

# Lithium: A Promising Future for Three South American Countries



**Marcelo Neuman\***

*National University of General Sarmiento, Argentina*

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**\*Corresponding author:** Marcelo Neuman, Institute of Industry, National University of General Sarmiento, Argentina

## Abstract

Around the middle of the Andes Mountains lies what is known as the "Lithium Triangle". This region comprising three countries is home to salt flats with enormous lithium reserves. This abundance attracts the attention of large international mining companies, which have been increasingly investing in the area. But along with upstream mining activities the three countries want to take advantage of their lithium resources for implementing high technological downstream activities such as the manufacture of lithium batteries for electric vehicles. This paper briefly describes the regulations of lithium in each country and how they place a challenge for cooperating to pursue with greater degree of success the implementation of value-added activities.

**Keywords:** Lithium; Regulations; Mining Companies

## Introduction

Argentina, Bolivia, and Chile hold two thirds of the world's proven reserves of lithium and half of the current offer of this strategic metal. The proven reserves are in northwest Argentina, southern Bolivia, and northeast Chile; a region which is known as the "Lithium Triangle". Recently, the three countries started to have talks to unite forces for negotiating with the large multinational mining companies which are already exploiting this mineral and others that hold important investment projects for this region. However, the potential cooperation between these countries for taking as much as possible advantage of their strategic resource are still only at the beginning and must overcome many obstacles to light up a solid collaboration.

An important obstacle is presented by the different institutional frameworks within these countries that regulate mining investment, especially in Argentina where the natural resources belong to the provinces and not to the Federal Government. In addition to this particularity on resource ownerships this country has low level of royalties and does not apply specific taxes on the revenues of the mining companies. Chile, on the other hand, has legally declared lithium a strategic mineral resource and the new government that took office last March 2022 has announced the creation of a lithium national company.

The objective of the future state mining company is to work in partnership with the private international mining companies but holding most of the shares. Bolivia's intervention on lithium

went one step further nationalizing all its lithium resources. Apart from the complication of the diverse institutional framework, the three countries have different levels of industrialization, which has certain influence over investments. While Argentina has an intermediate level of industrialization, Chile and Bolivia show a relative lack of industries. This circumstance prevents them from generating local supplier development policies for the mining sector, a policy that Argentina is pursuing to strengthen its supplier base.

International mining companies are developing projects to produce lithium carbonate from brines in the three countries, some companies are already producing and exporting this concentrate and many others are undertaking feasibility studies and discussing investment projects with the government authorities. The different institutional framework of the three countries encourages competition when seeking investment for extracting this valuable and promising alkali metal. However, the reserves are massive and there seems to be room for every country to keep growing in their production of lithium carbonate.

The price signal is auspicious, lithium carbonate increased by 58% in 2021 and in the first five months of 2022 it rose 400%. Though, when considering the mine production of lithium these South American countries still fall short regarding the world's largest producer country, Australia. The island continent recorded just above 55% of world's mine production of lithium in 2021,

followed by Chile with 26%, and by China and Argentina with 14% and 6% respectively. Together, these four countries accounted for more than 95% of last year's lithium production.

In an event on energy held last May in Buenos Aires the panel composed by the mining companies exploiting lithium stated that in the next following year the world's demand for this metal will increase by more than 500%. The event was organized by the Energy and Sustainability Program of the Institute of the Americas and was sponsored by the large Oil & Gas, and mining companies with investments in this region. The expected surge in the demand of lithium relates to the frequent announcements of new investments in upstream mining activities that can be read in the newspapers and industry journals. But then as we know, brine mining of lithium and the production process to obtain lithium carbonate have low technological content. Instead, much more benefits from lithium can be acquired by the application of high technological activities in the downstream process, especially in

all the steps involving the manufacturing of lithium batteries.

These countries are aware of the value of the downstream activities involving the use of lithium and each of them is making its own moves to pursue this objective. The main instrument for promoting the use of lithium locally is the signature of Memorandums of Understanding with the mining companies or car manufacturers to install technological development centers and battery making activities. But then again, the installation of factories to manufacture car lithium batteries is a complex process and requires economies of scale, coordination with government agencies, technological preparation, and incentives among other important aspects. Therefore, to maximize the degree of success for installing lithium car batteries the three countries must overcome the obstacles and cooperate with each other by developing a favorable investment environment to track these high technological investments.



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