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China's quest to steer the world's largest auto market away from combustion engines to a battery-powered future has triggered a new gold rush — lithium.  
For years, the silvery-white alkali metal has mainly been used in the manufacture of aircraft and in the treatment of bipolar disorder. But with the development of electric cars, smartphones, electric bicycles, and household solar storage, demand for lithium has increased dramatically.  
Some analysts are expecting demand for lithium — a key ingredient in lithium-ion batteries — could treble over the next decade, with much of that demand in China.  
In 2015, China overtook the United States to become the world's biggest market for electric cars, providing a huge domestic market for battery makers.  
China has set a goal of selling 2 million new-energy cars a year by 2020. The country has the world's largest number of electric vehicle (EV) manufacturers and the largest network of charging points.  
A total of 777,000 new-energy cars were sold in 2017, up 53.3 percent year-on-year, according to statistics from the China Association of Automobile Manufacturers. The new-energy category includes pure electric and plug-in gasoline-electric hybrids.  
"Lithium is coming of age in a big way. It is the core ingredient to 99 percent of electric vehicles and as a result, demand is going through the roof," Simon Moores told CNBC late last year. Moores is managing director at Benchmark Mineral Intelligence, a research and data provider specializing in the lithium-ion battery supply chain.  
He said demand for lithium had been "bubbling under the surface" for several years, before a renewed interest in electric cars about 18 months ago triggered a "desperate" global pursuit.  
Data from the US Geological Survey show the world's top lithium producers are doing their best to meet rising demand. Worldwide lithium production rose roughly 13 percent from 2016 to 2017, coming in at 43,000 metric tons last year. Australia was the biggest producer in 2017 with 18,700 tons; Chile 14,100 tons; Argentina 5,500 tons and China 3,000 tons.  
With society's expectations of longer lasting battery power for portable devices, and the increase in EVs, the demand for lithium has increased sharply, University of Western Australia research associate Tristan Clemons told China Daily.  
He said lithium is an integral component of the long life and rechargeable battery systems of EVs and solar power battery units.  
"Other competing technologies such as vanadium-based rechargeable batteries are also showing great promise, such as those developed by Australian Vanadium, an Australian-based company specializing in vanadium rechargeable batteries suitable for taking houses off the grid with solar," Clemons said.  
He said the demand for lithium will continue to increase with "better public uptake of electric vehicles, solar power and other intermittent renewable power sources which require efficient battery storage technologies".  
There are several factors underpinning China's EV plan, said Hugo Brennan, Asia analyst at Verisk Maplecroft, a global risk and strategic consulting firm.  
"Beijing sees it as a means to reduce the country's dependence on oil imports, tackle chronic air pollution, meet its (Paris Agreement) climate targets and create a poster child for the Made in China 2025 initiative to upgrade the manufacturing sector," he said in a report, China's Lithium Supply Chain Strategy.  
For China to bolster its supply of lithium, Beijing will likely pursue three strategic objectives in the coming years — namely, to develop its domestic lithium resources, diversify its lithium imports, and increase its influence over the global lithium value chain, according to Brennan.  
"The progress China makes toward furthering these goals will go a long way to determining to what extent it can meet its EV ambitions," he said.  
State Grid Corporation of China (SGCC) on March 9 forecast a 60 percent increase in EV sales in China, which already accounts for the lion's share of EVs worldwide.  
At CERAWeek, an annual energy conference organized in Houston, Texas, by analytics company IHS Markit, SGCC executive vice-president Wang Min was quoted by Xinhua as saying there were 3.2 million EVs around the world by the end of last year. More than half of them, or 1.7 million, were in China.  
"About 500,000 EVs are expected to be sold in the Chinese market in 2018, up 60 percent over 2017," Wang said.  
SGCC has built the world's largest Internet of Vehicles network in terms of coverage and number of devices, connecting 17 charging facility operators and providing access to about 170,000 charging piles, Wang told the gathering, as reported by Xinhua.  
Besides using cutting-edge technologies, such as big data and cloud computing, SGCC has also achieved universal plug-in and payment methods for most charging piles nationwide. EV owners can use a mobile app to locate nearby charging piles.  
The quick-charging facilities built by SGCC cover 150 cities across China and highways stretching 31,000 kilometers. Although China does mine lithium, it needs to secure much more if it is to meet its ambitious targets for electric cars.

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