



# GEOHERMAL RISING ACTION

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January 7th, 2026

The Honorable Bruce Westerman  
Chairman  
Committee on Natural Resources  
U.S. House of Representatives  
Washington, DC 20515

Dear Chairman Westerman and Natural Resource Committee Members,

Thank you for the invitation for Geothermal Rising to testify before the Committee on Natural Resources, Subcommittee on Energy and Mineral Resources, at the legislative hearing held on December 16, 2025, regarding geothermal permitting and deployment on federal lands.

On behalf of Geothermal Rising, I respectfully submit the enclosed written responses to the additional questions for the record following the hearing. These responses address issues raised by Members of the Subcommittee concerning geothermal permitting timelines, national security and energy resilience, exploration costs on federal versus non-federal lands, and the co-production of critical minerals from geothermal resources, as discussed during the hearing on the nine geothermal bills under consideration.

We appreciate the opportunity to contribute to the Committee's work and to provide additional information to support its deliberations. Please do not hesitate to contact us should the Committee or Subcommittee require any further clarification or supplemental materials.

Respectfully submitted,

Bryant Jones, PhD  
Executive Director  
Geothermal Rising



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## Questions from Rep. Wittman for Dr. Bryant Jones, Executive Director, Geothermal Rising

***1. Our national defense posture depends on reliable energy that does not falter when demand surges or when storms hit our coast. Naval shipyards and bases across Virginia must have access to steady power that supports operations, training, and the defense industrial base. Yet promising clean firm technologies, such as geothermal, continue to face long federal permitting delays. Meanwhile, our adversaries are moving quickly to control the energy technologies that will power artificial intelligence, advanced weapons systems, and critical infrastructure. A slow federal process places our national security at risk, because energy resilience is central to mission success.***

While America's defense infrastructure depends on firm, domestically sourced power that geothermal energy uniquely provides, federal permitting timelines continue to impede its deployment. Notably, geothermal developers do not face such barriers in countries like the People's Republic of China.

And geothermal development and use is not limited to the western United States. Next-generation geothermal technologies, including enhanced geothermal systems and closed-loop designs, are expanding geothermal's geographic potential beyond traditional western hotspots. This creates opportunities for deployment closer to eastern defense installations, but only if permitting pathways allow projects to move forward rapidly. Energy resilience is critical to mission success, and permitting modernization is central to achieving that resilience.

Geothermal is particularly well-suited for facilities where power interruption is not an option, including naval shipyards, training installations, data centers supporting defense operations, and critical manufacturing within the defense industrial base. The Department of War has recognized this value. The Defense Innovation Unit has invested in geothermal research and development specifically because of its resilience and reliability characteristics. Yet federal permitting delays continue to undermine that investment.

The Department of Energy has found that permitting delays can extend geothermal project timelines by five to seven years before developers are able to demonstrate an investment-grade resource. A single geothermal project on federal land may trigger National Environmental Policy Act (NEPA) review at as many as six separate stages: land use planning, pre-leasing, exploration permitting, exploration drilling, wellfield development, and power plant construction. Under current regulatory conditions, a project initiated today to support defense energy resilience may not deliver power until the mid-2030s at the earliest.

The Bureau of Land Management's (BLM) own analysis underscores the agency's cautious approach. In substantiating a recent categorical exclusion for geothermal exploration, BLM reviewed 26 projects and found that every one resulted in a finding of no significant impact (FONSI). But even then, the agency limited the exclusion to 20 acres of surface disturbance, meaning that 54 percent of those same projects could not qualify under the very rule their data was used to develop and justify.

Legislative solutions presented to the Subcommittee on December 16, 2025, are available to address these challenges.



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## ***2. How can the geothermal permitting reforms before the Committee today strengthen the resilience of military installations, shorten the timeline for advanced energy projects, and ensure that the United States sets the pace for energy innovation rather than allowing competitors like China to define it?***

The geothermal permitting reforms before the Subcommittee strengthen military energy resilience, accelerate advanced energy deployment, and reinforce U.S. leadership in energy innovation by addressing the core barriers that currently delay project development.

**On military resilience**, geothermal's value proposition is clear: it provides firm, 24/7 power at capacity factors exceeding 90 percent, requires no fuel deliveries, and has one of the smallest land footprints per megawatt-hour of any energy source. These attributes are critical for military installations where power interruption is not an option. Yet under current federal permitting timelines, a geothermal project initiated today may not deliver power until the mid-2030s—well beyond the timeframe needed to support near-term defense readiness.

**On shortening project timelines**, the bills operate as a coordinated package. The GEO Act and CLEAN Act establish clear and enforceable deadlines, including annual lease sales and 60-day windows for permit decisions. The STEAM Act extends categorical exclusions already available to oil and gas development to geothermal exploration in the same areas, a practical reform given that geothermal drilling uses similar techniques with lower environmental impact. The Geothermal Cost Recovery Authority Act ensures that the Bureau of Land Management has the resources necessary to meet these timelines, while the Gold Book and Ombudsman bills standardize procedures across field offices and introduce accountability for implementation. Today, identical review phases can take months in one BLM office and years in another—an inconsistency that alone deters investment.

**On global competitiveness**, the United States holds a clear advantage in geothermal resources, drilling technology, and subsurface engineering expertise, developed over decades of oil and gas innovation and directly applicable to next-generation geothermal systems. What the United States lacks is a permitting framework that allows these advantages to be deployed at speed and scale. Competitors such as China face no comparable regulatory delays. Enacting these reforms would signal that the United States intends to translate technical leadership into deployed capacity, rather than ceding that role to geopolitical competitors.



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## Questions from Rep. Stauber for Dr. Bryant Jones, Executive Director, Geothermal Rising

### **1. Dr. Jones, how do exploration costs compare between federal lands and non-federal lands, and what factors drive the difference?**

Exploration drilling costs for geothermal projects are driven primarily by subsurface conditions—such as depth, rock hardness, and temperature—rather than by whether the land is federally or non-federally owned. However, land ownership significantly affects project timelines, regulatory certainty, and investor risk, which in turn influence overall project cost. As is often the case in energy development, time is money.

Drilling activities—including exploration, resource confirmation, and production wells—typically account for one-third or more of a geothermal project's total capital investment. These costs are incurred early, before traditional project financing is available and before investors have confidence that a resource is investment-grade.

On federal lands, geothermal developers commonly face permitting timelines of seven to 10 years, with projects potentially subject to multiple National Environmental Policy Act (NEPA) reviews across different stages of development. Each review resets timelines and introduces additional litigation risk. By contrast, comparable projects on state or private lands—where federal permitting requirements do not apply—can often advance from exploration to development in one to three years. This disparity increases project risk on federal lands and raises the effective cost of exploration, even when drilling conditions are otherwise comparable.

### **2. Dr. Jones, in your testimony, you reference the ability of geothermal energy projects to co-produce critical minerals. How does this process work?**

Geothermal energy projects can co-produce critical minerals because many geothermal reservoirs contain hot brines that naturally carry dissolved minerals, including lithium. In a conventional geothermal system, these brines are brought to the surface to generate electricity, after which the cooled fluid is reinjected to sustain the reservoir.

With **Direct Lithium Extraction (DLE)**, lithium can be recovered from the geothermal brine prior to reinjection. After thermal energy is extracted for power generation, the brine passes through selective adsorption or ion-exchange systems that capture lithium ions while allowing other minerals and fluids to continue through the system. The lithium-depleted brine is then reinjected as normal, while the captured lithium is processed into battery-grade lithium carbonate or lithium hydroxide.<sup>1</sup>

This approach enables the co-production of clean, firm electricity and critical minerals using the same wells and surface infrastructure, without additional land disturbance. Compared to conventional lithium mining, geothermal DLE requires no open-pit mining or evaporation ponds, uses substantially less water, and is powered by the geothermal facility itself.<sup>2</sup>

The Salton Sea geothermal resource illustrates the scale of this opportunity. Analysis by **Lawrence Berkeley National Laboratory** estimates that approximately **2.6 million metric tons of lithium** could be recoverable from the region using current and anticipated extraction technologies.<sup>3</sup> If fully developed, the region could produce an estimated **600,000 metric tons of lithium carbonate equivalent annually**, sufficient to meet projected U.S. demand and potentially support exports, while simultaneously delivering reliable, domestic clean power.<sup>4</sup>



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<sup>1</sup>Lawrence Berkeley National Laboratory, "Sizing Up the Challenges in Extracting Lithium from Geothermal Brine," November 2021,

<https://newscenter.lbl.gov/2021/11/29/sizing-up-the-challenges-in-extracting-lithium-from-geothermal-brine/>

<sup>2</sup> California Energy Commission, "Pilot Scale Recovery of Lithium from Geothermal Brines," Publication Number CEC-500-2024-020 (March 2024), <https://www.energy.ca.gov/sites/default/files/2024-03/CEC-500-2024-020.pdf>

<sup>3</sup> Lilac Solutions, "Why Direct Lithium Extraction Needs a New Approach," October 2024,

<https://lilacsolutions.com/news/why-direct-lithium-extraction-needs-a-new-approach-the-limits-of-conventional-adsorbents>

<sup>4</sup> Office of Governor Gavin Newsom, "New Report Highlights the Promise of Lithium Valley," November 28, 2023,

<https://www.gov.ca.gov/2023/11/28/new-report-highlights-the-promise-of-lithium-valley/><sup>1</sup>