



March 19, 2019

Governor Gavin Newsom
1303 10th Street, Suite 1173
Sacramento, CA 95814

Dear Gov. Newsom,

The Geothermal Resources Council is a non-profit professional association for the geothermal industry and community in the United States and abroad. We were founded in 1972 and are headquartered in Davis, California. We have over 1,300 members from around the world and are working to advance our industry by supporting the development of geothermal energy resources through communication of robust research, knowledge and guidance.

I am writing on behalf of the geothermal industry to express our support for California's efforts to encourage lithium recovery from geothermal brine. It is estimated that existing brine production reinjects over 100,000 tonnes of lithium carbonate equivalent back into geothermal reservoirs each year. As you know, lithium is the key ingredient in rechargeable lithium-ion batteries that power virtually every cell phone, laptop computer, tablet, and electric vehicle on the market today. Driven by the fast-growing electric vehicle market, world demand for lithium is expected to grow as much as ten-fold in the next decade. However, with the exception of a very small plant in Nevada, no lithium is produced in the United States. Instead, almost all of the global supply today is mined in Argentina, Chile, China and Australia.

Imperial Valley's existing geothermal plants are well positioned to become a competitive source of supply that could satisfy as much as 40% of today's worldwide lithium demand, with expansion potential that could more than quadruple this amount. However, the technology to extract lithium from geothermal brine has not yet been proven on a commercial scale, a critical financing requirement. Several geothermal and process engineering companies are working to develop that technology, but at a November 15, 2018 California Energy Commission workshop, industry experts agreed that in order to persuade the lithium mining industry to invest in California, this technology must be further developed and demonstrated to be technically and commercially viable, which

will require the construction of a demonstration plant at approximately one-tenth commercial scale, at an estimated cost of \$60 million.

A key step you could take to support this effort and California's geothermal industry would be to establish a lithium task force, to include relevant federal, state, and local agencies, industry, and other stakeholders, to attract the lithium industry to California. By identifying funding and investment opportunities, reducing project risk, creating market certainty, and supporting necessary infrastructure planning, such a task force could show major mining companies that California is ready to compete as a world-class lithium producer.

Support for lithium development should appeal across the political aisle, whether the question is domestic production, jobs, economic development, infrastructure, environment, or global competition. There is a national security rationale for obtaining a domestic supply of lithium, especially as the U.S. moves to a clean energy economy. California alone is home to twelve electric vehicle manufacturers and half of the U.S. electric vehicle sales. With production costs estimated to be well below those for Australia-China hard rock lithium mining processing operations, California could help the U.S. take market share away from Australia and China and secure domestic access. In addition, lithium recovery utilizing geothermal brine will have a lower environmental impact than current brine evaporation and hard-rock production methods used in Chile, Argentina and China. Lastly, lithium production has the potential to unleash billions of dollars of new economic development and hundreds of new jobs in California.

Thank you for your consideration. I am available to discuss further at your convenience. Please contact me at wpettitt@mygeoenergy.org with any questions.

Respectfully,



Dr. Will Pettitt
Executive Director
Geothermal Resources Council

Cc:

Chair David Hochschild, California Energy Commission
Wade Crowfoot, California Secretary for Natural Resources