

WHITE GOLD RUSH

Electric vehicles need lithium, and Chile has plenty. But can its new government exploit this valuable mineral equitably asks Thea Riofrancos

Chile is in the midst of a historic re-writing of its constitution, one of the key demands of a social uprising that shook the country in 2019. Yet the delegates debating its articles in a neoclassical building in Santiago this April were not only shaping the future of Chile, but arguably of the planet.

On the plenary floor a member of the constitutional convention's Committee on Environment, Rights of Nature, Natural Commons and the Economic Model asserted the development of the mining sector should be led by the state, guided by social, democratic and ecological criteria, with extraction excluded from protected natural areas.

The proposals were particularly striking because Chile is the second-biggest producer of lithium and copper, two metals essential to the move to renewable energy.

The extractive sectors linked to renewable energy supply chains reflect the hierarchies of our world order: mining companies are primarily based in the Global North and, more recently, China.

Yet the fraught geopolitics of energy transition are also about aspirations for climate justice that resonate across the Global South. Chile's recently inaugurated leftist president, Gabriel Boric, said: 'We don't want projects that destroy our country, destroy communities.'

Chile 'cannot again make the historic mistake of privatizing resources', he said, and must instead ensure the state is involved in the lithium sector in a manner that furthers economic development while including local communities as 'protagonists'.

These goals speak to the inequalities pervading the move to renewable energy. Lithium is a key example. It will be in high demand due to its vital role in the batteries being used to decarbonize the transportation sector, which represents about 20 per cent of global carbon dioxide emissions.

But extracting this 'critical mineral' that is sometimes referred to as 'white gold' comes at a high environmental cost, particularly in the so-called lithium triangle, the transnational Andean plateau spanning Chile, Bolivia and Argentina dotted with salt flats which are crucial feature of vulnerable desert wetlands. Here lies more than half the world's identified lithium reserves.

Chile's Atacama Desert combines ultra-high levels of solar radiation, warm days and freezing nights. These are profitable conditions for 'mining water', as lithium extraction is called. Enormous quantities

of dense, lithium-rich brine are extracted and arrayed in evaporation ponds. The salt flats are also a staging ground for migratory birds and a habitat for three species of South American flamingos. Researchers have found that lithium mining together with climate change has led to a decline in flamingo populations. Due to the 'landscape scale' at which these birds interact with the wetlands, they are a barometer of overall ecosystem health.

For the 18 Atacameño indigenous communities that ring the Atacama Salt Flat, lithium and copper companies pose a threat to communally maintained irrigation systems. Scholars estimate that lithium companies consume 50 times as much water as households. In recent years, the Chilean water authority has declared the watershed 'exhausted' and prohibited the allocation of further water rights on the salt flats for extractive purposes. This does not apply retroactively, however, so the ecological damage continues.

There is a global interest in preserving these desert wetlands. Microbes there have adapted to the desert's environment, providing important 'astrobiological clues' to the evolution of life on Earth, say scientists. Meanwhile, the hardy plants of the Atacama Desert offer insight into preserving biodiversity and agriculture in a warming world.

To better regulate extraction in the Atacama, President Boric promised to establish a state lithium company. Investors may fret about the risks of an increased public role in the sector, but around the world state enterprises are common in extractive industries. Indeed, Codelco, Chile's state-owned copper firm, was one of the few not privatized under Pinochet's neoliberal regime.

Government officials have said that their ambition is less a state takeover of lithium extraction and more to expand Chile's role in the global supply chain, partnering with private firms and moving up the value-added ladder from lithium exporter to the centre of green technology innovation.

The desire to exert more state control over this rapidly growing sector resonates across the region. The governments of Argentina, Chile, Bolivia and Mexico – all on the left of the political spectrum – have been discussing a 'lithium association' that, while unlikely to mimic Opec, could serve as a forum to share knowledge, expertise, and, it is hoped, coordinate bargaining strategies with multinational



A road through the salt pools of the Salar de Atacama in Chile, the world's largest and purest active source of lithium

mining companies. The governments are also looking at potentially dramatic changes ahead in the political economy of lithium. The International Energy Agency predicts a possible 4,200 per cent increase in demand for the element by 2040.

At the same time, lithium projects are time-consuming endeavours, resulting in a looming market shortage. In response, countries in the Global North, including the United States and several in Europe, are rushing to create domestic lithium supply chains. Electric vehicle manufacturers are locking in long-term supplies or considering directly venturing into the mining business, as Tesla's Elon Musk indicated in April.

Latin American governments want to both ensure their share of the global lithium market and the value generated along battery supply chains.

Mining accounts for more than 60 per cent of Chile's exports. The goals of state involvement and environmental protection are potentially in tension. Despite this, environmental activists in Chile see expanded government presence in mining as essential to curtailing the economic and political power of globe-trotting companies. In the same vein, government actors argue

that a more assertive state role could bolster environmental regulations. Many of the constitutional proposals of April were approved on May 7 and 14. These articles strengthen the role of the state in the ownership and value-added development of mining sectors and note the 'finite character' of mineral resources and the obligation of environmental and social protection, as well as 'inter-generational' interest; recognize water as 'essential to life', prioritizing the human right to water as well as its role in ecosystems; and establish new rights to a healthy environment and access to 'environmental justice'.

While the convention ultimately didn't approve articles to fully nationalize mining sectors or exclude mining from all wetlands – which in effect would have barred lithium extraction – the draft text requires mining companies to repair environmental harm, bans mining in glaciers and protected areas, and empowers the state to declare water-vulnerable areas off limit.

These sit alongside earlier victories for the eco-constituents: the recognition of the rights of nature and the declaration of a climate and environmental emergency.

In September, the draft constitution will be put to a national referendum, presenting

voters, according to the constitution's supporters, with a stark choice between the conservative nostalgia for the past and the hope for a future of dignity for all.

These challenges are not limited to the extractive frontiers of the global economy but reverberate across lithium supply chains. Supply chains are not only vectors of capital accumulation but sites of protest over threats to clean water, economic livelihoods, sacred landscapes and biodiversity.

This resistance ought to inspire a deeper reckoning with extractive capitalism. How can the resource-intensity of the energy transition be reduced, relative to alarming projections? How might a principle of supply chain justice apply to the production of green technologies? And what would it take to upend global social and economic inequalities on the way to a renewable energy future?

These are fundamentally political questions that will be fought over in the years to come. Chile's lively democratic experiment is at the forefront of that battle.

Thea Riofrancos is an Associate Professor of Political Science at Providence College currently writing 'Extraction: The Frontiers of Green Capitalism'