

LITHIUM

AMERICA'S BATTERY MINERAL

VISUALIZING THE NEED FOR A U.S. LITHIUM SUPPLY CHAIN

THE CURRENT STATE OF PLAY

Lithium is a key component of rechargeable batteries commonly used in laptops, cell phones and most notably, electric vehicles.

By 2040, the global lithium supply is expected to increase by **40x**.¹



14M EV sales projected by the end of 2023.²



By 2040, EV sales could exceed **70 million** cars compared to only **3 million** in 2020, causing mineral demands to increase **25x** current levels.³



Nearly **90%** of total lithium demand is from advanced energy technology.¹

The average electric vehicle can require about **17.6 pounds** of lithium.

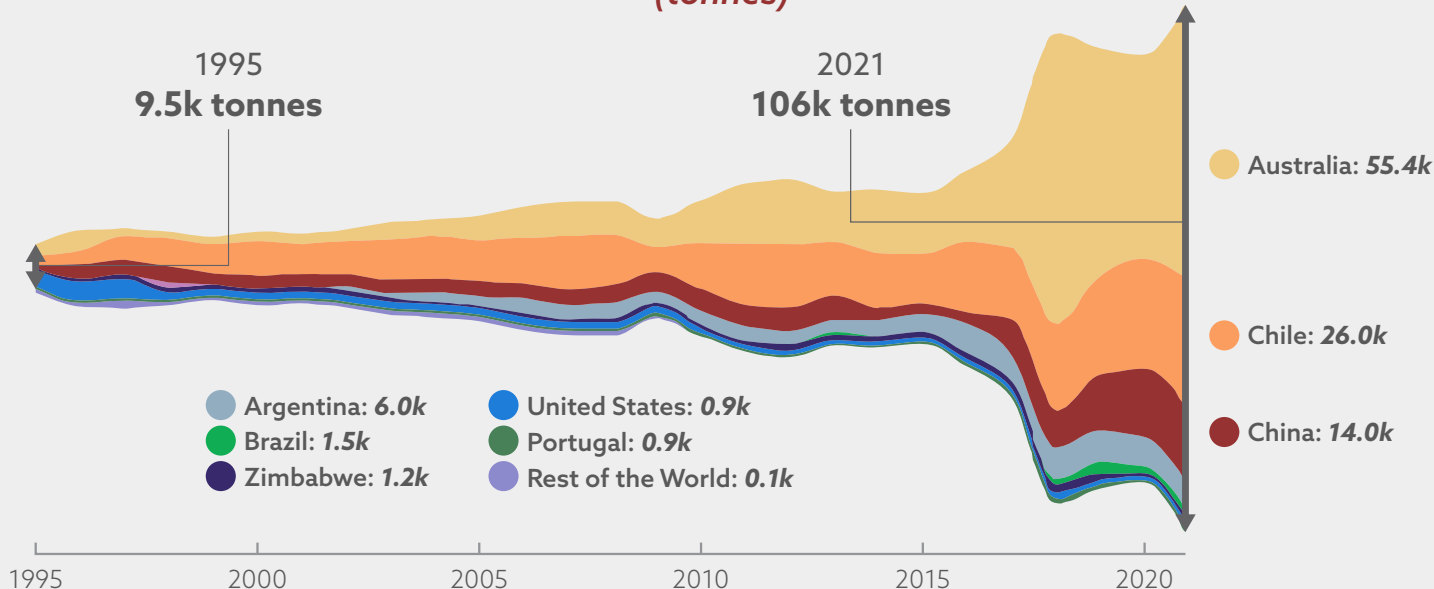


OTHERS DOMINATE THE SUPPLY CHAIN

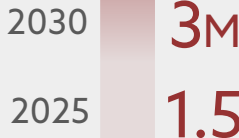
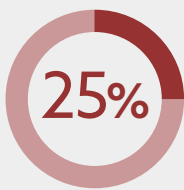
At one point, the U.S. was a leader in lithium production, but it's since ceded that position to foreign nations, including China.

MINE PRODUCTION OF LITHIUM, 1995-2021⁴

(tonnes)



The U.S. is more than **25%** dependent on lithium imports.



The demand for lithium is projected to reach **1.5 million tonnes** of lithium carbonate equivalent (LCE) by 2025 and over **3 million tonnes** by 2030.⁵

156 of the world's **211** lithium-ion battery megafactories are in China, and only **12** are in the U.S. The U.S. will need to build **20+** battery plants before 2030 to meet automotive demand.⁶



A PATH FORWARD

Instead of relying on unstable supply chains, the U.S. should enact widespread permitting reform and advance domestic lithium mining projects. Two U.S. mining companies aim to put the U.S. back on the lithium mining map.



Ioneer is developing the **Rhyolite Ridge Lithium-Boron Project** in Esmeralda County, Nevada. The current phase of the project is expected to extract and refine enough lithium for **370,000 electric vehicles** per year.

OFFTAKE AGREEMENTS

FORD MOTOR COMPANY
PRIME PLANET
ENERGY & SOLUTIONS
ECOPRO INNOVATION

INVESTMENT

- \$150 million on project development to date
- \$700 million in debt financing from DOE Loan Programs Office
- \$490 million in equity from Sibanye Stillwater Ltd.



ANTICIPATED PRODUCTION

24,000 TPA*
Lithium Carbonate/Hydroxide
192,000 TPA
Boric Acid
* tonnes per annum.

TARGETED PRODUCTION

2016 2024 2026
Development began in **2016**. Construction will begin once the project receives a **Record of Decision** from the Department of Interior. Ioneer currently expects to receive a Record of Decision in **1Q 2024** and begin production in **2026**.

Piedmont Lithium is working to supply the U.S. demand for lithium hydroxide through its proposed spodumene ore-to-lithium hydroxide project, **Carolina Lithium**, and **Tennessee Lithium**, drastically increasing U.S. production capacity and supporting the manufacturing of approximately **1.2 million EV batteries** annually.



ANTICIPATED PRODUCTION

60,000 METRIC TONS/YEAR
of lithium hydroxide*
* Combined figure for Carolina Lithium and Tennessee Lithium.

INVESTMENT



\$141.7M
U.S. Department of Energy Grant

TARGETED PRODUCTION

First production expected at **Tennessee Lithium in 2026** and **Carolina Lithium in 2027**, subject to permitting, funding, government approvals, project financing, and supply chain timelines.

The U.S. is behind in the lithium production race. As a mineral critical to the construction of advanced energy technology, the U.S. must advance important lithium mining projects such as Ioneer and Piedmont Lithium.

Sources

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