

Buenos aires lithium-ion battery technology

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A worker at a lithium plant in the Salinas Grandes salt flat in northern Argentina. The country's lithium production is rising, and a new battery plant will be one of the first facilities to process the metal domestically, with hopes of adding value to its industry. (Image: Mariano Garcia / Alamy)

The plant, and ambitions to add value to Argentina''s lithium industry through domestic processing of the metal, have been backed by the government of outgoing president Alberto Fern?ndez. But optimism for these efforts is not shared by all industry players, with some seeing it as mere wishful thinking, in a challenging race to compete with the world''s battery production powerhouses such as China, the United States and Europe.

The majority-state-owned company Y-TEC is set to open its first industrial-scale lithium battery plant in the city of La Plata, in Buenos Aires province. The facility arrives after several years of research and US\$10 million of investment that allowed the company to carry out laboratory work and first test the feasibility of the project at a pilot plant.

"This is a milestone for us," Y-TEC president Roberto Salvarezza tells Di?logo Chino. The battery facility"s opening, he says, shows the progress the company has made to reach "total knowledge of the technology" and allow industrial-scale production.

The plant will have an annual capacity of 15 megawatt hours of battery power, which is equivalent to the amount of energy needed to run 2,500 homes or 400 electric vehicles for 12 months, Y-TEC says. However, the company will reportedly not target the auto industry initially, instead prioritising energy storage for mobile army radar and remote, rural locations not connected to the national grid.

"This is an historic event, as it settles the debate on the possibility of making batteries in Argentina," says Hern?n Letcher, vice-president of Y-TEC"s controlling company, YPF Litio. "Now we move on to another debate, which is in which market we are going to place them. I think we can make batteries for renewable energy storage in isolated communities and, in the future, target the regional electromobility market."

Argentina currently has three operational plants to produce lithium carbonate, the key component of lithium-ion batteries. But as many as 38 projects concentrated in the country"s north-west are in the exploratory stage and could start production in the next five years. In 2022, some 33,000 tonnes of lithium carbonate were produced - around 5% of global production. Given the magnitude of Argentina's resources, this position could escalate rapidly: the country is estimated to be home to nearly 25% of the



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world"s lithium resources, placing it second in the world after Bolivia.

According to data from Argentina''s economy ministry, 42% of the country''s lithium production in 2022 was exported to China, the world leader in electric vehicle manufacturing, which creates huge demand for the metal. In turn, China has so far played a significant role as an investor in lithium projects in Argentina. Chinese companies are part of various exploratory projects, and Ganfeng Lithium is an investor in the operational Cauchari-Olaroz plant in Jujuy province.

The government's optimism over the prospect of adding value to Argentina's lithium production is contrasted with caution, even scepticism, from mining companies. Figures in the industry told Di?logo Chino about the long-term nature of such developments, and that the country must first focus on establishing itself as a reliable producer of lithium carbonate. This alone will require large investments and technical improvements.

According to Jorge Gonz?lez, who heads up Argentina's directorate for the mining economy and its promotion, setting up a project to produce lithium carbonate requires a minimum of two years - not including the prospecting period - and requires an average investment of \$400 million, depending on its size.

Beyond the debates around the industrialisation of lithium, reluctance among mining companies is due to their mistrust of a national government that they argue has sought to take over part of their business. Representatives of such companies declined to comment, citing the sensitivity of the issue. Off the record however, some expressed opposition to several legal proposals that would set a quota for a share of production to be procured for the domestic market at a lower price than their export value.

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