

THE LITHIUM TRIANGLE

TO BE OR NOT TO BE SUCCESSFUL

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PATRICIA I. VÁSQUEZ¹

For the planet, South America's vast lithium resources are key to making possible the transition away from fossil fuels. For South America, the fast-evolving lithium industry and prospects of increasing global demand in coming decades has opened a new source of much-needed economic growth.

Yet the region's history of political and economic upheaval, and its tendency towards resource nationalism, could threaten supplies of the critical mineral. If that were to happen, it would impact not only the region's prospects for economic growth, but also the pace of the planet's transition away from fossil fuels. Another challenge for the industry is satisfying strong Chinese demand for battery metals without alienating the United States and Europe in the context of intensifying competition for critical minerals.

Three countries in South America—Bolivia, Chile, and Argentina—hold roughly 60% of the globe's largely untapped lithium resources. Bolivia alone has the largest deposits on the planet. Chile and Argentina are among a handful of countries fur-

nishing the world with lithium carbonate equivalent (LCE), a crucial input of the batteries that power electric vehicles and make possible the storage of renewable energy, such as wind and solar. Together, they produce some 35% of the world's lithium supply, an amount set to rise in coming years as ongoing project expansions in Chile and several greenfield ventures in Argentina come to life.

By some accounts, world lithium demand is expected to increase from 500,000 metric tonnes in 2021 to three to four million metric tonnes in 2030.¹ South America's lithium producing countries should have a promising future. However, increased government appetite for lithium revenues; environmental and social opposition to lithium extraction; changing laws and regulations; and new geopolitical tensions herald challenges for the "lithium triangle."

In Northern Chile's arid desert, the Atacama salt flat contains one of the world's largest brine deposits, with the highest concentration of lithium available. There, the world's two largest lithium compa-

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nies, US-based Albemarle and Chilean SQM, produce raw lithium and refine it to make the much sought-after high-quality LCE. It is these operations that have made Chile the world's second-largest producer of lithium, after Australia. Chile's lithium output has increased in recent years and both SQM and Albemarle's projects are expanding.

Yet Chilean output is expected to lag that of other producing nations in coming years, mainly due to lack of new investments. In fact, Chile's relative contribution to global lithium production is expected to decrease in coming years.² The country classifies lithium as a strategic resource, and only the state is allowed to develop it. Private investors need a special contract that sets specific operating conditions. These constraints have largely kept investors away. Added to that, Chile's lengthy attempts at constitutional reform, and the uncertainty that process has generated, also contributed to investor skepticism in recent years.

President Gabriel Boric announced a National Lithium Strategy in 2023, aimed at attracting investment and increasing production. The strategy calls for a greater role for state-owned companies, such as Codelco, through private-public partnerships, and for the creation of a national lithium company. The announcement

initially generated criticism at home and abroad because it was seen as a form of nationalization. In Chile, critics argued that a bigger role for the government could further disincentivize private investment. The future of Chile's lithium industry will become clearer as the government clarifies the role of the private sector under the new strategy.

In Bolivia, the Uyuni salt flat, located in the Potosí Department, is thought to contain the largest lithium resources in the world. It was from Potosí that the colonial Spanish empire obtained enormous amounts of silver from the Cerro Rico mountain. To tap its lithium resources, Bolivia created a state-owned lithium company in 2017, Yacimientos de Litio Boliviano (YLB). Six years later, and after government investments of close to \$1 billion, the country has produced relatively modest amounts of lithium.

Historically, Bolivia's political culture has been deeply polarized, due in large part to differences of opinion on how to manage the country's natural resources, which some believe have been pilfered by foreign interests since colonial times. The divide was deepened by the schism over former President Evo Morales's controversial presidency and the 2019 constitutional crisis that led to his expulsion from power. In 2003, popular resistance to exporting

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landlocked Bolivia's natural gas through neighboring Chile led to deadly confrontations and the resignation of then-President Gonzalo Sánchez de Lozada, in a conflict known as the "Gas Wars." Twenty years later, disgruntled Potosí citizens continue to protest, this time over the allocation of lithium royalties.³ In spite of its natural resource wealth, Potosí is one of the most impoverished regions in South America.

By contrast, Argentina's lithium industry has been receiving increased attention from investors, particularly from China. Project investment announcements from Chinese investors equaled \$2.7 billion between 2020 to 2023 in the lithium-rich provinces of Salta and Catamarca, according to official data.⁴ China is the world's largest producer of batteries used in electric vehicles and is looking to secure supplies of the critical minerals necessary to expand its dominance of low-carbon technologies.

In Argentina, China was the third-largest investor in lithium projects in 2021, after Canada and Australia, with approximately 26% of total spending. Chinese companies have acquired assets in almost a third of Argentina's lithium projects. It is expected that China's presence in Argentina's lithium sector will likely continue to expand in the coming years. Argentina's

hunger for new investments and China's need to secure supplies have been a successful match, particularly at a time when the United States and Europe have shown a relatively more passive approach to the region's lithium industry. That said, the arrival of newly elected pro-business President Javier Milei last December may attract Western investors who have been skeptical of the country's recurrent social and political volatility and frequent economic crises.

Chinese lithium investors are also present in Chile and Bolivia. Chinese Tianqi Lithium acquired a 24% stake in Chile's SQM in 2018.⁵ In Bolivia, four of six firms short-listed to develop the country's lithium resources are from China. (Another is Russian and one is from the United States.⁶ Russia is the biggest purchaser of Bolivia's small lithium production).

South America's lithium is becoming an important geopolitical asset, as countries compete to develop the low-carbon technologies of the future. Like China, the United States and European countries are also racing to secure lithium supplies to address climate change and support strategic industries. The Biden administration's Inflation Reduction Act (IRA) establishes that by 2026, 80% of the lithium used in US-manufactured electric vehicles should be produced domestically or in countries

that hold a free trade agreement with the United States, such as Chile, Mexico, and Peru. That list does not include Argentina, the main lithium supplier to the United States.⁷

This report, the second in a series, will address these and other issues relevant to Latin America's lithium industry and its role in regional economic development and for driving the global energy transition. It includes three analytical essays. The first is by Juliana González Jáuregui, Coordinator of the China Studies Department at Flacso Argentina. She writes about China's increasing presence in Argentina's lithium industry and the unique characteristics of its investment mechanisms. The second essay is by Ricardo Becker Toro, former Cabinet Chief at Chile's Mining Ministry between 2021 and March 2022. He analyzes Chile's potential for expanding its lithium sector, with a focus on institutional, political, and environmental and social challenges. The third essay is by Diego Von Vacano, Professor, Texas A&M University, Bush School of Government and Public Service, Department of Political Science. He examines the sociopolitical factors that have prevented Bolivia from developing its vast lithium resources.

ENDNOTES

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- 4 Secretaría de Minería, "*Participación de capitales chinos en Argentina*," Dirección Nacional de Promoción y Economía Minera, Secretaría de Minería, Ministerio de Economía de la República Argentina, August 2023.
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- 7 U.S. Geological Survey (USGS), "Lithium," Mineral Commodities Summary, January 2023.



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