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additional comments to July 9 presentation to the IEPReport Commissioner Workshop on Californiaâ€™s Geothermal Energy Resources

Additional submitted attachment is included below.

July 25, 2026

California Energy Commission
Docket Unit: MS-4
Docket No. 26-IEPR-04
715 P Street,
Sacramento, CA 95814

RE: July 9 presentation to the Integrated Energy Policy Report Commissioner Workshop on California's Geothermal Energy Resources: additional comments

Dear Vice Chair Gunda, Commissioner Gallardo, and Commission Staff,

I write to supplement my presentation at your July 9 Workshop on California Geothermal Resources on the potential of new technologies to advance the adoption of geothermal resources in California.

Continued research to improve our understanding and characterization of the subsurface is critical to identifying potential geothermal resources and managing seismicity, a salient concern in California. As referenced in my presentation, the use of artificial intelligence (AI) represents an increasingly important tool. Three recent developments in subsurface research merit the Commission's attention.

1. The Department of Energy's Nevada Hidden Systems Project has demonstrated the value of integrating multiple geoscience datasets for geothermal exploration. Training physics-informed AI on both California observations and synthetic thermal-hydro-mechanical-chemical (THMC) datasets may detect concealed thermal anomalies that are relevant to enhanced geothermal systems (EGS) development. The State of California can advance geothermal development with three steps:
    1. Make California's geothermal data AI-ready by systematizing and integrating geological, geophysical, geochemical, well, and remote sensing datasets. Berkeley Lab is working with the the State Geological Survey on the California Geothermal Data Compilation to advance this objective.
    2. Use Nevada analogues to develop long-term thermal-hydro-mechanical-chemical (THMC) models of representative hidden geothermal systems to generate realistic synthetic training datasets for physics-informed AI.
    3. Develop a physics-informed multi-modal (borehole, maps, 2D seismic) AI framework for finding exploration targets. The AI tool would combine statewide geological and geophysical maps with borehole observations and synthetic THMC simulations (as targets) to identify hidden geothermal

resources and quantify exploration uncertainty.

2. On Wednesday, July 22, the U.S. Department of Energy announced funding for Phase 1 Genesis Mission projects harnessing artificial intelligence to accelerate scientific discovery. Announced projects include a Berkeley Lab-led project using AI to gain a more complete picture of the subsurface, specifically to better understand and predict the subsurface fracture systems critical to the performance of geothermal wells.

   Fractures in Earth's subsurface control where fluids move underground, so understanding them is important for advancing geothermal energy. By combining seismic and electromagnetic observations from The Geysers geothermal field, this project will transform sparse observations into spatially continuous subsurface maps that reveal how fractures and fluid pathways exist deep underground, accelerating the often slow and meticulous process of characterizing and monitoring subsurface fluid flow.

   Phase II proposals will be submitted later this year and there may be an opportunity to build on this work.

3. Berkeley Lab has worked with industry on new tools to continuously monitor seismicity at much deeper depths, to expand EGS effectively and safely. Berkeley Lab developed the high-temperature seismometer and continuously monitored microseismic activity nearly 7,000 feet underground — where temperatures reach 338°F — at Fervo Energy's Utah EGS site, Cape Station. This represents a significant breakthrough in the detailed, long-term monitoring of geothermal reservoirs under high-temperature conditions and advances our capacity to understand – and mitigate – seismicity, potentially expanding our capacity to deploy EGS in areas where seismicity concerns may currently limit development.

Thank you for the opportunity to share these additional developments. Please note that these comments are my own and do not reflect official positions of Lawrence Berkeley National Laboratory, the University of California or the U.S. Department of Energy.

Eva Schill