OBSERVARE
Universidade Autónoma de Lisboa
e-ISSN: 1647-7251
VOL. 17, Nº. 2
November 2026-April 2027

JANUS.NET
e-journal of International Relations

THE GEOECONOMICS OF MINERALS IN THE ENERGY TRANSITION: THE CASE OF LITHIUM IN ARGENTINA

LORETO CORREA VERA
loretocorreav@gmail.com
PhD in History of International Relations from the San Pablo CEU University of Madrid, a Master in Latin American History from the International University of Andalusia. Graduated and Master in History from the University of Chile. Graduate of the Doctoral program: "Latin America, Spain and the European Community: Integration, Cooperation and Development", a program taught by CEDEAL and the Complutense University of Madrid where she received a two-year scholarship from the government of Spain. She is a Professor at the National Academy of Political and Strategic Studies of Chile (Chile). Her experience as a historian and expert in international relations focuses on problems in foreign policy, security and defense. https://orcid.org/0000-0003-2051-1548

PAOLA ANDREA BARONI
paolaandreabaroni@gmail.com
PhD in International Relations (National University of Rosario). She specializes in India and its links with Argentina, South America and the Global South. Her work also covers topics related to international politics, India, China and Southeast Asia, and their links with South America. She was Director of the International Relations, Political Science and Sociology programs at Universidad Siglo 21 (2008-2014) [Argentina]. She is a researcher at that institution and is currently director of the project "India and the Global South: analysis of the foreign policy of an emerging power (2014-present)". In addition, she teaches a degree in International Relations at Blas Pascal University. She is an adherent member of the Argentine Council for International Relations (CARI), participating in the Work Group of India. https://orcid.org/0000-0003-4553-4893

Abstract

This article analyses Argentina's lithium policy within the framework of geo-economic competition driven by the global energy transition. Drawing on the concepts of geoeconomics, development models, and extractivism, it examines how Argentina has integrated lithium into its international insertion strategy since the sector's expansion after 2021. The study argues that, despite lithium's strategic relevance for decarbonization and advanced technologies, Argentina's approach largely reproduces a primary-export extractivist model characterized by low value added, strong dependence on foreign direct investment, and limited state capacity for regulation and rent capture. Through a qualitative, single-case study based on secondary data, the analysis shows that federal mining governance, decentralized provincial control, and investment-oriented regulatory frameworks have favoured rapid project expansion but hindered coordination, downstream industrialization, and productive diversification. As a result, lithium has made only a marginal contribution to foreign exchange earnings, technological upgrading, and redistribution, while reinforcing asymmetric integration into global value chains dominated by transnational actors. At the territorial level, lithium expansion generates well-paid but limited employment and modest local spill overs, alongside significant socio-environmental tensions, particularly regarding water use and indigenous rights. The article concludes that without a stronger, more coordinated state role aligned with long-term development objectives, lithium risks becoming another "developmentalist illusion" rather than a driver of structural transformation and greater economic autonomy.

Keywords

Lithium, geoeconomics, development models, extractivism, international insertion.

Resumo

Este artigo analisa a política de lítio da Argentina no contexto da concorrência geoeconómica impulsionada pela transição energética global. Com base nos conceitos de geoeconomia, modelos de desenvolvimento e extrativismo, examina a forma como a Argentina integrou o lítio na sua estratégia de inserção internacional desde a expansão do setor após 2021. O estudo defende que, apesar da relevância estratégica do lítio para a descarbonização e as tecnologias avançadas, a abordagem da Argentina reproduz, em grande medida, um modelo extrativista de exportação de matérias-primas, caracterizado por um baixo valor acrescentado, uma forte dependência do investimento direto estrangeiro e uma capacidade estatal limitada em termos de regulamentação e captação de rendas. Através de um estudo qualitativo de caso único, baseado em dados secundários, a análise mostra que a governação federal da mineração, o controlo provincial descentralizado e os quadros regulamentares orientados para o investimento favoreceram a rápida expansão dos projetos, mas dificultaram a coordenação, a industrialização a jusante e a diversificação produtiva. Consequentemente, o lítio contribuiu apenas marginalmente para as receitas cambiais, a modernização tecnológica e a redistribuição, ao mesmo tempo que reforçou a integração assimétrica nas cadeias de valor globais dominadas por atores transnacionais. A nível territorial, a expansão do lítio gera emprego bem remunerado, mas limitado, e efeitos de arrastamento locais modestos, a par de tensões socioambientais significativas, particularmente no que diz respeito ao uso da água e aos direitos dos povos indígenas. O artigo conclui que, sem um papel do Estado mais forte e coordenado, alinhado com objetivos de desenvolvimento a longo prazo, o lítio corre o risco de se tornar mais uma «ilusão desenvolvimentista», em vez de um motor de transformação estrutural e de maior autonomia económica.

Palavras-chave

Lítio, geoeconomia, modelos de desenvolvimento, extrativismo, inserção internacional.

How to cite this article

Vera, Loreto Correa & Baroni, Paola Andrea (2026). The Geoeconomics of Minerals in the Energy Transition: The Case of Lithium in Argentina. *Janus.net, e-journal of international relations*. VOL. 17, Nº. 2, November 2026-April 2027, pp. 283-305. DOI https://doi.org/10.26619/1647-7251.17.2.14

Article submitted on 12 April 2026 and accepted on 20 August 2026.

THE GEOECONOMICS OF MINERALS IN THE ENERGY TRANSITION: THE CASE OF LITHIUM IN ARGENTINA

LORETO CORREA VERA

PAOLA ANDREA BARONI

Introduction

Geopolitics is currently undergoing profound changes driven by technological development, which broadens the scope of strategic analysis. The market and natural resources play a central role in enabling states to devise strategies that enhance their international standing. Within this framework, the supply of critical minerals is key to the energy transition, defence and a wide range of technological applications. Developing countries that possess these resources seek to capitalise on them to secure economic benefits and preserve their room for manoeuvre. However, development becomes a structural challenge: the development model based on comparative advantages and extractive industries creates external vulnerability, dependence on international cycles, limits state autonomy in the face of changes in the current global context and influences how the State integrates in the international system (Argento, Slipak & Puente, 2022; Actis et.al, 2016).

The lithium industry has established itself as a key sector in the energy transition, with its period of greatest expansion occurring since 2015 (Barberón, 2023). This mineral is essential for the manufacture of high-energy-density rechargeable batteries, which are mainly used in electric vehicles, portable electronic devices, power tools and energy storage systems. In 2024, 87% of global lithium consumption was for batteries, highlighting its central role in technology (U.S. Geological Survey, 2025). Global demand is primarily for lithium carbonate, followed by lithium hydroxide and, to a lesser extent, other compounds[1] (Secretaría de Minería, 2025a). Although lithium is often regarded as a strategic mineral, it is not in short supply globally, and producing countries lack the capacity to restrict supply or influence demand. Consequently, it presents a medium-to-low supply risk, and the growing demand for it does not give rise to speculative trends, but rather poses the challenge of assessing its actual economic contribution (Ceroni, 2018).

The Lithium Triangle, comprising Chile, Bolivia and Argentina, is a region covering 400,000 km² with estimated reserves accounting for over 50% of the world's total[2] (U.S.

[1] Lithium sulphate is used as a precursor in the production of lithium hydroxide, which has a higher concentration of the mineral and is therefore more effective in battery manufacturing.
[2] Lithium resources are theoretical and estimated deposits of the mineral, whilst reserves are defined as discovered, recoverable and commercially viable deposits.

Geological Survey, 2025). As these countries do not control the production chain, industrialisation does not take place on a large scale, thereby replicating the classic Latin American extractive production model. (Uribe & Panez, 2022). Extraction and processing are concentrated in a handful of countries, with China dominating the entire supply chain.

The leadership of the Triangle countries is confined to the early stages of the value chain, failing to achieve downstream industrial integration and to coordinate policies that would maximise economic benefits, diversify production and energy mixes, and promote the development of human capital in strategic areas (Castillo, Garcés & Furtado Messias, 2024; Juste & Álvarez, 2024; Lahoud, 2023). Recent studies warn that the export boom has had a negative environmental impact and has not led to substantial improvements in employment or a reduction in inequality in the producing regions. (Amar, Álvarez & Abeles, 2024; Comisión Económica para América Latina y el Caribe [CEPAL], 2023; Díaz & Reynoso Castillo, 2023).

Of the three countries, Argentina has the shortest history of mining. The sector was modernised following the Mining Code (1886 and subsequent amendments) and experienced significant growth from the 1960s and, from the 1990s onwards, through large-scale mining driven by foreign investment. With an agro-export development model, mining was always marginal, although today it is a significant sector of the economy with a contribution to Gross Domestic Product (GDP) that grew by more than 8.5% when comparing the first quarter of 2025 with the same period in 2024 (Rajzman & D'Angelo, 2026). Argentina is the world's fifth-largest producer of lithium, with eight projects in production and more than 41 projects at advanced stages, focused on private extraction. Jujuy, Salta and Catamarca are the main producing provinces. (Secretaría de Minería, 2025a). But it lacks an overarching strategy for lithium industrialisation, unlike Chile and Bolivia, where the state plays a strategic role.

The aim of this study is to analyse Argentina's lithium policy, given the country's vast reserves and the fact that its policies and the development of its mining industry differ significantly from those of Chile and Bolivia. The research is guided by the question of how this policy is shaped within the framework of the geo-economic competition associated with the energy transition and its link to the current development model.

This article examines lithium as a strategic policy issue at the intersection of Argentina's development model, federal governance and global economic integration. It assesses whether lithium is being incorporated into a coherent development strategy or whether its exploitation reproduces traditional patterns of extractive specialization and dependent integration into the global economy.

The analysis focuses on three dimensions. First, it explores the institutional and regulatory framework governing lithium in a federal context characterized by fragmented provincial regulations and tensions between national and subnational authorities (Freytes, Obaya & Delbuono, 2022; Freytes, 2024). Second, it analyses the role of foreign investment, transnational firms and global value chains, emphasizing Argentina's ability to capture rents, generate value added and strengthen its position in the international economy (Nacif, 2019; González Jáuregui, 2024b; Juste & Navarro, 2022; Argento, Slipak & Puente, 2022). Third, it considers the territorial and socio-environmental impacts of lithium extraction, including disputes over water use, indigenous rights, natural resources and the distribution of benefits and costs.



While previous research has examined these issues, the perspectives have often remained separate. Some studies focus on environmental impacts and territorial conflicts, whereas others analyse investment, exports, industrialization and lithium's contribution to productive development (Obaya & Kramarz, 2026; CEPAL, 2023; Amar, Álvarez & Abeles, 2024). This article integrates these approaches through the frameworks of geoeconomics, development models and sustainable governance.

By placing governance at the centre of the analysis, the article asks whether the Argentine state has the institutional capacity to coordinate different levels of government, regulate corporate actors, distribute benefits effectively and align lithium extraction with long-term sustainable development goals.

Data is drawn from 2021 onwards, as this is when growth in the lithium sector began to be observed. The study is descriptive in nature and employs a qualitative methodology. It is a single-case study based on the collection and interpretation of data, primarily secondary data—statistical, documentary and journalistic—which led to the exploration of the available information and the unobservable relationships between these data points. Various categories were selected for the analysis, derived from the chosen concepts. Data triangulation was employed to cross-check the data and assess the convergence or divergence of the information gathered. (Vieytes, 2004).

Conceptual approach: geoeconomics, development models and extractivism

Geopolitics is the relationship between geography and politics and the power of a state, which was traditionally based on control of land, sea or air. Globalisation and the technological revolution have transformed these factors, bringing in the market, natural resources, trade routes and communications. This has led to the emergence of other geopolitical actors, such as transnational corporations and various international organisations (Jiménez Bastida & Briones-Peñalver, 2021).

Added to this concept is that of geo-economics. Developed by Edward Luttwak in 1990, it focuses on models of development, cooperation and integration, and on the conflicts these generate. It emerged in the post-Cold War era, when the influence of military power on the international agenda waned and economic and trade issues came to the fore. Security issues were redefined, shifting towards economic interests established through geoeconomics (Rojas Sánchez, 2019).

Geoeconomics is based on the use of economic instruments to achieve national objectives and secure favourable geopolitical outcomes (Blackwill & Harris, 2016). Geo-economic policy seeks to position and empower the country's own strategic sectors with the aim of gaining access to new markets and capital (Jiménez Bastida & Briones-Peñalver, 2021). Thus, it is not the same for a state geo-economic policy to set out a vision for the economic model to be followed and to oversee the productive system, as it is for other actors to be involved, or to seek control over territories, markets, companies and production chains.

The relationship between geoeconomics and the energy transition is evident in the case of critical minerals. Resources such as lithium take on strategic importance, leading states to use trade policies, industrial strategies and investment mechanisms to secure



supply chains and strengthen their position vis-à-vis other powers (Blackwill & Harris, 2016). Thus, the energy transition involves transforming energy mixes and, at the same time, competing for the technological and industrial benefits associated with sectors such as batteries and renewable energy (Jiménez Bastida & Briones-Peñalver, 2021). For resource-rich developing countries this situation presents both an opportunity and a risk: lithium can be used to improve their integration into global value chains or, conversely, to embed a subordinate position if the state lacks the capacity to align mining policy with broader objectives of energy transition and industrialisation (Rojas Sánchez, 2019; Argento, Slipak &Puente, 2022).

For Latin American states, development is an imperative that exerts a decisive influence on a wide range of domestic and foreign policy decisions. The development model refers to the way in which the state, the market and politics interact at a given historical moment to transform a country's productive and social structure, as well as its international insertion. The latter refers to the framework of foreign policy guidelines that a state adopts to engage with the international system in the political, security and economic spheres, defining objectives, relationships and priorities in accordance with its internal interests and needs (Lorenzini, 2011, as cited in Actis et.al, 2016).

Each development model comprises three dimensions, all of which are shaped by the involvement of economic, political and social actors. Firstly, the productive dimension refers to the structural definition of the pattern of economic specialisation, whilst the exchange rate and financial dimension relate to the way in which the state manages the tensions between growth, macroeconomic stability and external constraints. This allows us to assess whether integration reproduces patterns of dependency or, alternatively, strengthens the state's negotiating capacity. Thirdly, the social dimension addresses the role of the state in the distribution of the benefits of growth and in the generation of positive externalities (Actis et al., 2016).

Depending on the degree of state intervention and the role of the market in productive transformation, three types of development models can be identified: a) the orthodox model, based on the autonomous functioning of the market, international comparative advantages and legal certainty as the main mechanism for attracting investment; b) the heterodox model, which recognises the limitations of the market and promotes state intervention to drive productive transformation; and c) the neo-developmentalist or neo-structuralist model, in which the state assumes a leading role as the central instrument of development, seeking to generate competitive advantages and compensate for market failures. (Actis et al., 2016).

Latin America underwent a complex transformation at the start of the 21st century, characterised by persistent economic vulnerability stemming from external shocks and difficulties in sustaining the growth needed to narrow structural gaps and tackle environmental challenges. Recurring cycles of rapid expansion followed by deep crises have fuelled political instability (Bertola & Ocampo, 2022). Furthermore, the commodities[3] boom of the first decade of the century gave rise to tensions and dilemmas in the relationship between the state and the market.

[3] A commodity is a raw material or primary agricultural product that is bought and sold in bulk.

Argentina has a productive structure based on primary and industrial sectors and, between 1990 and 2025, adopted a variety of development strategies. These are underpinned by the persistence of a primary export-oriented model combined with a process of industrialisation based on regional agreements, particularly Mercosur, and geared towards the domestic and Latin American markets. In recent years, the strategy has also incorporated traditional markets such as the United States and Europe, and emerging markets such as China and India. The government of Alberto Fernández (2019–2023) adopted a neo-developmentalist approach, whilst that of Javier Milei (2023–2027) takes an orthodox stance. The latter is promoting a hybrid public-private scheme, with still a heavy tax burden on the business sector, alongside a process of far-reaching liberalisation of the economy and foreign trade.

Extractivism is an economic model centred on the intensive, large-scale exploitation of natural resources for export as raw materials (minerals, oil, agricultural products) with little or no added value. Heavy reliance on the sale of commodities has negative effects on domestic development, as it undermines the strategy for international integration. This vulnerability is reflected in dependence on external factors such as weather conditions, harvests and terms of trade. By relying on static comparative advantages, the model reinforces a form of economic subordination, given that raw material prices depend on global demand, production in other countries and external social, political and economic contexts, which limits the state's autonomy and sustained development (Nacht, 2013).

The characterisation of extractivism as an economic model remains a subject of debate, as there is no agreed definition and it is sometimes equated with a development model (Uribe & Panez, 2022; Montalván-Zambrano & Wences, 2024). We understand extractivism as a pattern of productive specialisation based on the large-scale extraction and export of natural resources with minimal processing, which can manifest itself in different development models. Whilst the latter refer to the configuration of relations between the state, the market and society that determine a country's integration into the international economy (Actis et al., 2016), the case of Argentina shows that both orthodox and neo-developmentalist strategies have resorted to extractivist patterns in the mining sector. So extractivism constitutes a structural feature that cuts across different political-economic strategies and shapes the development trajectories available to the state (Argento, Slipak & Puente, 2022)

High commodity prices result in a significant opportunity cost when factors of production are not directed towards these activities, which increases the state's vulnerability to external changes and reduces its economic autonomy. This context encourages the consolidation of foreign direct investment (FDI), which is generally concentrated in the extraction of natural resources or their primary processing, reinforcing a pattern of specialisation based on low-tech activities. In Latin America, integration into global value chains as a supplier of inputs for third-country exports (forward linkages) exacerbates this dynamic. In the case of lithium, although demand is growing, countries lack the production capacity and inputs necessary to move beyond the initial stages of processing and progress beyond lithium carbonate (CEPAL, 2023).

Building on these concepts, the analysis is structured around three interlinked dimensions: 1) institutional and regulatory frameworks; 2) lithium, the development

model and the role of companies in Argentina, and 3) economic, territorial and socio-environmental impacts of lithium expansion. These dimensions are operationalised using categories derived from the development models framework (Actis et al., 2016): the productive dimension is analysed through the pattern of specialisation, the degree of downstream industrialisation and the presence of local production networks; the exchange rate and financial dimension is assessed through foreign direct investment flows, export earnings, taxation and the state's capacity for rent-seeking; and the social dimension is addressed in terms of job creation, distributional impact and socio-environmental conflicts. This enables the analysis to move beyond a merely sectoral description in order to assess the extent to which Argentina's lithium policy reflects, or deviates from, a coherent state strategy for international integration.

Institutional and regulatory frameworks

Argentina is a federal state and the regulation of mining is enshrined in the Constitution. Article 124 of the National Constitution assigns to the provinces "original ownership of the natural resources existing within their territory", meaning that the provinces retain original ownership of these resources. Furthermore, Article 75, clause 12, authorises Congress to enact fundamental laws, such as the Mining Code, whilst preserving local jurisdictions. The provinces retain the authority to regulate the procedural aspects of resource management, and the Code regulates rights, obligations and procedures relating to the acquisition, exploitation and use of mineral substances. Mines are legally distinct legal entities and are classified according to the mineral substances they contain. In the case of metallic minerals, it is stipulated that they can only be mined under a legal concession. Furthermore, Law 24.196 (1993) on mining investment offers incentives for exploration and mining, including a 30-year period of tax stability for new or expanded projects and exemptions from customs duties on imported equipment. (Moscheni & de la Torre, 2017).

In 2022, the Fernández administration launched the 'Argentina Productiva 2030' Plan, whose objective was the creation of formal jobs and businesses with the aim of reducing poverty and inequality. Ten productive missions were carried out across the country to address key economic, technological, social, and environmental challenges through policy recommendations and legislative proposals (Schteingart, 2024). In 2023, the Plan was officially published, including a section with recommendations for developing mining potential while safeguarding the environment: promoting investment and unlocking Argentina's geological and mining potential; developing national suppliers within the mining value chain; generating local, inclusive, and quality employment; and strengthening socio-environmental governance instruments in the mining sector (Ministry of Economy, 2023). The plan represented one of the few recent attempts to frame lithium and mining within a broader national development strategy rather than only as an investment opportunity. Nevertheless, it remained largely unimplemented due to the country's chronic macroeconomic and political instability -including internal tensions within the government- as well as a lack of coordination between ministries and different levels of government, compounded by the change of administration at the end of 2023 (Schteingart, 2024).

In 2024, Milei´s administration enacted the Incentive Scheme for Major Investments (RIGI in Spanish), guaranteeing greater regulatory stability, tax, customs and foreign exchange benefits, and a predictable regulatory environment for investments in strategic sectors. It requires the provinces to adhere to it. Provisions are introduced to reduce income tax from 35% to 25%, exempt export duties, allow for the crediting of value added tax (VAT) during the pre-operational phase, and provide access to international arbitration in the event of legal disputes. The lithium projects approved under this scheme to date are: 1) Rio Tinto: an investment of US$2.724 billion to expand the Rincón de Litio project (in Salta), increase production capacity and build a plant, and 2) Minera Galán Lithium: an investment of US$217 million in the Hombre Muerto Oeste (HMW) project (in Catamarca), for the production of high-quality lithium chloride. (A un año del RIGI, 2025). From 2003–2024, mining dominated FDI net foreign exchange earnings; it led capital inflows again in the first half of 2025 (Rajzman & D'Angelo, 2026). With this initiative, Argentina's ability to foster local value addition remains constrained by the structure of corporate participation and the limited development of domestic technological capabilities (González Jáuregui, 2024a).

As regards provincial legislation, Jujuy, through Provincial Law No. 5674 (2011), declared lithium to be a strategic natural resource, recognising it as a driver of the province's socio-economic development. (Juste & Navarro, 2022). It also established a public-private partnership, Jujuy Energía y Minería. Sociedad Del Estado (JEMSE), which holds a stake in the operations carried out there. La Rioja, through Provincial Law No. 10,608 (2023), declared lithium a strategic natural resource by virtue of its contributions to the energy transition and the socio-economic development of the province (CEPAL, 2023). In contrast, Salta and Catamarca are governed by provincial regulations on mining in general, but the latter established the state-owned company Catamarca Minera y Energética Sociedad del Estado (CAMYEN S.E.) to promote sustainable mining development. Finally, in 2021, the Interprovincial Treaty for the Creation of the Lithium Mining Region was signed between the provinces of Salta, Jujuy and Catamarca, with a view to jointly developing the various lithium options, and the Regional Lithium Committee was established to coordinate activities.

The regulatory framework, at both national and provincial levels, reflects the inherent tension of extractivism: on the one hand, it encourages investment and the production of minerals critical to global technological development; on the other, it is criticised for unduly favouring private and foreign companies, thereby limiting the contribution to national socio-economic development and economic autonomy. The creation of public or mixed-ownership companies in some provinces and the interprovincial treaty seek to partially counteract this dynamic of dependency and fragmentation. This legal system reflects a geo-economic model in which the State seeks to position strategic sectors for international integration, but which faces the constraints of federalism and extractivism, as well as dependence on FDI, within a complex global context. This fragmented international insertion model also limits the state's ability to align foreign policy with industrialization.

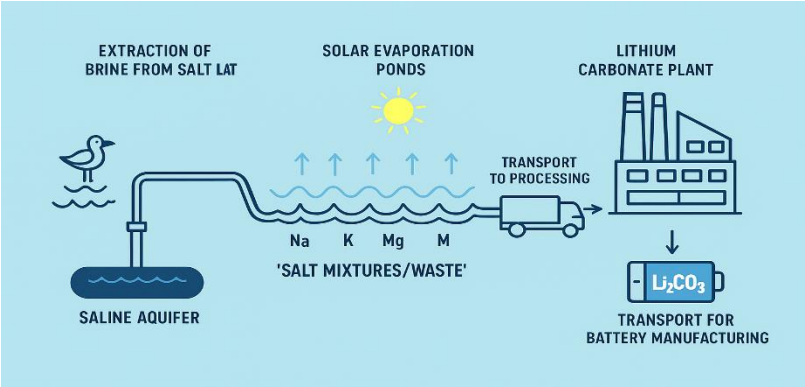
Lithium mining in Argentina

This section outlines the lithium sector's technical features, key actors, and trade dynamics not as an end, but as the basis for analysing lithium governance and evaluating Argentina's state strategy in later sections. Its purpose is to clearly separate, where evidence permits, the sector's historical evolution, its governance structures, and the coherence (or lack thereof) of state policy toward lithium.

Technical and sectoral characteristics

The global sources of lithium extraction are brine deposits, hard-rock mining and the recycling of used batteries. The main methods include evaporation techniques, electrochemical processes and innovative approaches, such as direct lithium extraction (DLE) technologies. Each method presents advantages and challenges in terms of efficiency, environmental impact and economic viability. In South America, natural lithium deposits are found beneath extensive salt flats in areas of the Andean highlands and the Puna, and are extracted using slow solar evaporation methods, which are favoured due to their lower operating costs. (Vera et al., 2023).

Figure 1. Flowchart of activities related to lithium production



Source: Authors' own elaboration.

The Lithium Triangle encompasses around 150 inland drainage basins in north-western Argentina, western Bolivia and northern Chile. Within this region there are more than 100 salt flats and lagoons, varying in size.

In Argentina, lithium is found in salt flats where it occurs in high concentrations near the surface. Argentina's lithium reserves account for around 13% of the world's total, and its resources amount to approximately 23 million tonnes. (U.S. Geological Survey, 2025). Mineral separation, leaching processes and other technologies, which have been in use in Chile for many years, only began in Argentina at the start of 2021. Lithium production is therefore a fledgling industry that reached 71,000 tonnes of lithium carbonate equivalent (LCE) in 2024, contributing 86.7% carbonate and 13.3% chloride to the international market. (Secretaría de Minería, 2025a).

This overview identifies key features that shape lithium governance in Argentina: geographically concentrated production, water-intensive extraction and integration into global markets primarily through early-stage processing rather than advanced industrial production.

Figure 2. Argentine salt flats within the lithium triangle by 2023.



Source: Martínez, J. (2023, September 2nd). Argentina could export US$7 billion of lithium by 2025. The Rio Times. https://www.riotimesonline.com/argentina-could-export-us7-billion-of-lithium-by-2025/

Corporate actors and investment patterns: geoeconomic competition and strategic positioning

Argentina has the most extensive portfolio of lithium projects in the Triangle, which are at various stages of development and are in the provinces of Salta, Catamarca and Jujuy. By 2025, eight projects were in operation and 15 projects at advanced stages: five projects under construction, four at the feasibility stage, three at the pre-feasibility stage and three undergoing preliminary economic evaluation. In addition, there are more than forty projects in the early stages: 26 in advanced exploration, 9 in initial exploration and 6 in prospecting. (Secretaría de Minería, 2025a).

The two projects that have been in operation the longest are the Olaroz project, owned by the Rio Tinto Group (British-owned), Toyota Tsusho (Japanese-owned) and the state-owned company JEMSE, and the Fénix project, controlled by the Rio Tinto Group. Similarly, the Cauchari-Olaroz project is controlled by Ganfeng Lithium Co. (Chinese capital), Lithium Argentina (Canadian capital) and JEMSE. After 12 years of work and an investment of over US$800 million, the Centenario-Ratones project, the first in Salta, was inaugurated. Run by the French company Eramet, it began production in late 2024 using the DLE process. Furthermore, Sal de Oro is controlled by the South Korean firm POSCO Holdings Inc. and has two plants: one for hydroxide production – currently operational– and another for carbonate production, currently under construction. Finally, the Mariana project, run by Ganfeng Lithium Co. Ltd, began producing lithium chloride in early 2025 (Secretaría de Minería, 2025a; 2025b).

There are around 30 companies operating in the lithium sector under a concession scheme, with a broad business model for its exploitation. The two largest companies are from Australia and the United States (US). In the first case, Allkem has three projects: Salar de Olaroz, in production, with a 66.50% stake, sharing control with Toyota Tsusho (25%) and JEMSE (8.50%); Salar de Vida (Catamarca), under construction, and Salar de Cauchari (Jujuy), in the pre-feasibility stage, both 100% under its control. In the second case, Livent operates in the Salar del Hombre Muerto in Catamarca. These companies merged in 2024 to form Arcadium Lithium, becoming the world's largest lithium products company. (Secretaría de Minería, 2025b).

The company with the most operations is the Dutch firm Pluspetrol Resources, which operates in Salta (Nabu Spisifo-Mina Patilla, Río Grande and Salar de Arizaro I) and in Jujuy (Salinas Grandes), with four projects at an advanced stage of exploration. In Salar Arizaro, it holds a 40% stake, alongside Argentum Investments I LLC (USA), with 25.63%, and Prado Largo SA (Spain), with 4.37%. The Canadian company Argentina Lithium & Energy Corp. has full control of three projects at an advanced exploration stage: one in Salta (Arizaro) and two in Catamarca (Antofalla Norte and Incahuasi) (Secretaría de Minería, 2025b).

There are also Argentine companies such as Integra Capital, which operates in Jujuy and Catamarca, and SMG SRL (2009), which holds a 20% stake in the Salar de Arizaro in Salta. In addition, JEMSE has two projects in Jujuy (Secretaría de Minería, 2025b). At the end of 2023, TEAM Europe Argentina, which brings together European member states in the country, set up a lithium task force to consolidate and develop the lithium value chain in Argentina, through the strengthening of international cooperation and the analysis of potential investments (Europa apuesta por, 2023).

In 2021, the national administration established YPF Litio, with the aim of enabling YPF[4] to participate in the exploration and extraction of the mineral. However, the Milei government has shifted its strategy towards direct extraction through a key partnership with the Israeli firm XtraLit. It aims to focus on cutting-edge technology and add industrial value without neglecting the priority given to hydrocarbons (YPF y la israelí XtraLit, 2025).

[4] Yacimientos Petrolíferos Fiscales is a public limited company with a majority state shareholding (51%) specialising in oil and gas production.

From a foreign exchange and financial perspective, the greatest challenge to investing in lithium has stemmed from the foreign exchange market, due to the volatility of the dollar's exchange rate and the difficulty in repatriating profits. However, following the policies implemented by the Milei government (RIGI, economic liberalisation, facilitation of foreign trade and investment attraction, exchange rate band, etc.), a degree of macroeconomic stability is evident, allowing for greater predictability for investments, with a potential exceeding US$ 6.4 billion. (Secretaría de Minería, 2025a).

The dominance of transnational corporations and the limited role of public companies highlight how investment, ownership and technological control shape Argentina's position in global value chains, constraining the state's ability to pursue a coherent industrial strategy. (González Jáuregui, 2024a).

From a geo-economic perspective, the expansion of the lithium industry can be seen as part of a broader competition between major powers seeking to secure critical resources and exploiting comparative economic advantages or disadvantages to achieve national objectives and gain a competitive edge. The dispute over access to salt flats, the signing of long-term contracts and participation in the value chain results in differentiated strategies by states and transnational corporations, which combine FDI, cooperation agreements, concessional financing and infrastructure initiatives aimed at guaranteeing stable flows of lithium.

Argentina finds itself in this highly competitive landscape, alongside US, European and Asian companies operating through joint ventures or partnerships with local firms and agreements with sub-national governments (González Jáuregui, 2024b). This creates tensions between different levels of government, and the challenge lies in direct negotiations between companies and provincial governments. The emerging involvement of a state-owned lithium company and the central role of the provinces in project negotiations open up significant room for manoeuvre for external actors, who can adapt their strategies to the regulatory conditions of each jurisdiction. Furthermore, financing programmes and partnership initiatives driven by external powers help to anchor specific projects and export routes. This geo-economic configuration reinforces a primary-export model with a heavy reliance on transnational actors and global value chains dominated by the Global North. (Dirección Nacional de Estudios Regionales y de Cadenas de Valor, 2024; Nacif, 2019; Argento, Slipak & Puente, 2022; Montalván-Zambrano & Wences, 2024). So, Argentina's participation in the global lithium economy is characterised by a form of peripheral international integration, pattern that reinforces an asymmetric interdependence. Its fragmented institutional structure and investment-led model make it difficult to translate that relevance into greater autonomy, technological upgrading or coordinated national planning.

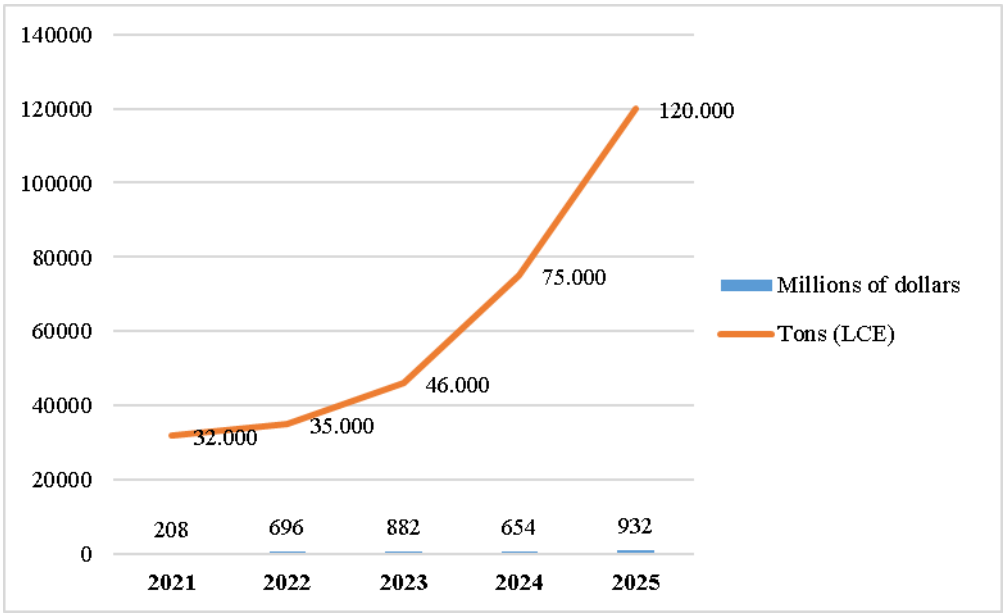
Trade dynamics and value-chain insertion: contribution to the economy and national development

All mining projects pay taxes, royalties and fees based on their production. Each company contributes to national income tax, VAT and export duties, as well as provincial taxes and royalties. These are capped at 3% at the mine mouth, i.e. on the value of the brine paid when the company sells the raw material (Ministerio de Economía, 2024). Mining

contributes to the country's revenue; however, lithium is exported as a commodity at a very low price and returns in the form of manufactured goods, meaning that the way it is mined does not generate the foreign exchange it could. (Corfield & Delbuono, 2024)

The lithium trade is based on private and confidential agreements; prices are not quoted on public exchanges, although there are international market benchmarks such as Fastmarkets. This, combined with the country's macroeconomic instability and exchange rate volatility, has led companies to declare lower export volumes or lower prices. For example, the companies Allkem and Livent were reported for under-invoicing in order to pay less tax. Livent paid a fine of over 5 billion pesos in 2023 for declaring exports at up to five times below market value. Meanwhile, the former Federal Public Revenue Administration[5] reported Galaxy Lithium (which merged with Orocobre to form Allkem) for simple and aggravated tax evasion during 2018 and 2019, estimating a fraud of around 200 million pesos. The Latin American Chamber of Lithium monitored the prices declared by both companies, noting that these do not reflect the true market value of lithium, which highlights the lack of state controls (Litio en Argentina, 2024). As for lithium carbonate exports, they accounted for just over 1% of the country's total exports, making it just another resource, as primary agricultural products dominate (Instituto Nacional de Estadística y Censos [INDEC], 2026). However, since 2021, they have risen significantly, from US$207 million to US$932 million in 2025 (Rajzman & DÁngelo, 2025; INDEC, 2026).

Figure 3. Argentine lithium exports



Source: Author's own elaboration based on INDEC data (2026)

[5] In 2024, the national government ordered its dissolution and the creation of the Customs Collection and Control Agency. https://www.afip.gob.ar/institucional/arca/arca.asp

Average export prices for lithium carbonate fell by 56% year-on-year: to US$40,000 per tonne in 2023 and averaging US$12,405 per tonne in 2024 due to a decline in EV sales and a lithium market glut, highlighting the market's high volatility (Secretaría de Minería, 2025a). However, Argentina's strong competitiveness is worth noting: in Catamarca, Jujuy and Salta, lithium is the main mineral export (50,2%) (Ministerio de Economía, 2026).

Exports are concentrated in a few countries: China, South Korea, Japan and the US, with all lithium fine chemicals being produced in the three Asian countries. China -the world leading producer of batteries and EVs- is the top trading partner, with a market share that has been growing, with a sharp rise in 2024. Japan's share declined, with a sharp drop in 2024, whilst both South Korea and the United States saw no significant change in their market share. Furthermore, in 2024, Germany emerges with a 3.8% share.

Table 1. Percentage share of the main export destinations

	2021	2022	2023	2024
China	42,29 %	41,59 %	43 %	67,6%.
Japan	16,49 %	30,72 %	25 %	4,1%
USA	19,12 %	8,84 %	11 %	13,7%
South Korea	7,41 %	12,84 %	11 %	11 %

Finally, it is worth highlighting the initiative by Y-TEC (YPF Tecnología), in partnership with the National University of La Plata and the National Scientific and Technical Research Council (CONICET), which established the UniLiB iron, phosphate and lithium battery production plant, with the aim of promoting research and development into active materials, their industrialisation and the manufacture of lithium-ion cells (CONICET, 2023). Although it represents the first link in the lithium value chain, it is currently operating at an experimental pilot stage.

From a geo-economic perspective, the national government and the provinces are seeking to position lithium as a strategic resource, but the tax and royalty framework reveals persistent tensions between the market and the state. Exports with low value added, combined with corporate practices such as under-invoicing and limited controls, weaken state capacity for regulation and rent capture, reduce foreign exchange earnings and generate tax losses. Although lithium has gained prominence, its share of exports is in its first phase of expansion and is subject to high price volatility and market concentration, which exacerbates external vulnerability. Although progress in value chain integration is still in its early stages, international integration remains limited. This demonstrates that increased external integration does not necessarily translate into enhanced state autonomy or sustained development. The sector expands Argentina's participation in critical mineral markets without substantially altering the structural conditions that reproduce dependence on commodity exports and externally controlled value chains.

At local level

The federal system allows sub-national governments to introduce variations in taxation, including differences in royalties and export duties, amongst other measures. This implies a decentralised approach to lithium management, which hinders the development of a unified vision and policy for the sector's expansion in Argentina and amongst the countries that make up the Triangle (Freytes, Obaya & Delbuono, 2022).

As lithium projects are in provinces with relatively low levels of development and poorly diversified economies, their extraction can have a significant impact. For example, mining has accounted for an important share of provincial GDP: in 2022, it represented 8.7% in Jujuy, 8.3% in Catamarca and 2.6% in Salta (Corfield & Delbuono, 2024). However, provincial governments have prioritised investment projects over an agenda for productive transformation, which ultimately undermines local development (Freytes, 2024).

In general, the three provinces allocate part of the revenue to supporting the municipalities or districts where the deposits are located and to investments in infrastructure related to the activity, whilst the remaining revenue is used for general expenditure. Each province has sought to promote specific objectives regarding royalties: Jujuy created additional incentives for the processing of minerals within the province; Salta sought to strengthen provincial oversight and revenue collection vis-à-vis the municipalities; and Catamarca sought to improve provincial tax revenue by establishing reference prices and tariffs. (Freytes, Obaya & Delbuono, 2022).

One tool used to promote productive development is the Local Procurement Policy (LPP), which involves making access to natural resources or the renewal of concessions conditional upon compliance with regulations governing the hiring of workers or the procurement of goods and services within the project's area of influence. The aim is to promote the creation of local productive links and prevent mining projects from becoming enclaves. Salta and Catamarca have established minimum requirements for the participation of local suppliers and workers of around 70–80%. Jujuy has no formal regulations, although it does have informal mechanisms, such as periodic requests for information and the participation of JEMSE in the share capital of projects. (Freytes, Obaya & Delbuono, 2022).

Mining projects take between three and five years to build and generate industrial activity for at least 30 years. A single project can engage around 800 SMEs during the construction phase and retain around 600 throughout its operational life. Most of these are Argentine suppliers, employing local labour (Cámara Argentina de Empresas Mineras [CAEM], 2024). The creation of direct and indirect jobs boosts regional economic activity, spanning sectors such as hospitality, construction, retail and professional services. It involves transport operators, drilling rig operators, catering services, geologists, engineers, lawyers, welders and machine operators. Furthermore, wages within the sector are the highest, and the demand for technical professionals is on the rise (Trinca, 2025).

Between 2022 and 2023, jobs in the lithium mining sector grew at an annual rate of 50%. In September 2023, 4,600 formal direct jobs were created, with 90% of lithium-related employment concentrated in the provinces under study (CAEM, 2024). As regards the skill level of the workforce, 74% of the jobs created are at a medium level, 25% at

a high level and 1% at a low level. (Centro de Economía Internacional, 2024). However, Obaya and Kramarz (2026) argue that lithium mining does not generate the same economic and development benefits as other extractive activities, such as hydrocarbons. Lithium extraction is a chemical process that does not require large numbers of workers or complex technological inputs. This limits the industry's ability to drive the development of other sectors within the local economy.

In October 2024, the Regional Lithium Committee agreed to boost local trade in order to strengthen the regional economy and the lithium value chain. An agreement was signed to prioritise the use of local suppliers, establishing the following order of priority: first local suppliers from each province, then those from the mining region, and finally national suppliers. The aim is to harmonise regulations and facilitate access to supplier registers across provinces, whilst promoting private sector participation in working groups. Furthermore, the importance of energy, road and rail infrastructure projects in the region was emphasised, as these represent the greatest challenge to the effective use of resources. (Las provincias productoras de litio, 2024). This agreement highlights an effort to overcome fragmentation and promote joint economic development, in line with the sector's economic positioning strategy, although structural challenges remain.

Extraction and processing in salt flats entail risks such as water imbalance, impacts on biodiversity, the displacement of indigenous communities, and adverse effects on other sectors that rely on the same resources. To ensure sustainability, it is essential to implement regulations that set out what is permitted, how it should be done, and the consequences of non-compliance. These regulations include state laws and private standards, such as the Initiative for Responsible Mining Assurance (IRMA)[6], used to certify the Fénix project in Catamarca. Both IRMA and local public regulations require environmental impact assessments and public participation, but IRMA demands a more intensive level of involvement. The key difference lies in prior, free and informed consultation (PFIC) with indigenous peoples: the regulations require consultation, whilst IRMA requires their consent, detailing procedures and consequences – an area where local legislation has a significant legal loophole (Allan, 2024).

In practice, the decentralisation of decision-making gives rise to a few local territorial tensions. One example is water consumption in the areas surrounding lithium deposits, where water is lost through evaporation. Vera & Lacabana (2022) studied rainfall in the areas corresponding to lithium mining operations and indicate that, of the 18 sites surveyed, all have a maximum of 50 mm/year, except for Pozuelos, which has an annual average of 370 mm. This implies intensive use of limited water resources for a predominantly rural and vulnerable population, as their main activity is extensive agriculture and livestock farming. Furthermore, the Wetlands Act is still awaiting approval; this is key to lithium mining as it seeks to protect salt flat ecosystems; without it, investment is being held back due to fears of a provincial legal setback (Penelli, 2025). This reflects the complexities of sustainable mining.

Fiscal decentralisation highlights a fragmented approach to mining governance, which hinders the development of a coherent national strategy for lithium development.

[6] It emerged from a partnership between businesses, NGOs, communities, trade unions and financial institutions, and assesses environmental, social and corporate responsibility through external audits, assigning a score that reflects performance.

International integration materialises unevenly, as local economies become directly embedded in global extractive networks without sufficient mechanisms to ensure productive upgrading or long-term regional development. In provinces with poorly diversified economies, the sector takes on greater importance, but its focus on attracting investment merely perpetuates historical patterns of dependency and vulnerability. Although mining accounts for a significant share of provincial GDP and efforts are being made to reinvest revenues to avoid creating economic enclaves, the structural impact is limited. The sector does not generate mass employment, though it does create well-paid and technically skilled jobs, which reinforces the need for training policies and local productive integration.

At the same time, the region faces significant socio-environmental risks. The extractive model exacerbates territorial tensions, and sustainability requires strengthening regulatory frameworks and public participation to balance economic development with environmental justice. This highlights the interrelationship between the productive structure, state policies, and the social and environmental challenges posed by extractivism.

Final Remarks

An analysis of Argentina's lithium policy shows that the country's involvement in the geo-economic competition associated with the energy transition is structured, predominantly, around the reproduction of a primary-export-oriented extractivist model. Despite the strategic importance lithium has acquired in the global context of decarbonisation, the way in which its exploitation is organised within Argentina shows significant continuities with historical patterns of specialisation based on static comparative advantages, low value added and high dependence on transnational capital. In this sense, lithium is becoming established more as a commodity than as an effective driver of productive transformation and the strengthening of economic autonomy.

From a geo-economic perspective, Argentina's lithium policy reveals a fundamental tension between the need to attract investment and ensure macroeconomic predictability, and the state's inability to strategically guide the sector in line with long-term development objectives. The current regulatory framework favours the inflow of foreign capital and the rapid expansion of projects, but limits the state's capacity for rent capture, effective regulation and the coordination of downstream production chains. The decentralisation resulting from mining federalism exacerbates this dynamic, fragmenting the governance of the resource and expanding the room for manoeuvre of external actors, who negotiate directly with the provinces under heterogeneous regulatory conditions.

The study of the Argentine case confirms that lithium, despite its sustained growth and symbolic importance on the development agenda, has so far made only a marginal contribution in terms of foreign exchange earnings, productive diversification and redistributive impact. The volatility of international prices, the concentration of export destinations and under-invoicing practices reinforce external vulnerability and reduce the state's scope for economic autonomy. At the same time, nascent industrialisation efforts -such as pilot projects in the battery sector- remain insufficient to bring about a structural shift in Argentina's position within global lithium value chains. The country's lithium policy

illustrates a mode of international integration that privileges rapid incorporation into global markets over strategic coordination, reinforcing historical patterns of dependency and constraining the country's capacity to climb the value chain.

At the territorial level, the expansion of the lithium industry replicates the classic paradoxes of extractivism in relatively underdeveloped regions. Whilst it generates well-paid formal employment and boosts certain local economies, its spillover effects are limited and fail to offset the socio-environmental risks associated with the intensive use of water resources, pressure on fragile ecosystems, and tensions with indigenous communities. The weakness of mechanisms for consultation, participation and environmental oversight highlights a significant gap between the rhetoric of sustainable development and the actual practices of resource governance.

From this perspective, geoeconomics helps explain the limits of the extractive model while identifying ways to overcome them. Treating lithium as a strategic asset rather than simply an export commodity can promote technology transfer, joint industrial projects and greater value creation along the production chain. Achieving this requires coordination across levels of government, linking resource access to industrialisation commitments, and adopting negotiation strategies that secure greater economic and technological gains. In this way, a geoeconomic approach could reduce dependence on primary extraction and support a more autonomous and diversified international integration.

In short, lithium represents a strategic opportunity for Argentina, one that is shaped by the institutional framework, the current development model and the power structure of the global political economy. Without a redefinition of the state's role that allows for the coordination of industrial policies, technological capabilities, interprovincial coordination and a less subordinate international integration, lithium runs the risk of becoming a new developmentalist illusion that reinforces, rather than challenges, the historical logic of dependency. The challenge ahead is not to produce more lithium, but to decide for what purpose, for whom, and under what national vision its exploitation is organised within the framework of the global energy transition.

References

A un año del RIGI, ingresaron 22 proyectos por más de USD 35.500 millones (2025, 22 de octubre. Infobae. https://www.infobae.com/economia/2025/10/22/a-un-ano-del-rigi-ingresaron-22-proyectos-por-mas-de-usd-35500-millones/

Actis, E., Lorenzini, M. E., y Zelicovich, J. (2016). Modelo de desarrollo y estrategia de inserción: claves para la interpretación de su relación. En A. Busso (Coord.), *Modelos de desarrollo e inserción internacional: aportes para el análisis de la política exterior argentina desde la redemocratización* 1983-2011 (pp. 15-30). UNR Editora.

Allan, T. (2024, 6 de septiembre). ¿Cómo regular la minería de litio, el mineral estrella de la transición energética? Fundar. https://fund.ar/publicacion/como-regular-la-mineria-de-litio-el-mineral-estrella-de-la-transicion-energetica/

Amar, A., Álvarez, V. y Abeles, M. (2024). Explotación del litio en la Argentina: debates sobre el desarrollo productivo, social y ambiental presente y futuro del sector. Serie

Estudios y Perspectivas, 57. CEPAL. https://repositorio.cepal.org/server/api/core/bitstreams/bcb584cb-4cfd-4c32-82ef-70a15c19a1cc/content

Argento, M., Slipak, A. M., & Puente, F. (2022). El litio y la acumulación por desfosilización en la Argentina. En M. Svampa & P. Bertinat (Comps.), *La transición energética en la Argentina. Una hoja de ruta para entender los proyectos en pugna y las falsas soluciones* (pp. 189–212). Siglo XXI Ediciones.

Barberón, A. (2023). Geopolítica y transición energética en el triángulo del litio: un análisis entre Argentina, Bolivia y Chile. *Revista CEERI Global, 2* (3), 78-101. https://www.ceeriglobal.org/wp-content/uploads/2024/01/Barberon.-Revista-CEERI-Global-Numero-3.pdf

Bértola, L., & Ocampo, J. A. (2022). La economía latinoamericana durante las primeras décadas del siglo XXI. *El Trimestre Económico*, *89*(353), 39–71. https://doi.org/10.20430/ete.v89i353.1425

Blackwill R. & Harris J. (2016). *War by Other Means, Geoeconomics and Statecraft.* Harvard University Press.

Cámara Argentina de Empresas Mineras (CAEM) (2024). Informe productivo de la minería argentina [Argentine mining production report]. https://caem.com.ar/wp-content/uploads/2024/09/16May_2024_Informe_productivo_CAEM1-1.pdf

Castillo, M., Garcés, I. & Furtado Messias, R. (2024). Perspectivas de desarrollo de las cadenas de valor relacionadas con el litio en Chile y América del Sur. *CEPAL, Serie Recursos Naturales y Desarrollo*, (223). https://www.cepal.org/es/publicaciones/80397-perspectivas-desarrollo-cadenas-valor-relacionadas-litio-chile-america-sur

Centro de Economía Internacional (2024). La minería de litio en la Argentina. Diagnóstico actual y perspectivas futuras [Lithium mining in Argentina. Current diagnosis and future perspectives]. https://cancilleria.gob.ar/es/cei/actualidad/la-mineria-de-litio-en-la-argentina-diagnostico-actual-y-perspectivas-futuras

CEPAL (2023). *Extracción e industrialización del litio. Oportunidades y desafíos para América Latina y el Caribe*. https://repositorio.cepal.org/server/api/core/bitstreams/5c1c160a-557d-42d9-bfa8-929142d2fa21/content

Ceroni, M. (2018). El litio: Que no sea otra oportunidad perdida. *Revista de la Sociedad Química del Perú, 84* (2), 173-174. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1810-634X2018000200001&lng=es&tlng=es

Consejo Nacional de Investigaciones Científicas y Técnicas (2023, 26 de julio). *De las salmueras a las baterías de iones de litio*. https://www.conicet.gov.ar/de-las-salmueras-a-las-baterias-de-iones-de-litio/#:~:text=Y%20agrega:%20%E2%80%9CIntegrar%20la%20cadena,desarrollo%20y%20soberan%C3%ADa%20de%20Argentina.

Corfield, K. & Delbuono, V. (2024). Minería. *agendata.fundar*. https://argendata.fund.ar/topico/mineria/?utm_source=chatgpt.com

Díaz, R. y Reynoso Castillo, T. (2023, 9 de agosto). Una gobernanza del litio desde el sur. *Asuntos del Sur*. https://www.zonadocs.mx/2023/08/09/gobernanza-del-litio/

Dirección Nacional de Estudios Regionales y de Cadenas de Valor. (2024). *Minería: litio. Informes de cadenas de valor, Año 9, n.º 72. Mayo*. Secretaría de Política Económica, Ministerio de Economía de la Nación. https://www.argentina.gob.ar/sites/default/files/informe_sectorial_litio_2024-2.pdf

Europa apuesta por el desarrollo sostenible y del litio en Argentina. (2023, 26 de octubre). EnerNews. https://enernews.com/nota/358740/europa-apuesta-por-el-desarrollo-sostenible-y-del-litio-en-argentina#:~:text=Se%20celebr%C3%B3%20en%20la%20sede%20de%20la,el%20Embajador%20de%20la%20UE%20en%20Argentina%2C

Freytes, C. (2024). El litio como promesa de desarrollo. Fundar 2024. https://fund.ar/publicacion/litio-como-promesa-del-desarrollo/

Freytes, C., Obaya, M. y Delbuono, V. (2022). Federalismo y desarrollo de capacidades productivas y tecnológicas en torno al litio. *FundAr*, documento de trabajo, octubre. https://fund.ar/publicacion/litio-federalismo-desarrollo-capacidades/

González Jáuregui, M. J. (2024a). Chinese investments in Argentina's lithium sector: Economic development implications amid global competition. *The Extractive Industries and Society, 20*, 101551. https://doi.org/10.1016/j.exis.2024.101551

González Jáuregui, M. J. (2024b). La presencia de empresas chinas en el sector argentino del litio: Implicaciones para el desarrollo económico y la inserción internacional en el escenario geopolítico y geoeconómico actual. *Desarrollo, Estado y Espacio*, *3*(1), 1–23. https://doi.org/10.14409/rdee.2024.1.e0039

Instituto Nacional de Estadísticas y Censos (INDEC) (2026). Sistema de consulta de comercio exterior de bienes [Consultation system for foreign trade in godos]. https://www.indec.gob.ar/indec/web/Nivel4-Tema-3-2-124

Jiménez Bastida, J.L. y Briones-Peñalver, A. J. (2021). Geopolítica y Geoeconomía en el siglo XXI: nuevos instrumentos de estrategia en sectores de I+D y alta tecnología. *Economía Industrial*, (420), 15-24. https://www.mintur.gob.es/Publicaciones/Publicacionesperiodicas/EconomiaIndustrial/RevistaEconomiaIndustrial/420/Jimenez%20Bastida%20y%20Briones%20Peñalver.pdf

Juste, S. M. & Alvares, M. (2024). Pensar el litio en Argentina y Chile: Oportunidades transfronterizas para el desarrollo de una cadena de valor. En *Nuevas perspectivas de integración, cooperación y multilateralismo para América del Sur* (pp. 381-403). Buenos Aires: CLACSO. Casa Patria Grande. Agencia I+D.

Juste, S. y Navarro, H. (2022). Paradiplomacia del litio: Jujuy en el vínculo con China. *Trabajos de Investigación en Paradiplomacia TIP*, *11* (1), 84-98.

Lahoud, G. (2023). Litio: ¿Cuál es el desafío para Argentina y la región? [Video]. YouTube. https://www.youtube.com/watch?v=Zf2KnW4krQQ

Las provincias productoras de Litio acordaron favorecer el compre local (2024, 10 de octubre). *El Diario*. https://www.eldiarioweb.com/2024/10/las-provincias-productoras-de-litio-acordaron-favorecer-el-compre-

local/#:~:text=La%20reuni%C3%B3n%2C%20que%20tuvo%20lugar%20en%20Jujuy%2C,que%20priorice%20la%20contrataci%C3%B3n%20de%20proveedores%20locales

Litio en Argentina: por qué la producción nacional queda en manos de una empresa (2024, 8 de enero). *Ruido*. https://elruido.org/litio-en-argentina-por-que-la-produccion-nacional-queda-en-manos-de-una-sola-empresa/

Ministerio de Economía (2023). Argentina Productiva 2030. Plan para el Desarrollo Productivo, Industrial y Tecnológico. https://www.argentina.gob.ar/sites/default/files/documento_resumen_de_misiones_1.pdf

Ministerio de Economía (2024). Informe de cadenas de valor. Minería: Litio https://www.argentina.gob.ar/sites/default/files/informe_sectorial_litio_2024-2.pdf

Ministerio de Economía (2026). *Exportaciones mineras*. https://www.argentina.gob.ar/economia/mineria/eiti-portal-de-transparencia-de-las-industrias-extractivas/exportaciones-mineras#:~:text=2%2C9%25).-,Para%20las%20provincias%20del%20noroeste%20argentino%20(Catamarca%2C%20Jujuy%2C%20y,boratos%20(7%2C4%25).&text=Durante%20el%20a%C3%B1o%202020%20las,boratos%20(12%2C3%25).

Montalván-Zambrano, D., & Wences, I. (2024). Energy transition and lithium: New "commons" and other extractivisms. *Oñati Socio-Legal Series*, *14*(2), 416–446. https://doi.org/10.35295/OSLS.IISL.1765

Moscheni, M. y De la Torre, D. (2017). Tres décadas de políticas estatales mineras en Argentina: la continuidad de la omisión. *RevIISE - Revista de Ciencias Sociales y Humanas*, *10* (10), 243-257. https://ojs.unsj.edu.ar/index.php/reviise/article/view/181

Nacht, P.A. (2013). El Dragón en América Latina: las relaciones económico-comerciales y los riesgos para la región. *Iconos. Revista de Ciencias Sociales*, (45), 141-154. http://www.redalyc.org/articulo.oa?id=50925659010

Nacif, F. (2019). Litio en Argentina: de insumo crítico a commodity minero. Trayectoria socio-técnica de los yacimientos litíferos de la Puna (1930–2015) [Tesis de maestría, Universidad Nacional de Quilmes]. RIDAA-UNQ. https://ridaa.unq.edu.ar/bitstream/handle/20.500.11807/1658/TM_2019_nacif_007.pdf?sequence=1&isAllowed=y

Obaya, M. y Kramarz, T. (2026). Lithium for the global energy transition: how global forces and national legacies are driving resource-based development in South America. *World Development, 202* (107356). https://doi.org/10.1016/j.worlddev.2026.107356

Penelli, S. D. (2025, 6 de octubre). Trazaron la nueva hoja de ruta del litio en Argentina para los próximos 10 años. *Ámbito*. https://www.ambito.com/energia/trazaron-la-nueva-hoja-ruta-del-litio-argentina-los-proximos-10-anos-n6198637

Rajzman, N. y D'Angelo, G. (2025, 16 de mayo). El litio, camino a consolidarse entre los principales complejos exportadores de Argentina. *Bolsa de Comercio de Rosario. AÑO XLIV, Edición N° 2195*. https://www.bcr.com.ar/es/mercados/investigacion-y-desarrollo/informativo-semanal/noticias-informativo-semanal/el-litio

Rajzman, N. y D'Angelo, G. (2026, 6 de enero). ¿Qué aporta la minería a la economía argentina? *CAEM*. https://caem.com.ar/que-aporta-la-mineria-a-la-economia-argentina/#:~:text=El%20aporte%20de%20la%20miner%C3%ADa,total%20de%20aplicaciones%20al%20r%C3%A9gimen.

Rojas Sánchez, D. A. (2019). Geoeconomía en acción: Un acercamiento a sus efectos en Latinoamérica y el Caribe, con énfasis en China. En CN. W. Palomino V., A. Cerón R. y R. Barreto G. (Eds.), *Geoeconomía: Nuevas amenazas a la soberanía hemisférica* (pp. 15-54). Escuela Superior de Guerra Centro Regional de Estudios en Estrategia y Seguridad ESDEG-SIIA.

Schteingart, D. (2024, 30 de junio). La planificación productiva en un país inestable. *Misión Productiva*. https://misionproductiva.com.ar/la-planificacion-productiva-en-un-pais-inestable/

Secretaría de Minería (2025a). Litio. Panorama global del mercado del litio y el potencial litífero de Argentina. https://www.argentina.gob.ar/sites/default/files/informe_litio_junio_2025.pdf

Secretaría de Minería (2025b). Portfolio of Advanced Projects. Lithium. https://www.argentina.gob.ar/sites/default/files/portfolio_lithium_2025ok.pdf

Trinca, C. (2025, 9 de agosto). La minería del siglo XXI: litio y cobre para el desarrollo argentino. *Ámbito*. https://www.ambito.com/opiniones/la-mineria-del-siglo-xxi-litio-y-cobre-el-desarrollo-argentino-n6176426

U.S. Geological Survey (2025). *Lithium*. https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-lithium.pdf

Uribe, S. & Panez, A. (2022). Continuidades Y Rupturas Del Extractivismo En Chile: Análisis Sobre Sus Tendencias En Las Últimas Dos Décadas. *Diálogo andino*, (68), 151-166. https://dx.doi.org/10.4067/S0719-26812022000200151

Vera, M. L., Torres, W., Galli, C. I., Chagnes, A., & Flexer, V. (2023). Environmental impact of direct lithium extraction from brines. *Nature Reviews Earth & Environment, 4*, 149-165. https://doi.org/10.1038/s43017-022-00387-5

Vera, M. y Lacabana, M. (2022). Economía y Ambiente: la extracción del litio en salmuera en la puna argentina. *SaberEs, 14* (2), 148-168. https://www.scielo.org.ar/pdf/saberes/v14n2/1852-4222-saberes-14-02-148.pdf

Vieytes, R. (2004). *Metodología de la investigación en organizaciones, mercado y sociedad: epistemología y técnicas*. Buenos Aires: De las ciencias.

YPF y la israelí XtraLit se asociaron para implementar una nueva tecnología para extraer litio (2025, 5 de mayo). *Infobae*. https://www.infobae.com/economia/2025/05/05/ypf-y-la-israeli-xtralit-se-asociaron-para-implementar-una-nueva-tecnologia-para-extraer-litio/#:~:text=%E2%80%9CEste%20acuerdo%20marca%20un%20hito,alianza%E2%80%9D%2C%20cerr%C3%B3%20el%20diplom%C3%A1tico.