Critical Elements Corp., whose Rose lithium ore project in Quebec offers investors a lower-risk jurisdiction than South America, is promising production by 2021 and a one-year return of more than 400 per cent.

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Its preliminary economic assessment suggests the operation could produce 26,606 tons of battery-grade lithium over a 17-year mine life.
The company expects to begin processing lithium carbonate by 2023, and its president, Steffen Haber, believes the company will be one of the earliest junior miners into the market, especially among those looking in Canada.

Haber said he’s not concerned about a lithium bubble.

“The market is definitely short of lithium and everyone is expecting that demand is catching up faster than supply can follow,” he said. “Even if you add up all of these newcomers, it means you are just adding up to the demand, but it takes much longer and costs much more than most people think to start up.”

But Paul Robinson, director at consultancy CRU Group, believes lithium “isn’t all that rare in the first place” and the hype around it is similar to that around rare earths and vanadium in past cycles.

He predicts consolidation ahead, as well as several failed projects. He adds there is little potential upside for prices since the surge in demand has been met with equally aggressive growth in supply.

The danger of the lithium market, he said, is that investors are making the mistake of equating strong demand growth to high prices, he said, pointing out the strong demand for rare earths and vanadium did not equal high prices for long.

“With lithium our concern isn’t demand — demand will be strong — our concern is that there will be too much supply,” he said.

“At some point, we will end up with a more mature market. The question is how far prices have to fall before some of the froth on that junior side goes away.”

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