

SPECIAL RESEARCH REPORT

SOUTH AMERICA'S NEW WHITE POWDER EXPORT

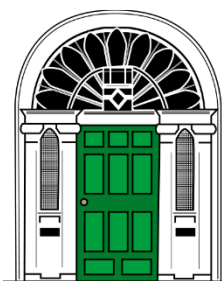


**USING LITHIUM TO
SUPERCHARGE YOUR
RETIREMENT SAVINGS**



**LAHARDAN
FINANCIAL**

By Leon Wilfan



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How To Profit In The Age Of Lithium

High up in the Andes, companies are battling over a white powdery substance that is fast becoming the most important export of South America.

It's a land grab the likes of which haven't been seen since the 60s and 70s when the petroleum industry giants rounded in on the Middle East.

Just like then, this resource is hiding deep below the desert floor. But it is not oil, even though the impact it will have on humanity is comparable.

The industrial revolution would have been impossible without oil, and so, too, is the digital revolution impossible without this critical substance.

I am talking about lithium.



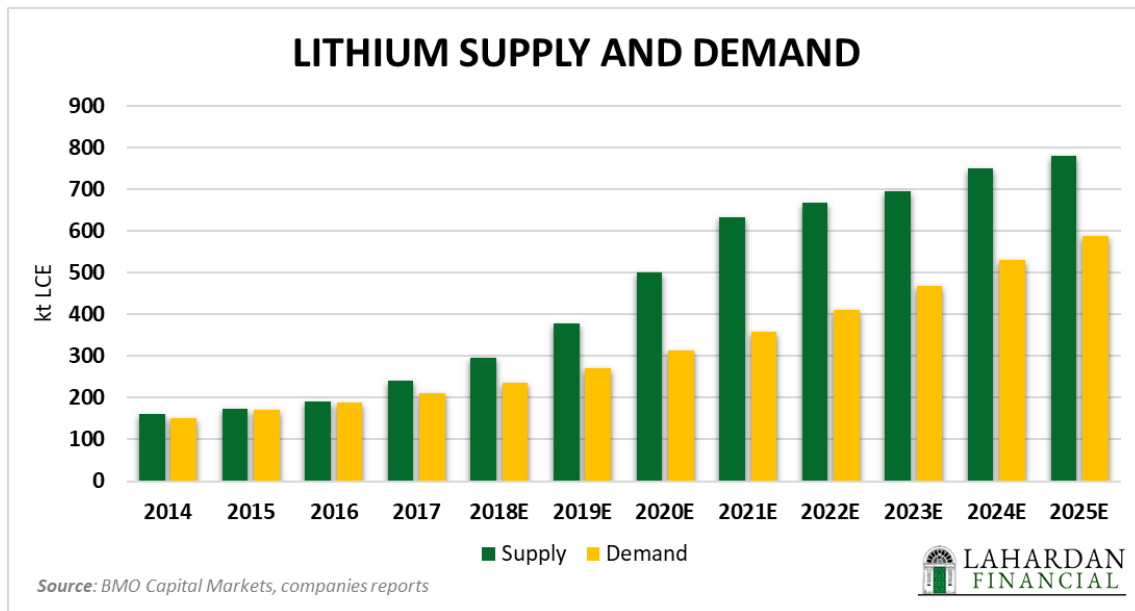
Lithium, once primarily used for the production of atomic bombs, has found a new purpose: to help humanity thrive—not destroy it.

With the capacity to store elusive electric power, it is the single most crucial element in the next step of our technological revolution.

Lithium Demand

The lithium industry is in a period of rapid development. The price and scale of lithium-ion (Li-ion) technology have revolutionized the way we look at our future. Our modern lifestyle already depends on the use of electronic devices, and ever more of our gadgets need lithium-ion batteries to power them. In 2017, rechargeable lithium-ion batteries represented 43% of all lithium demand.

Traditionally, demand for such batteries came from the electronics industry, but this has changed. Demand from traditional sources is still rising, but electric vehicles have been the driving force behind demand growth over the last few years.

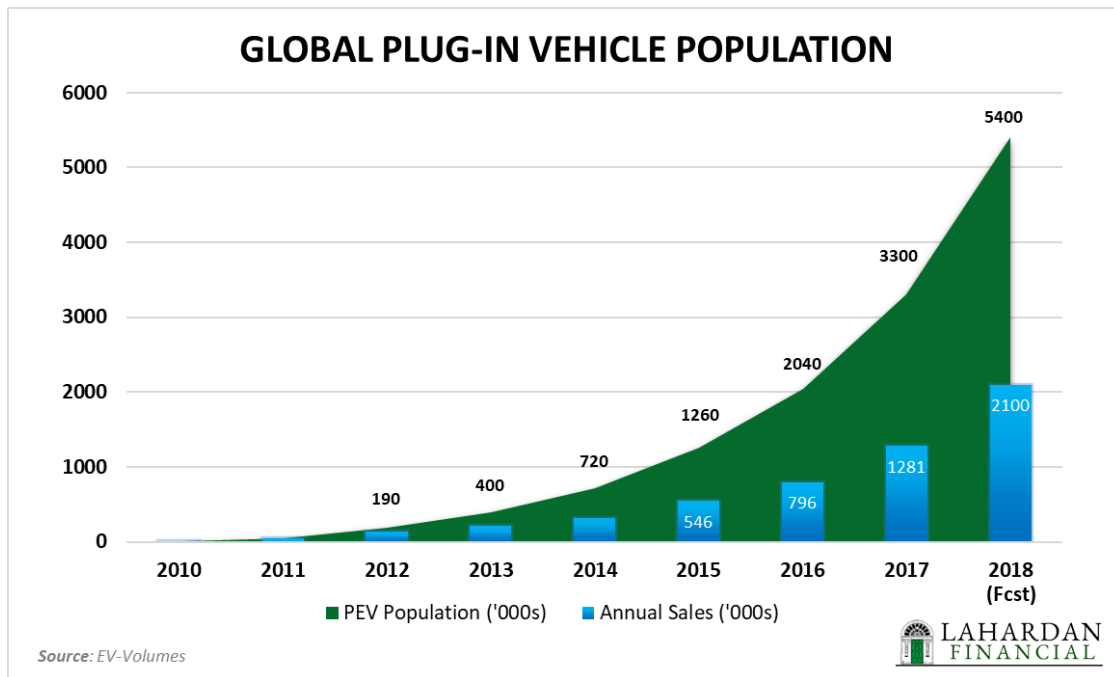


Moreover, a new rapidly rising source of demand is emerging: large battery energy storage systems (BESS). BESSs are essential for the functioning of renewable energy sources. This has analysts convinced that the demand for rechargeable batteries will increase 379% by 2025, at which point it will represent 75% of all lithium demand.

EV Demand

The growing use of Li-ion batteries by the automotive industry, both for hybrid and fully electric vehicles, has made the electric-vehicle sector the most significant influencer on the lithium industry. Demand for lithium for automotive applications reached more than 34,000t LCE (lithium carbonate equivalent) in 2017 and is forecasted to more than double by 2020.

In the first half of 2018 alone, global EV sales have gone up by 66% compared to the first half of 2017. China leads the pack, with an increase of 105%. The second biggest economy also leads in sales, with 394,000 EVs sold, compared to Europe's 195,000, and the United States' 122,000.



The increased growth comes is partially due to lower EV prices and improved battery efficiency. The more important cause is government intervention.

Policies surrounding carbon emissions are becoming ever stricter. In China, several cities imposed oil-and-gas vehicle restrictions to battle rampant pollution. These six cities now represent a whopping 21% of all electric vehicle sales in the world. It's no wonder why Tesla is opening production in Shanghai to seize this opportunity. The initiative is so popular, the Chinese government pledged to ban sales of new gasoline and diesel vehicles across the nation by 2040.

The rest of the world isn't too different. Most of Europe is planning to ban new fossil-fuel vehicle sales by 2030 as is, surprisingly, India. Norway, where EV sales already represent 45% of the market, has the most aggressive policy, wanting to entirely ban carbon-emitting vehicles from their roads by 2025.

The States has been lagging with its promise, the current administration not particularly interested in the carbon-emissions problem. Nonetheless, cities like Los Angeles and Seattle have promised to ban new carbon-emitting vehicle sales by 2030 and to have only electric buses on the roads by 2025. Even with the current administration's attitude towards carbon restrictions, some studies suggest that 90% of all vehicles in the United States will be electric by the early 2040s.

And it's not just cars that are coming on the market. In November 2017, Tesla unveiled Tesla Semi, an all-electric battery-powered semi-trailer truck with a 500-mile range. Tesla plans to start producing it in 2019. Daimler, the German automotive giant, also announced the production of two new electric trucks for the U.S. market to rival Tesla's Semi. These all-electric battery-powered semi-trucks will need about 10 to 16 times more batteries than an electric car.



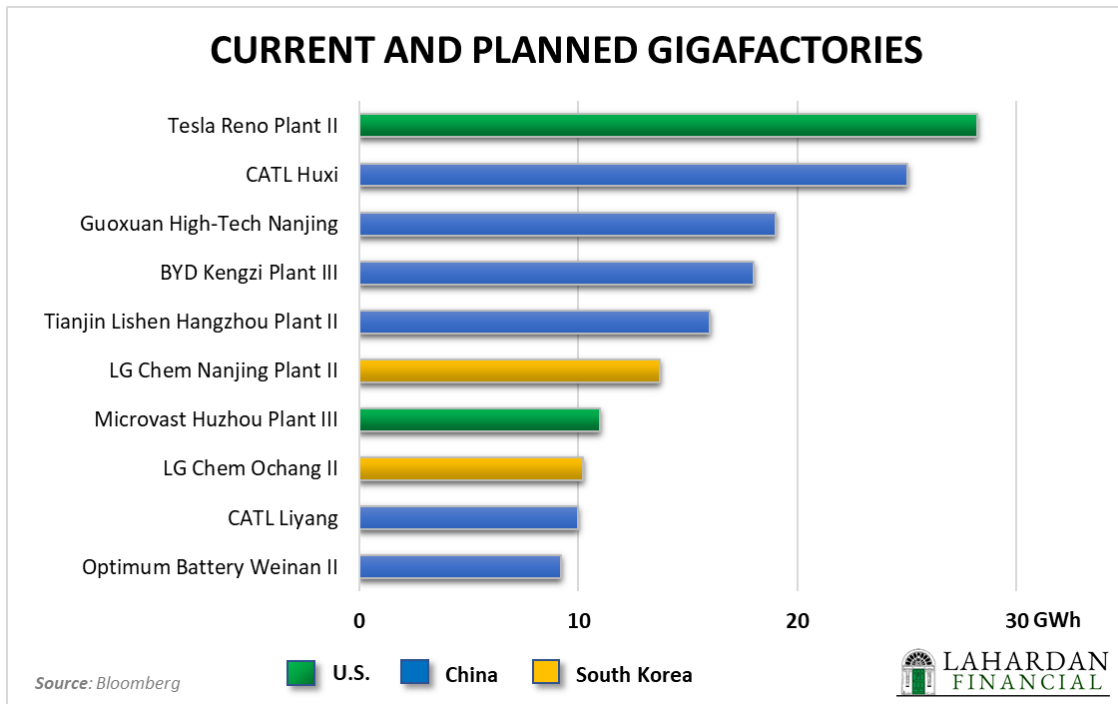
Cities around the world are investing in electric bus fleets as they look to reduce pollution and curb reliance on fuel-price fluctuations

Furthermore, the number of electric buses in the world will more than triple by 2025, at which point every second bus in service will be electric.

Even maritime vessels are going green. Sweden is converting two massive ferries to be fully battery-powered, while China has already launched a battery-powered cargo ship with a 2,000-ton capacity.

Gigafactories

For those still doubting that EV will take hold, I suggest looking at the number of gigafactories coming online. Gigafactories are factories producing lithium-ion batteries in capacities exceeding 1 gigawatt-hour (GWh) per year. The United States has one gigafactory, but it is by far the largest one that exists. China has five, with two new ones going online by 2020 and others expanding their capacity. Europe, behind the curve with only two gigafactories producing around 11 GWh, is building seven new gigafactories that will boost its capacity.



In terms of planned and existing battery production capacity, China leads the pack at 217.2 GWh. In the second place is the United States with 46.9 GWh capacity, followed by South Korea at 23.1 GWh, Japan at 14 GWh, and the EU (including the U.K.) at 11 GWh.

BESS

Then there are battery energy storage systems (BESSs). Gigafactories are not building batteries exclusively for electric vehicles. BESSs need them as well. Renewable energy sources are increasing their share of the modern power grid. Because of their nature, they can't produce a steady supply of power, leading to fluctuating power injections, so they need a battery storage system to balance the power supply.



Tesla's Hornsdale Power Reserve is the world's largest lithium-ion battery
(Source: Hornsdale Power Reserve)

Large-scale BESSs are already being deployed around the world, the most famous one being Tesla's Hornsdale Power Reserve in South Australia. The state produces 40% of its electricity from wind; the new BESS will help stabilize the grid and provide energy when the wind dies down. Compared to the time the state would have taken to build a conventional peaking generation plant, the speed at which Tesla installed the BESS was much faster.

Solid State Batteries

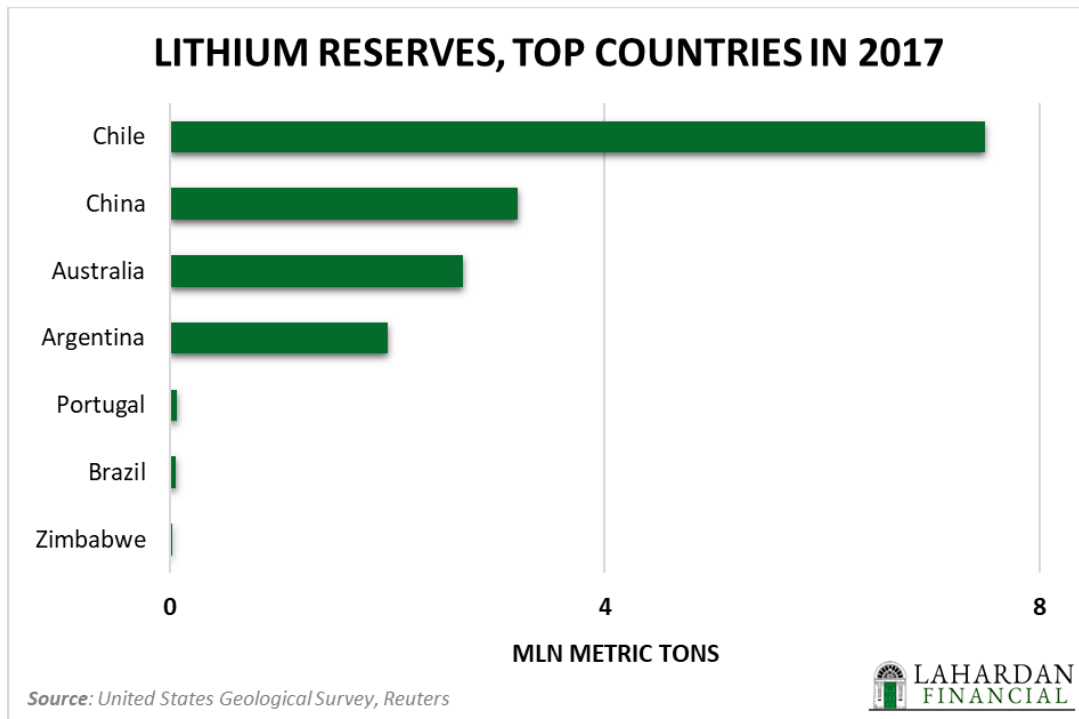
The most probable breakthrough in battery technology is solid-state batteries. They are called solid-state because they don't contain liquid parts, like today's batteries, which can leak or catch fire. Thus, solid-state batteries don't need cooling, making them safer, more reliable, and longer lasting than modern batteries. They are also more compact and free of harmful, toxic substances.

Solid-state batteries are still in the research and development phase and are at least five to seven years away from becoming commercially viable. If they do, it will be great news for the lithium industry, as they require around 20% more lithium than the traditional battery models.

Reserves

There are about 40 million tons of lithium reserves in the world, which, at current demand, should last for about 360 years. Add the increased demand coming online over the next decade, and that quickly falls to less than 100 years.

Chile holds the most reserves at 7.5 million metric tons. China is second with 3.2 million metric tons, Australia third with 2.7 million metric tons, and Argentina fourth with 2 million metric tons. The rest is scattered all over the world.



Of those reserves, the ones in the Atacama Desert are the most easily obtained. An area known as the lithium triangle spans across Chile and some parts of Argentina and Bolivia. As most of the desert belongs to Chile, the country is critical in the lithium supply chain. In a way, Chile is the Saudi Arabia of the future.

Producers

While Chile would be the obvious candidate for the top producing country, that's not the case. In 2017, first place belonged to Australia, which produced 18,700 metric tons (MT). In second place was Chile, producing 14,100 MT, third was Argentina with 5,500 MT, and fourth was China with 3,000 MT.

Chile is lagging because political discussions about who could mine and how much have hindered producers from developing their mines. This has now changed. In 2018, the Chilean government struck a deal with the miners in the Atacama Desert that has spurred production.

Mining Lithium

Many different minerals contain lithium, but brine and pegmatites (hard-rock) are the richest sources that interest miners most.

You can find pegmatites throughout the world, but those containing lithium are rare, less than 1%. Spodumene pegmatite is the most common lithium hard-rock mineral and is mostly found in Western Australia (WA). Currently, there are six operational mines in the region, with three more in the exploration stage. Before the emergence of brine extraction, hard-rock mines in WA used to be the primary source for lithium metal.



Lithium-rich brines in the Atacama Desert are the answer to rising lithium demand. They are widespread, highly scalable, and have lower production costs. Unlike the typical mining process used in hard-rock mining, lithium-rich brine is pumped to the surface, exposed to the sun, and through the natural process of solar evaporation, distilled into lithium compounds. Brines are about 50% more cost-effective than hard-rock, though they generally require higher up-front costs.

Fears Of Oversupply

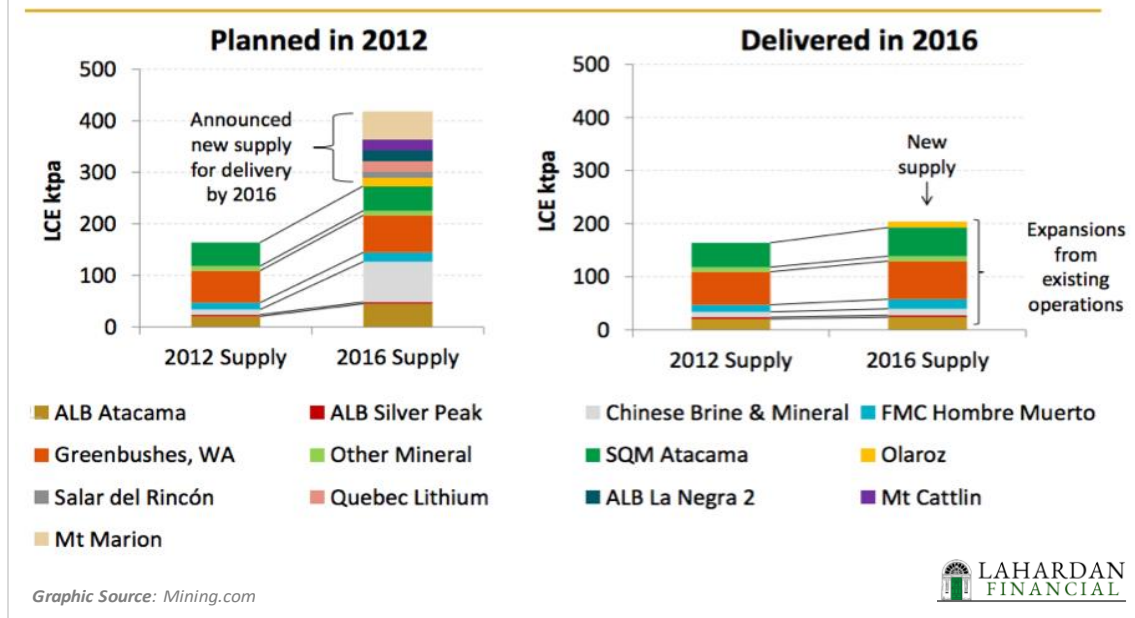
At the beginning of 2018, Morgan Stanley released a report saying that lithium prices will fall 45% by 2021 because of oversupply. The report caused lithium stocks to decline and frightened many investors from what could be one of the best opportunities on the market.

However, Morgan Stanley's report was exaggerated; it grossly underestimated demand while overestimating supply. The report clearly missed pricing in demand from renewable energy sources. Morgan Stanley claims that SQM and Albemarle alone, the two largest lithium producers, could produce 200,000 tons per year of LCE (lithium carbonate equivalent) by 2025, which would suffocate the market. What they didn't say is that, by 2025, global renewable energy sources will need *2.5 million* tons of LCE to store all the energy they expect to produce.

The report also assumes that all planned mines are going to come online as predicted. That's never the case—in any industry—and it certainly isn't the case with lithium.

In 2012, several new mines had been projected to come online by 2016, which was supposed to increase production by around 160%. Only one came online, boosting output by barely 30%.

WHAT IS EXPECTED IS NOT ALWAYS DELIVERED



Strategic partners, those buying lithium, finance a lot of new mines to ensure a steady supply at a low price. If all the new material is already going somewhere, then it's difficult to make the case for potential oversupply.

The Price Is Right

You have to understand that, when talking about lithium prices, lithium is not a commodity like oil or platinum, for example. It comes in many different forms, and thus cannot be traded on a futures market.

Lithium was traditionally produced as lithium carbonate, but recently demand for a premium-grade lithium hydroxide has been growing. Each of these has a different price, and even within the compounds there are different grades.

In a way, it's similar to the iron ore market, where high-grade material has a lot of demand, while low-grade material suffers from oversupply. On top of all that, the prices fluctuate differently in different parts of the world. Prices in China recently dropped while they stayed the same in the rest of the world.

Demand for lithium is rising, but so is production capacity. Prices will stay relatively the same over the next decade, with periods of small over- or

undersupply, depending on when new material comes online. One thing that's going to increase is sales volumes, which is why I am so bullish on lithium miners.

The lack of futures contracts makes it difficult for buyers as well as producers to hedge their positions against fluctuating prices. Battery and EV manufacturers' only solution is to secure long-term contracts with lithium producers. From an investment standpoint, this is better because you can predict future cash flows with greater ease.

Top Players

The largest two lithium-producing companies in the world are SQM and Albemarle. They are both diversified companies, active in other businesses besides lithium. They have lithium operations in Australia and, most importantly, in the Atacama Desert, where they own the majority of the assets. They also have a significant advantage over the smaller players in that they can meet the increasing demand and are likely to be the ones securing big deals with the electric vehicle and battery manufacturers.

The main differences between the two are production capacity and quality of reserves.

Albemarle currently leads in production capacity, as it already has an operational mine in Australia, while SQM's Australian mine is still under development. However, once it comes online, SQM's capacity will be about 75% larger than Albemarle's.

Second, SQM is the most cost-effective lithium producer on the market. They control the best lithium deposits in the lithium triangle and can produce LCE at \$3,000 a ton. The cost of production at their Australian mines, for example, is about \$6,000 a ton, while other companies operating in the lithium triangle produce it at about \$3,500 a ton. At those costs, lithium prices can drop quite a bit, especially considering that SQM sold its lithium at an average price of \$16,400 per ton in the first quarter of 2018.

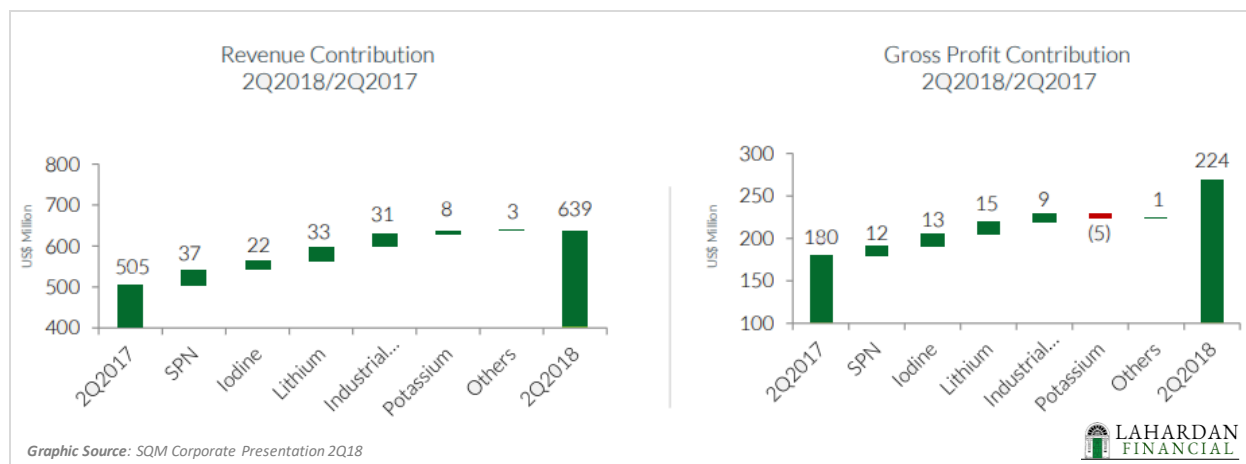
Battery and EV producers are looking for established suppliers with a history of producing high-quality battery-grade chemicals. With the largest production capacity, access to the highest-quality deposits, and lowest costs, I do not doubt that SQM will be able to get major deals.

SQM (Sociedad Química y Minera)

SQM is a Chilean globally diversified company operating in strategic sectors needed for further development of humankind such as food, health, and green energy.

SQM divides its business into five segments: potassium, specialty plant nutrients, iodine & derivatives, industrial chemicals, and most importantly, lithium & derivatives.

Lithium & derivatives are the best performing segment, representing 30% of revenues, 56% of profits, with a 23% market share. Specialty plant nutrients are second, contributing 36% to revenues and 20% to profit. This segment focuses on producing potassium nitrate, where SQM leads the global market with a market share of 54%. Iodine & derivatives are the third largest segment, representing 14% of revenues, 13% of profits, with a 35% market share. The other two segments are less critical. Combined, they contribute only 18% to revenues and 9% to profits.



The company has a diversified lithium portfolio, with projects both in Chile and in Australia.

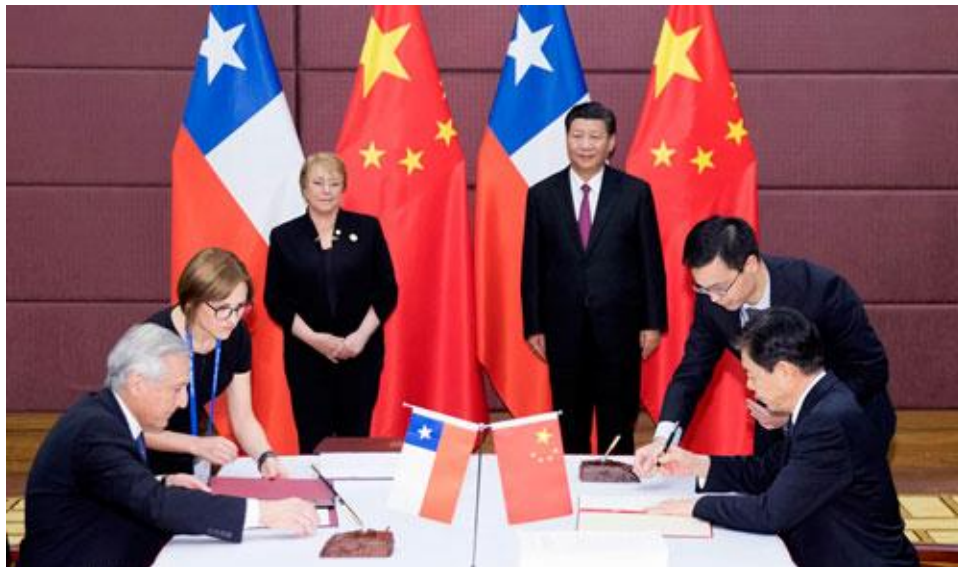
The Chile project is located in Salar de Atacama, the most lithium rich place in the world. For a while, CORFO, a Chilean governmental organization responsible for production development, has been blocking the expansion of lithium projects in the area. This changed in 2018. In the early months of the year, SQM signed a new lease agreement with CORFU, allowing it to expand its production quota by 154%. The current capacity to produce lithium carbonate will increase from 70,000 MTPY (metric tons per year) to 180,000 MTPY by 2021, while the capacity to

produce lithium hydroxide will increase from 6,000 MTPY to 13,500 MTPY by the end of 2018.

In 2017, SQM entered a 50:50 joint venture with Kidman Resources, an Australian lithium miner, to begin mining for lithium in the spodumene-rich Mount Holland area of Western Australia. The project is still in the development phase. Once completed, it will focus on the production of lithium hydroxide, producing 45,000 MTPY starting in 2021.

Politics

Another thing that makes this company interesting is the China-Chile Free Trade Agreement. Chile considers lithium to be a strategic source, essential for future economic prosperity. Lithium exports are rising, and are already Chile's fourth largest mining export. China needs green energy and electric vehicles to battle pollution and has large battery production capacity. In the midst of it all is SQM, a Chilean company. It's like the Saudi Aramco of lithium, except it's traded on a stock exchange.



President Michelle Bachelet of Chile and President Xi Jinping attend the signing ceremony to upgrade the China-Chile Free Trade Agreement (FTA).

(Source: News.CN)

And it's not just China. Chile has a free trade agreement with all four of the largest battery producers, China, the United States, South Korea, and Japan. Moreover, talks about a free trade agreement with the EU, the fifth largest producer, are underway. This makes Chile, the cheapest place to import lithium from.

Recent news reports about indigenous peoples' water rights in the Atacama have been circulating, but I don't think this will hinder production in any way. SQM holds less than 4% of all water rights in the Salar, which is well within regulator's limits.

Fundamentals

| Stock | | | |
|---------------------------|---------|--------|--------|
| COMPANY | COUNTRY | TICKER | MARKET |
| Sociedad Química y Minera | Chile | SQM | NYSE |

| Earnings and Revenue | | | |
|----------------------|---------------------|----------------------|-----------------------------|
| 5-YR AVG EPS GROWTH | 5-YR AVG REV GROWTH | EARNINGS YIELD (TTM) | HIST. GROSS MARGIN ANALYSIS |
| 22.01% | 0.87% | 4.21% | PASS |

| Dividends | | |
|----------------|----------------------------------|--|
| DIVIDEND YIELD | POS. AVG. FCF FOR PREVIOUS 5 YRS | CONSISTENTLY PAID DIVIDENDS FOR PREVIOUS 5 YRS |
| 5.22% | PASS | PASS |

| Debt | | |
|----------------|---------------------|--------------------------------|
| DEBT TO EQUITY | CURRENT RATIO (QTR) | TIME NEEDED TO PAY OFF LT DEBT |
| 58.94% | 4.34 | 3 YRS, 7 MTHS |

| Value | | |
|------------------|---------------------|------------------------------------|
| 5-YR AVG. R.O.E. | PRICE TO BOOK VALUE | 5-YR AVG BK VALUE PER SHARE GROWTH |
| 14.13% | 4.91 | -2.13% |

Closer inspection of revenue growth shows that the average value is low because revenues were falling in 2014, 2015, and 2016, but have been growing the last two years with 2018 second-quarter growth at 26.41%.

Dividends are secured.

Debt is sustainable, even with a high debt-to-equity ratio. Having a lot of debt on the balance sheets is quite common among mining companies, as they invest large sums into new operations, which then generate cash flow for years.

The company is neither over- nor undervalued. You get a decent return for an average price. The negative book value per share is barely in the negative territory, so I wouldn't worry about it.

Trigger Price

| Recommendation |
|------------------------------|
| TRIGGER PRICE (BUY UP TO) |
| \$50.00 / SHARE |

SQM has been on a bit of a downtrend since topping the market in January 2018. Three forces are pushing it down. The most important one is slowing GDP growth in China. Second is the spill-off effect of slowing tech-stock prices in the United States. Third is fear of lithium oversupply. I welcome the correction because the price nearly quintupled in the two years following the summer 2015 lows.

I think the price will stabilize at about \$35 to \$45, but, at this point, I'm still waiting for a reversal pattern signaling the trend has changed. Especially because the fundamentals pushing the price down haven't changed, though they do seem to be losing their power.

If I get a reversal signal at \$35 to \$45 levels, I'll be looking to buy up to \$50 per share.

SQM trades on the New York Stock Exchange (NYSE).

MSFTs Score

| |
|----------------------|
| MSFTs System |
| MISFITS SCORE |
| 9 |

I took half a point away because the stock is not undervalued. I also took half a point away because I do not see a clear entry signal at this point.

Happy investing,

Leon Wilfan

About The Author

Leon Wilfan is the Chief Investment Strategist for Lahardan Financial.



Leon is also the Senior Editor of *True Retirement Wealth*, a monthly advisory service leveraging Leon's time-tested stock-picking system, as well as his expert market timing to keep you in the best stocks at the right times.

Leon grew up in a family where investment education was mandatory. Even as a kid, he was encouraged to read Robert Kiyosaki, Jim Rogers, Marc Faber, Frank Partnoy, etc.

In his early 20s, Leon started a career in real estate, working alongside his father to learn the principles of value investing. After five years, he took a break from his career to pursue an MBA degree at the prestigious Vienna University of Economics and Business. Vienna University is the birthplace of the Austrian Economic Theory, a way of thinking that explains that the reality of economics cannot be captured by mathematical models, but rather by the behavior of individuals on the market.

Looking for new challenges, in 2016 Leon moved to the fastest-growing region in the world, Southeast Asia. In Singapore, he was fortunate to work for a blockchain startup. He quickly realized the potential of investing in cryptocurrencies—and managed to get in just before the mania started.

As an active Forex trader, Leon is also fluent in technical analysis and price action trading.

Leon's investment approach is geared toward low-risk, high-reward opportunities. Through years of experience, he's developed a four-step approach he uses to find undervalued stocks... or, as he likes to call them, MSFTs (misfits):

M is for macro conditions (in which direction are the macro forces moving the markets?); S for sector potential (which market sectors are best positioned to

benefit from the underlying macro conditions?); F for fundamentals (because Leon only picks healthy stocks with high intrinsic value); T for trigger (a price action signal telling exactly when to enter a trade).

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