

Testimony of Sarah A. Jewett
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Chairman Stauber, Ranking Member Ocasio-Cortez, and Members of the House Natural Resources Committee Subcommittee on Energy and Mineral Resources, thank you for the opportunity to testify at today's hearing.

My name is Sarah Jewett, and I am Vice President of Strategy at Fervo Energy, a company that develops next-generation geothermal projects to deliver 24/7 clean and reliable electricity to the grid. I'm grateful that the Committee has convened today and grateful for the invitation to discuss a critical issue: leasing and permitting for geothermal projects on public lands.

Climate change is elevating the need for a diverse and reliable energy mix and global conflict is elevating the value of secure, resilient domestic energy supplies. Wind and solar are continuing to add capacity to the grid, and we now see a rapidly expanding role for clean, firm energies that produce around the clock and contribute to grid reliability and energy security.

Among these clean, firm energy options exists a long-slumbering giant: geothermal energy, which harnesses a nearly infinite well of heat from the earth's core to create baseload, emissions-free heat and power. This heat exists everywhere, but across vast swaths of the western United States, it happens to exist at a depth that is easily accessible using modern drilling and completions technology developed by the oil and gas industry during the shale revolution over the last twenty years.

With massive resource potential, strong demand, a uniquely American-made supply chain, a highly trained fossil fuel workforce ready to do the work, and U.S.-based companies like Fervo hard at work to bring geothermal energy to market, America is poised to take first on the global stage in geothermal energy leadership. I thank the committee for elevating the topics of leasing and permitting for geothermal projects, which will contribute to solidifying this leadership position.

Expanding Next-Generation Geothermal Energy Development on Public Lands Is a Critical Strategy to Enhancing American Energy Security

Utility-scale geothermal energy is produced by drilling wells into the earth to access high temperature rock and using water to pull heat from these rocks to the surface. This hot fluid is transported via pipeline to a nearby power facility where it is used to spin a turbine to generate electricity before being reinjected into the ground.

Over the last twenty years, as the shale revolution has boomed across the country and across the world, America has led cutting edge innovation in subsurface technologies that are directly transferable from the fossil fuel industry into the geothermal industry. With these projects will come stable jobs: according to the National Renewable Energy Laboratory's (NREL) JEDI job creation model, each new geothermal plant creates thousands of construction and operational jobs, including many that require workers with drilling expertise and oil and gas backgrounds, and hundreds of permanent positions at job sites in rural areas.

Today, geothermal energy only provides about 3,800 MW or 0.4% of the U.S.'s electricity, but we are seeing a period of extraordinary growth. The Department of Energy's (DOE) 2019 GeoVision report found that geothermal could provide over 120 GW of clean, firm power by 2050, accounting for 20% of U.S. electricity supply. With the right blend of federal policy and market incentives, the U.S. geothermal energy industry can leverage America's innovation and experienced workforce to create 24/7, clean, resilient power, securing our electricity supply in an era of international competition and growing national security threats.

Now is the time for the U.S. to take action to maintain leadership in a rapidly evolving geothermal energy landscape. International geothermal competition is heating up as quickly as we are scaling at home. In early 2023, the European Union announced a nearly \$100 million grant to demonstrate a next-generation geothermal project in Germany. This single grant totaled \$16 million more than what the Bipartisan Infrastructure Law provided to divide across multiple projects on home soil. China, too, has taken notice - the Chinese Government's energy development plans have included a substantial role for geothermal energy.¹ And, at the 2023 World Geothermal Conference, held in Beijing, researchers from the China National Geothermal Energy Center, China Academy of Engineering, and other institutions released findings touting China's "significant progress on geothermal technology."²

America is primed and ready to lead a highly productive geothermal resurgence, and we must act quickly to solidify that leadership position. For Congress and the Administration to achieve this goal and enhance U.S. energy security, we need to invest in next-generation geothermal energy development and improve support for its deployment on public lands, where the majority of these resources can be found.

Improved Leasing and Permitting for Next-Generation Geothermal Energy Is Essential to Ensuring a Clean and Reliable Electric Grid

Over 90% of American geothermal resources exist underneath federally managed lands, arming the U.S. with immense ownership of instigating a powerful domestic energy resource. Unfortunately, leasing of and permitting on federal lands can hinder projects rather than facilitate them, creating prolonged, unpredictable development timelines and introducing major financial risk.

I strongly believe that renewable energy development on public lands should incorporate careful consideration of environmental impacts. However, the current process of approving geothermal energy development is replete with duplicative assessments under the National Environmental Policy Act of 1969 (NEPA) and opaque, prolonged processing, making it difficult to plan, finance and build projects effectively.

Like any renewable energy project, geothermal energy developers require a certain set of conditions to build an economic and long-lasting system. Unlike solar and wind energy, whose conditions are easily observable above ground, the conditions required for a successful geothermal system exist thousands of feet below the surface, hidden by many layers of highly heterogeneous rock. Separate NEPA analyses are

¹ <https://www.efchina.org/Blog-en/blog-20220905-en>

² "High-Quality Development of China's Geothermal Industry—China Country Report of the World Geothermal Conference 2023." Xunsheng GUO, Liqiang DANG, Zhiguo HAN, Dianbin GUO. Proceedings World Geothermal Congress 2023 Beijing, China, September 15 – 17, 2023.

required to:

- Lease the land
- Perform low-impact resource exploration activities
- Perform full-fledged exploration drilling to confirm the resource
- Execute full-field drilling to complete the wellfield development
- Construct the power facility and connect to the grid

In addition to NEPA processes, subsequent activities including surface disturbance to build roads, pads, and right-of-ways and drilling and injecting into geothermal wells must be approved by in-state regulatory agencies and the BLM. These approvals add an additional layer of uncertainty to geothermal development. This means that developers like Fervo will often put large amounts of capital at risk before there is any assurance that power plants can be built, and this risk is not meaningfully retired as a project progresses.

For America to build and maintain leadership in geothermal energy development, it must address some of this uncertainty.

H.R. 1449 is a Productive Step Forward

Leasing

Section 43 of the Code of Federal Regulations requires the Bureau of Land Management (BLM) to hold competitive lease sales at least once every two years for lands available for leasing in a state that has nominations pending. Despite this requirement, Nevada is the only western state that has held regular, predictable lease sales, offering acreage ripe for geothermal development both competitively and non-competitively on an annual basis.

H.R. 1449 proposes highly productive modifications to the Geothermal Steam Act of 1970 to increase the frequency and predictability of geothermal lease sales. By reducing the time between lease sales and ensuring a replacement sale is held in the event that a sale is delayed or canceled, the volume of geothermal leases will increase, spurring more activity in the industry, allowing projects to commence, and increasing state and federal revenues from geothermal lease sales.

Permitting

After a full NEPA assessment has been approved, subsequent regulatory permitting processes must be completed in order to perform activities at any field site. To drill each geothermal well, a developer must submit a geothermal drilling permit application to the state BLM office and to additional in-state regulatory agencies. Today, there are no deadlines for review or approval of these permits, and an organization can be left waiting on their applications indefinitely, even if a NEPA environmental assessment is in place.

H.R. 1449 proposes highly productive deadlines for consideration of geothermal drilling permits. By requiring that a BLM acknowledge within thirty days whether an application is complete, H.R. 1449 encourages the approving agency to review the permit in a timely fashion, allowing for operators to plan and execute clean energy projects predictably.

Fervo Energy is Leading the Way on Developing Next-Generation Geothermal Energy on Federal

Lands In Collaboration with the Bureau of Land Management

Just a few weeks ago, Fervo celebrated a groundbreaking to mark the start of the exploratory drilling campaign for our newest utility-scale next-generation geothermal project, Cape Station, in Beaver County, Utah. Cape Station will provide 400 Megawatts of 24/7 carbon-free electricity beginning in 2026, employing 6,600 people during the construction period and a staff of 160 during the permanent operations phase. Fervo was proud to host Utah Governor Cox and the Department of the Interior's Principal Deputy Assistant Secretary for Land and Minerals Management Laura Daniel-Davis at the groundbreaking alongside Beaver County Commissioner Tammy Pearson and other local officials.

This project has been an outstanding success from a permitting perspective. Fervo engaged the BLM, local officials, state regulatory agencies, and local impacted stakeholders early and deliberately to maximize communication and educate all about the project. With this highly collaborative approach, the BLM staff at the state and local level have proven to be professional, responsive, and dedicated, and we have received decisions efficiently following clear and effective communication.

The Cape Station project is an example of how, with extensive planning, deep technical expertise and deliberate, conscientious community outreach, the permitting system currently in place in the U.S. can work well. But, as our national requirements for clean, firm power grow, and as other countries step up in the race to own the geothermal technologies of the future, we need to do more to maintain consistency across BLM state and local offices to ensure that we can predictably and effectively build projects at home.

Congress Should Take Further Action to Clear Up Roadblocks for Developing Next-Generation Geothermal Energy At Scale

Congress and the Administration can increase the consistency and efficiency of geothermal permitting while still maintaining robust environmental safeguards and community engagement and protections. To do this:

1. Congress should pass legislation authorizing a more holistic approach to permitting geothermal energy generation, including associated transmission resources. This would help avoid unnecessary delays and costs, provide more certainty for developers and investors, and enable faster development of firm renewable energy.
2. Congress and the Administration should take steps to reduce project development timelines by surging resources to expedite BLM permit consideration and allowing use of more efficient NEPA processes (such as Categorical Exclusions) when more in-depth environmental reviews have already been conducted.
3. Congress and the Administration should work together to create dedicated teams of geothermal experts. These experts are badly needed to develop best practices, build training materials and standard operating procedures, and provide technical support to field offices to ensure timely review of geothermal projects on federal lands

With the federal government making these efforts, private sector companies like Fervo can have more certainty over project timelines, lower project costs, and expand new technologies to harness renewable resources like the earth's heat to power our homes and businesses.

With this in mind, we applaud Representative Fulcher for his introduction of H.R. 1449, the Committing Leases for Energy Access Now (CLEAN) Act and for his continued leadership on geothermal energy.

The geothermal industry stands ready to scale clean, firm power, building out thousands of well-paying jobs across America. We look forward to working with you on this. Thank you again for the opportunity to testify, and I look forward to answering your questions.