



The Salton Sea is one of numerous new mining proposals in a global gold rush to find new sources of metals and minerals needed for electric cars and renewable energy.

The Lithium Gold Rush: Inside the Race to Power Electric Vehicles

A race is on to produce lithium in the United States, but competing projects are taking very different approaches to extracting the vital raw material. Some might not be very green.



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By [Ivan Penn](#) and [Eric Lipton](#) Photographs by Gabriella Angotti-Jones

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Atop a long-dormant volcano in northern Nevada, workers are preparing to start blasting and digging out a giant pit that will serve as the first new large-scale lithium mine in the United States in more than a decade — a new domestic supply of an essential ingredient in [electric car](#) batteries and renewable energy.

The mine, constructed on leased federal lands, could help address the near total reliance by the United States on foreign sources of [lithium](#).

But the project, known as Lithium Americas, has drawn protests from members of a Native American tribe, ranchers and environmental groups because it is expected to use [billions of gallons](#) of precious ground water, potentially contaminating some of it for [300](#) years, while leaving behind a [giant mound of waste](#).

“Blowing up a mountain isn’t green, no matter how much marketing spin people put on it,” said Max Wilbert, who has been living in a tent on the proposed mine site while [two lawsuits](#) seeking to block the project wend their way through federal courts.

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The fight over the Nevada mine is emblematic of a fundamental tension surfacing around the world: [Electric cars](#) and renewable energy may not be [as green as they appear](#). Production of raw materials like lithium, cobalt and nickel that are essential to these technologies are often ruinous to land, water, wildlife and people.

That environmental toll has often been overlooked in part because there is a race underway among the United States, China, Europe and other major powers. Echoing past contests and wars over gold and oil, governments are fighting for supremacy over minerals that could help countries achieve economic and technological dominance for decades to come.

Developers and lawmakers see this Nevada project, given final approval in the last days of the Trump administration, as part of the opportunity for the United States to become a leader in producing some of these raw materials as President Biden [moves aggressively to fight climate change](#). In addition to Nevada, businesses have proposed lithium production sites in California, [Oregon](#), [Tennessee](#), Arkansas and North Carolina.

But traditional mining is one of the dirtiest businesses out there. That reality is not lost on automakers and [renewable-energy](#) businesses.

“Our new clean-energy demands could be creating greater harm, even though its intention is to do good,” said Aimee Boulanger, executive director for the Initiative for Responsible Mining Assurance, a group that vets mines for companies like BMW and Ford Motor. “We can’t allow that to happen.”

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This friction helps explain why a contest of sorts has emerged in recent months across the United States about how best to extract and produce the large amounts of lithium in ways that are much less destructive than how

mining has been done for decades.

Just in the first three months of 2021, U.S. lithium miners like those in Nevada raised nearly \$3.5 billion from Wall Street — seven times the amount raised in the prior 36 months, according to data [assembled by Bloomberg](#), and a hint of the frenzy underway.

Some of those investors are backing alternatives including a plan to extract lithium from briny water beneath California's largest lake, [the Salton Sea](#), about 600 miles south of the Lithium Americas site.

At the Salton Sea, investors plan to use [specially coated beads](#) to extract lithium salt from the hot liquid pumped up from an aquifer more than 4,000 feet below the surface. The self-contained systems will be connected to geothermal power plants generating emission-free electricity. And in the process, they hope to generate the revenue needed to [restore the lake](#), which has been fouled by [toxic runoff](#) from area farms for decades.

Businesses are also hoping to extract lithium from brine in [Arkansas](#), [Nevada](#), [North Dakota](#) and at least one more location in the United States.

The United States needs to quickly find new supplies of lithium as automakers ramp up manufacturing of electric vehicles. Lithium is used in electric car batteries because it is lightweight, can [store lots of energy and can be repeatedly recharged](#). Analysts estimate that lithium demand is going to increase tenfold before the end of this decade as Tesla, [Volkswagen](#), [General Motors](#) and other automakers introduce [dozens of electric models](#). Other ingredients like cobalt are needed to keep the battery stable.

Even though the United States has some of the [world's largest reserves](#), the country today has only one large-scale lithium mine, Silver Peak in Nevada, which first opened in the 1960s and is producing just 5,000 tons a year — less than 2 percent of the world's annual supply. Most of the raw lithium used domestically comes from Latin America or Australia, and most of it is

processed and [turned into battery cells in China](#) and other Asian countries.

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“China just put out its next five-year plan,” Mr. Biden’s energy secretary, Jennifer Granholm, said in a recent interview. “They want to be the go-to place for the guts of the batteries, yet we have these minerals in the United States. We have not taken advantage of them, to mine them.”

[In March](#), she announced grants to increase production of crucial minerals. “This is a race to the future that America is going to win,” she said.

So far, the Biden administration has not moved to help push more environmentally friendly options — like lithium brine extraction, instead of open pit mines. The Interior Department declined to say whether it would shift its stand on the Lithium Americas permit, which it is [defending in court](#).

Mining companies and related businesses want to accelerate domestic production of lithium and are pressing the administration and key lawmakers to insert a \$10 billion grant program into Mr. Biden’s infrastructure bill, arguing that it is a matter of national security.

“Right now, if China decided to cut off the U.S. for a variety of reasons we’re in trouble,” said Ben Steinberg, an Obama administration official turned lobbyist. He was [hired in January](#) by Piedmont Lithium, which is working to build an open-pit mine in North Carolina and is one of several companies that have created a trade association for the industry.

Investors are rushing to get permits for new mines and begin production to secure contracts with battery companies and automakers.

Ultimately, federal and state officials will decide which of the two methods — traditional mining or brine extraction — is approved. Both could take hold. Much will depend on how successful environmentalists, tribes and local groups are in blocking projects.

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