

In order to meet the 2030 goals, the USA will need 500,000 tons of lithium carbonate (Li_2CO_3). (<https://www.cnn.com/2021/05/10/cars/evs-species-extinct-nevada/index.html>).

The world's lithium resources are located in the **USA**, Australia, Canada, Chile, Austria, Brazil, Bolivia, Argentina, Mexico, Serbia, Austria, China, Democratic Republic of Congo, Russia, Zimbabwe with limited resources identified in Ireland, Spain, Portugal, Finland, Turkey, Namibia, Afghanistan, and Tibet.

The USA has untapped lithium resources which can be part of producing our needs for the energy transition if they can be permitted and brought into production in a timely fashion.



<https://www.usgs.gov/data/lithium-deposits-united-states>

Lithium can be extracted from 3 natural resources: sedimentary rocks, intrusive rocks containing specific Li-bearing minerals or Li-bearing brines

Rock: Lithium is hosted in sedimentary rocks, such as siltstones. Deposits of this type are found in the **USA**, Serbia, Turkey and Mexico. Two projects in Nevada (Lithium Americas' Thacker Pass and Ioneer's Rhyolite Ridge) are in the pre-development stage with projected production by 2023-2024.

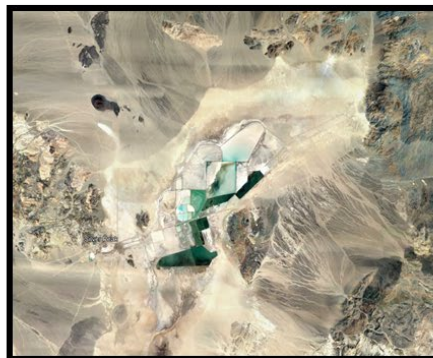
Specific Minerals: Pegmatites (a type of intrusive rock) with **lithium-bearing minerals**, such as spodumene, occur in Australia, **USA**, Canada, Ireland, Finland, China, Namibia, Russia, Afghanistan, Austria, Spain, Portugal and Democratic Republic of Congo. Australia is presently the largest producer of lithium from pegmatites with approximately 80% of global production from this type of lithium resource. China, Russia, Portugal, Brazil and Zimbabwe produce minor amounts from 1% to 13%¹.

¹<https://investingnews.com/daily/resource-investing/battery-metals-investing/lithium-investing/lithium-deposit-types-brine-pegmatite-and-sedimentary/>

Brines: Lithium is contained in saline groundwater, in geothermal fields and in some deep oil fields. Presently the extraction of lithium from saline groundwaters (brines) is the most common source of lithium (66% of worldwide lithium production). These lithium resources are found in Chile, Argentina, Bolivia, USA, Tibet, and China, with the greatest portion of production coming from Argentina, Chile, and Bolivia. Geothermal lithium brines are a very small percentage of global lithium resources with extraction of lithium from hot saline fluids being tested in the Salton Sea area of California and geothermal fields in New Zealand. Techniques for extracting lithium from the discharge brine of geothermal electricity generating plants is being researched. A small percentage of global lithium resources is from oil field brines with elevated amounts of lithium in fields in North Dakota, Wyoming, Oklahoma, Arkansas and Texas².

- Albemarle's Silver Peak Mine in Nevada produces lithium from brines while projects such as Lithium Americas' Thacker Pass in northwestern Nevada and Ioneer's Rhyolite Ridge in west-central Nevada, both of which are waiting for permit approvals, will produce lithium carbonate from sedimentary rocks. Silver Peak produces 5,000 to 10,000 tons of lithium carbonate annually. Thacker Pass will produce 80,000 tons of lithium carbonate annually for 40 years. Rhyolite Ridge will produce 20,000 tons of lithium carbonate annually for 26 years.
- Nevada currently has over one dozen exploration projects in western Nevada focusing on lithium exploration.
- Research continues on the potential for extracting lithium from geothermal field brines in the Salton Sea area of California and on extraction of lithium from oil field brines in North Dakota, Arkansas, Wyoming, Texas, and Oklahoma.
- In New England and the Carolinas lithium-bearing pegmatites are being explored.

Spodumene (Li-bearing) Crystals Pegmatite, Maine
<https://www.museumofnaturalhistory.org/exhibitions/spodumene-and-muscovite-crystals>
© 2019 Museum of Natural History, 100 North Main Street, Oxford, Maine

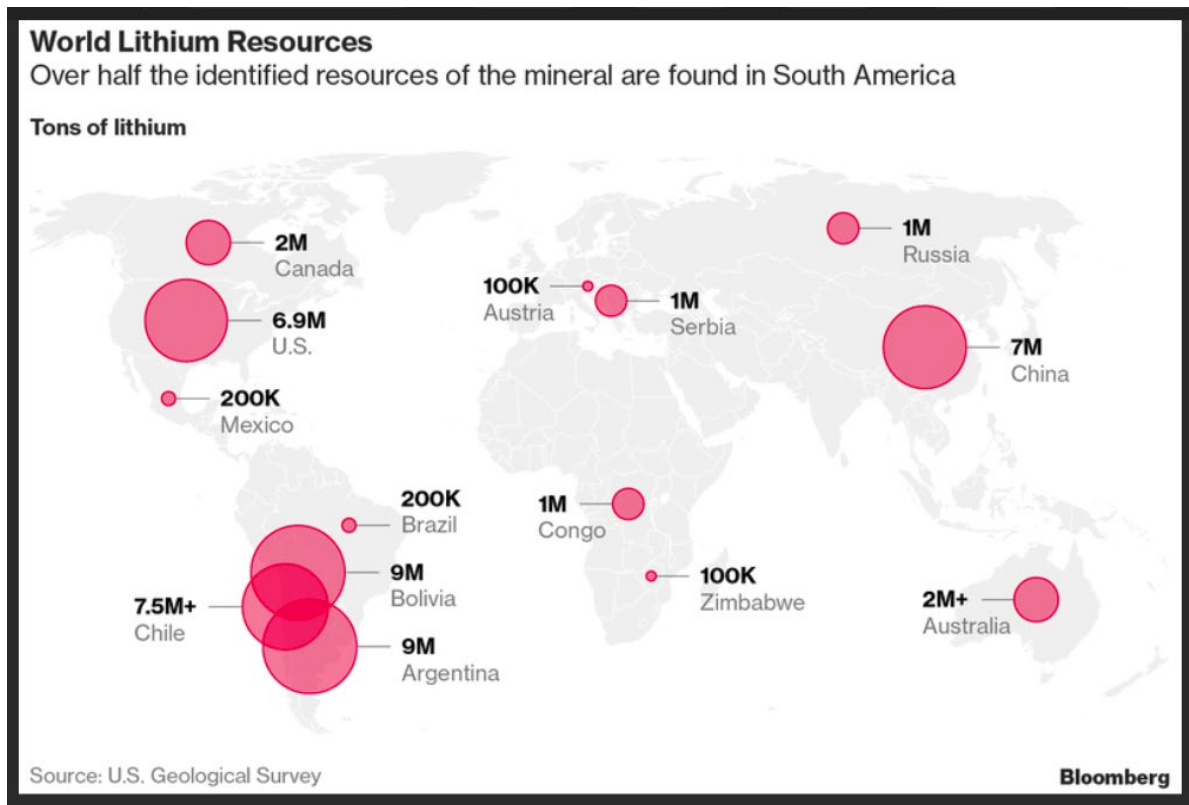


Albemarle Clayton Valley Lithium Operation Nevada
Lithium Production from Brines
(Google Earth Screen Shot)

Rhyolite Ridge – Ioneer's pre-development project Nevada
Sedimentary Rock Lithium Deposit
(R.A. Carragher photograph)



Where are the World's Lithium Resources?



[Mad Scramble for Lithium Mines Stretches From Congo to Cornwall - AboveWhispers | AboveWhispers](#)

President Biden is pushing for America to produce the materials needed from the beginning to the end of the supply chain: *“Folks, I know I’ve been criticized for saying this, but I’m not changing my view. We’re going to make sure the supply chain for America begins in America — the supply chain begins in America.”* Lithium is one critical mineral which America can produce if policies are put in place which allow for timely permitting to develop the resources. This constitutes the beginning of the supply chain, which then feeds into various manufacturing processes.

About WMC

WMC is a grassroots organization with over 200 members nationwide. Our members work in all sectors of the mining industry including hardrock and industrial minerals, coal, energy generation, manufacturing, transportation, and service industries. We hold annual Washington, D.C. Fly-Ins to meet with members of Congress and their staff, and federal land management and regulatory agencies to discuss issues of importance to both the hardrock and coal mining sectors. For more information about WMC, visit our website at www.wmc-usa.org.