

# Environmental Justice & Community Engagement In California's "Lithium Valley"

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Comite Civico del Valle

## Lithium in Geothermal Brine

### UNDERSTANDING THE POTENTIAL IMPACTS OF DIRECT LITHIUM EXTRACTION IN IMPERIAL VALLEY

Demand for lithium, used in electric vehicle batteries, is skyrocketing. Electric vehicles are important for the transition away from fossil fuels, however, mining lithium has well-documented negative social and environmental impacts. Imperial Valley, in Southern California, is home to one of the largest lithium deposits in the world, and has been dubbed "Lithium Valley."

Here lithium is found more than 1,500 feet underground in the hot brine that is used to generate electricity at geothermal power plants. This "Known Geothermal Resource Area" is on the south shore of the Salton Sea.

There are currently three companies at various stages of developing lithium extraction projects in Imperial Valley using proprietary Direct Lithium Extraction technology.

People living near proposed lithium projects already suffer disproportionately from air pollution caused by industrial agriculture and dust from the exposed lakebed of the receding Salton Sea. Indigenous communities have raised concerns about potential impacts to cultural sites at the Salton Sea.

The goal of this report is to educate frontline communities and the public about the potential environmental impacts of lithium extraction in Imperial Valley.

#### Five areas of potential impacts:

- 1) Air Quality
- 2) Freshwater Consumption
- 3) Salton Sea Degradation
- 4) Hazardous Waste and Materials
- 5) Seismic Activity



Lithium extraction will take place in the Salton Sea Known Geothermal Resource Area.

#### Communities have concerns and questions about lithium development near the Salton Sea.

To promote environmental justice, our report helps communities be aware of potential impacts and to fully participate in the environmental review process.

BY EARTHWORKS AND COMITE CIVICO DEL VALLE

Read the report at [earthworks.org/lithium-valley](https://earthworks.org/lithium-valley)

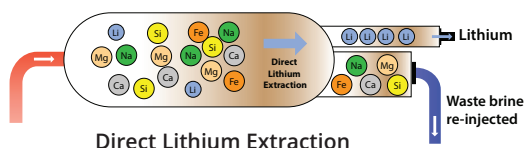
# Lithium in Imperial Valley

## DIRECT LITHIUM EXTRACTION FROM GEOTHERMAL BRINE

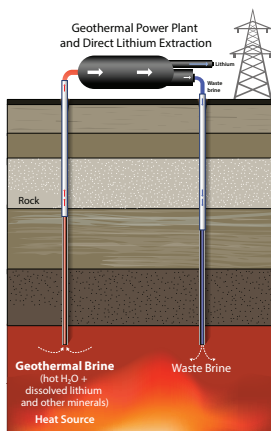
### LITHIUM EXTRACTION: How it Would Work in Imperial Valley

Lithium has been produced from mining hardrock deposits, primarily in Australia, or evaporating brine from salt flats, primarily in South America. In Imperial Valley, lithium is found in brine underground on the south shore of the Salton Sea. Direct lithium extraction removes lithium from the brine before it is reinjected deep underground into the geothermal reservoir.

Direct lithium extraction is being promoted as more environmentally friendly than other types of lithium mining, but it has never been used at a commercial scale and there are potential impacts to land, air, water, and public health.



Proposed lithium extraction would be connected to existing or newly constructed geothermal plants that extract brine from geothermal wells and produce low-carbon electricity. There are 11 active geothermal power plants today.



Currently, three companies are at various stages of developing direct lithium extraction projects in Imperial Valley: Berkshire Hathaway Energy Renewables Minerals, Controlled Thermal Resources, and Energy-Source Minerals.

In the Salton Sea area, lithium is not in the Salton Sea itself, but is dissolved in brine in the geothermal reservoir located more than 1,500 feet underground.

### POTENTIAL ENVIRONMENTAL IMPACTS FOR FRONTLINE COMMUNITIES

#### Our report identifies five areas of potential impacts from direct lithium extraction

**1 AIR QUALITY:** Construction and operation of lithium and geothermal facilities may impact already degraded air quality through emissions of particulate matter, greenhouse gases, and hydrogen chloride. It is important to analyze the cumulative impacts as "Lithium Valley" is built out, including from vehicle trips, battery plants, and other infrastructure.

**2 FRESHWATER CONSUMPTION:** Lithium extraction projects will consume Colorado River water for cooling and processing. Freshwater consumption needs to be analyzed in the context of climate change and possible cuts to Imperial Valley's

Colorado River allocation. At lithium's planned capacity, the demand will exceed the water currently allocated by the Imperial Irrigation District for non-agricultural use.

**3 SALTON SEA DEGRADATION:** The Sea is rapidly shrinking, exposing harmful dust contaminated by pesticides and fertilizers. If water is diverted from agriculture to lithium production, it may speed up this shrinking. Freshwater consumption by lithium extraction projects may also limit restoration options for the Salton Sea.

**4 HAZARDOUS WASTE:** Though geothermal operations are expected to reinject the spent brine back underground, other waste will need to be safely disposed. This waste may include heavy metals harmful

to human health such as arsenic, lead, and cadmium. Testing and disclosing of waste content and proper storage and transport will be critical.

**5 SEISMIC ACTIVITY:** Imperial Valley already has a baseline risk of earthquakes, so the extraction infrastructure should be designed with high standards for earthquake safety.

*Though environmental impacts of direct lithium extraction in Imperial Valley may prove to be less harmful than hardrock or evaporation mining, there are still potential adverse impacts that should be avoided and mitigated. To promote environmental justice, our report helps communities be aware of these potential impacts and to fully participate in the environmental review process.*

#### ABOUT EARTHWORKS and COMITE CIVICO DEL VALLE

EARTHWORKS is dedicated to protecting communities and the environment from the adverse impacts of mineral and energy development while promoting sustainable solutions. | [earthworks.org](http://earthworks.org) • 1612 K St. NW, Suite 904 Washington, D.C., USA 20006 • Report at [earthworks.org/lithium-valley](http://earthworks.org/lithium-valley)

COMITE CIVICO DEL VALLE was founded in Imperial County, California on the principle that "Informed People Build Healthy Communities" with the endeavor of improving the lives of disadvantaged communities, informing, educating, and engaging the community's civic participation. | [ccvhealth.org](http://ccvhealth.org) 235 Main Street Brawley, CA 92227 • [ccvhealth.org](http://ccvhealth.org)

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