

The U.S. Has a Battery Problem in the Race for Electric Car Supremacy

Laura Millan Lombrana and Joe Deaux - 30 April 2019

The U.S. push to challenge China's dominance in the production and sale of electric vehicles has at least one weak link: Most of the raw materials needed to make the batteries are dug elsewhere.

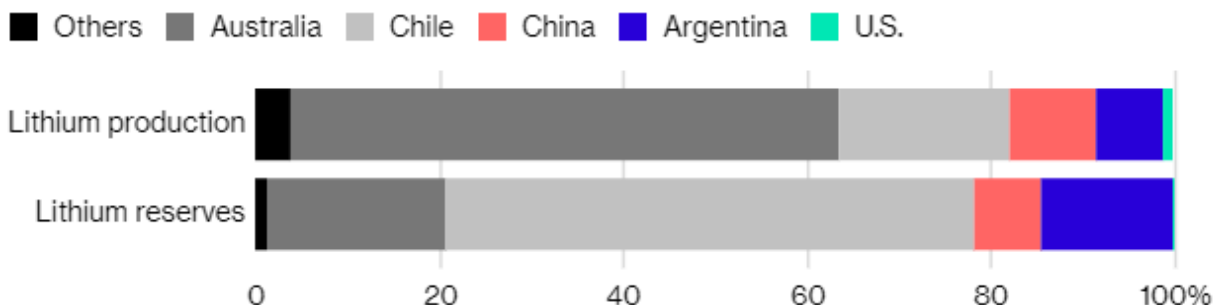
Both Chinese and U.S.-based companies have invested heavily in lithium mining projects in Chile, Australia and Argentina, some of the world's top producing nations. But unlike the U.S., Chinese companies have also invested at home, with the Asian nation producing almost eight times more lithium domestically than the U.S.

The raw materials gap will be discussed at a May 2 meeting in Washington expected to draw government officials, carmakers, mining companies and consultants on the need for streamlining the U.S. permit process for new lithium projects and stockpiling purchases.

"It has been decades since a lithium refining facility has been built in the United States," said Eric Norris, the lithium president of North Carolina-based [Albemarle Corp.](#), the world's largest producer of the mineral. "Any new project will take time to develop, as the regulatory bodies determine required permits, potential community impact, etc."

Anecdotal Production

The U.S. produces only 1.2% of the world's lithium



Source: USGS, Bloomberg Intelligence

Boosting local production of the raw minerals would be the first step toward building out a rechargeable battery industry that's so far been concentrated in Asia. The U.S. controls only about 13 percent of the global lithium cell production capacity, with no growth expected, according to [BloombergNEF](#). China now controls about two-thirds of that industry and BNEF is forecasting it could grow to about 73 percent by 2021.

The difference is already showing up in sales. About half of the world's electric vehicles are sold in China, a figure that's on the rise. Sales jumped by 150 percent during the first quarter of 2018, compared with the previous year, according to BNEF.

"You can't build half a million electric vehicle battery packs without a secure supply of several critical raw materials," said Chris Berry, a battery-metals analyst at House Mountain Partners. "If the U.S. lags in the build out of lithium or cathode capacity, its supply chain dynamism and competitiveness around the new energy theme is put at risk."

China's [Jiangxi Ganfeng Lithium Co.](#) acquired 37.5 percent of the Cauchari-Olaroz lithium project in Argentina, which is set to start producing in 2021. Tianqi Lithium Corp. paid \$4 billion for a 24 percent stake in Soc. Quimica & Minera de Chile and the same company is part of the [Talisson](#) joint venture, which controls the giant Greenbushes lithium mine in Australia.

The metals needed in making rechargeable batteries used in everything from Teslas to energy storage to iPhones, include graphite, manganese, nickel, cobalt and lithium. The U.S. imports at least half of each of those metal requirements, according to the U.S. Geological Survey.

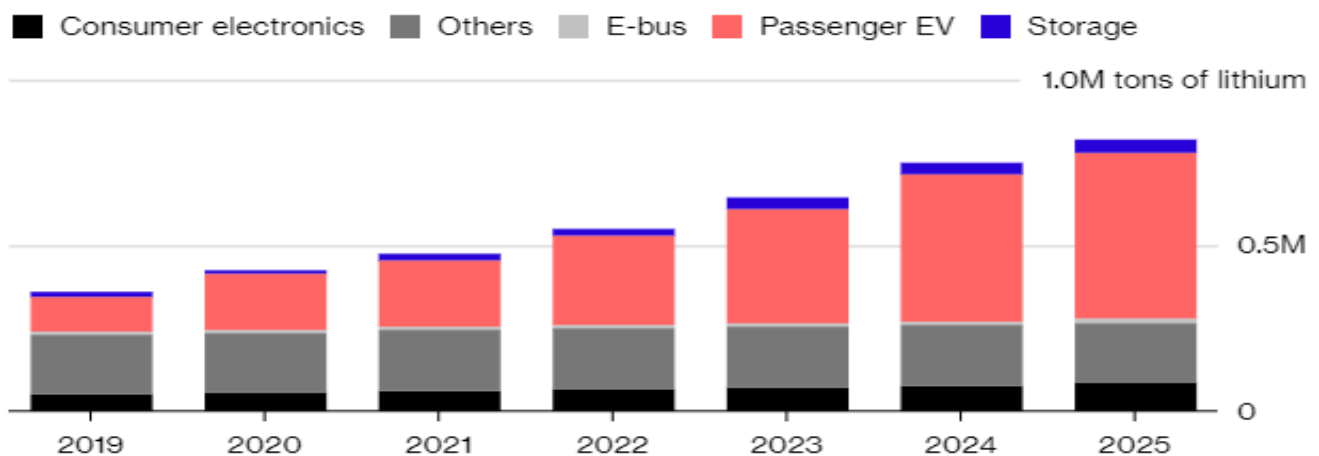
This week's meeting in Washington is hosted by [Benchmark Mineral Intelligence](#), an industry consultant that specializes in the lithium-ion battery supply chain. In testimony before the U.S. Congress in February, the firm's leader, Simon Moores, warned that the U.S. current role in the supply chain was being "outflanked" by China. Moores confirmed the meeting in an email. Albemarle will have representatives at the meeting in Washington, the company said.

"There's no reason why companies can't raise capital and build and operate lithium mines in the U.S," Berry said. "The permitting process can be somewhat longer in the US relative to other parts of the world, but with so much focus on sustainability and transparency of the supply chain, environmental safeguards are a must."

But with demand for lithium set to boom from above 300,000 tons a year to a million tons by 2025, mining companies need to grow fast and they prefer to do so in jurisdictions they know well. Albemarle, the only company producing lithium in the U.S., said in a written answer to questions it is focusing on expanding current operations in Australia and Chile.

Lithium Boom

Electric vehicle revolution will fuel global demand for the mineral



Source: Bloomberg NEF

It is too early to comment on viability or timing of an expansion at Silver Peak, a mine that produces 6,000 tons of lithium carbonate per year, Albemarle's Norris said. The company completed an exploration program at a hard rock site in Kings Mountain, but Norris described it as a long-term asset in very early stages of assessment.

No lithium mines are expected to start producing in the U.S. over the next three years and no substantial lithium production is set to hit global markets within the next five years, according to Bloomberg Intelligence chemicals analyst Christopher Perrella.

Still, some junior mining companies are looking to build new mines over the medium and long term. Vancouver-based Lithium Americas Corp is hoping to have permits approved for its Thacker Pass project in Nevada in 2020. Construction of the mine, with an initial annual capacity of 30,000 tons, could start next year if the company can raise the \$581 million needed to build it.

"The challenges are building it quick enough and attracting capital," said Chief Operating Officer Jonathan Evans. "If you look at a three to five year period from now, the market for electric vehicles and stationary storage batteries will be really growing, so it's key for the investment to come now."