



**BEFORE THE PUBLIC UTILITIES COMMISSION OF
THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes.	Rulemaking 25-06-019	11/21/25 04:59 PM R2506019
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**FERVO ENERGY COMPANY OPENING COMMENTS ON THE ADMINISTRATIVE LAW
JUDGE'S RULING SEEKING COMMENTS ON BUSBAR MAPPING OF ELECTRICITY
RESOURCE PORTFOLIOS FOR 2026-2027 TRANSMISSION PLANNING PROCESS**

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In accordance with the November 3, 2025, Administrative Law Judge’s *Ruling Seeking Comments on Busbar Mapping of Electricity Resource Portfolios for 2026-2027 Transmission Planning Process* (“Ruling”), Fervo Energy Company (“Fervo”¹) submits the following opening comments.

INTRODUCTION

Fervo thanks the Commission staff for their continued dedication to robust resource planning and transmission coordination with the California Independent System Operator (“CAISO”), especially for resources with high transmission utilization such as Enhanced Geothermal Systems (“EGS”). We greatly appreciate the Commission’s acknowledgement of EGS as a rapidly expanding technology that will play a fundamental role in California’s future reliability and decarbonization. The selection of EGS in RESOLVE is a critical step towards broader system and transmission planning, and Fervo is committed to supporting the Commission in supporting effective mapping of EGS in the IRP and TPP processes, a critical step to enable

¹ Fervo is a leading developer of utility-scale EGS projects, leveraging advanced drilling and subsurface technologies to access new geothermal heat resources previously deemed unsuitable due to limitations in conventional geothermal drilling methods. EGS already provides reliable, clean, and dispatchable power today and is rapidly scaling to meet the energy demands of the future.

Fervo has a portfolio of lease holdings across the West, including in California, and is actively developing projects to support the California grid, including the 500-megawatt Cape Station project in Beaver County, Utah. All 500 megawatts are contracted with California Load Serving Entities (“LSE”), including Southern California Edison (“SCE”), Ava Community Energy, Clean Power Alliance (“CPA”), Desert Community Energy, and Shell Energy, to meet procurement orders under D.21-06-035.

EGS developers to move projects forward at the scale necessary to achieve state goals. Fervo thanks the Commission for its dedication to aligning system and transmission planning, which is critical to developers delivering clean power to California customers, and looks forward to continued engagement.

In response to the November 3 Ruling and November 12 Energy Division Staff Webinar, Fervo offers the following recommendations to improve the busbar mapping of EGS, which are necessary to enable Fervo and other geothermal developers' ability to develop and deliver geothermal resources at the scale identified in the base portfolio:

- a. **Map more EGS resources to commercially active development Areas, primarily Utah and Nevada:** The latest IRP analysis correctly identifies significant value in clean firm resources, primarily geothermal, to address rising baseload demand and emerging overnight and winter risks. However, the model has limited insight into which zones are commercially viable on the development timelines anticipated. Utah and Nevada EGS development pipelines are significantly more advanced and plausible for near-term development than the zones selected, and have comparable cost and performance characteristics which would support reassignment in the portfolio based on commercial viability. Additionally, the transmission cost to import Utah and Nevada EGS is the most affordable inter-regional option as reflected in RESOLVE. Fervo emphasizes that EGS commercial development will primarily take place in Utah and Nevada over the next decade given the established permitting and development pathway in each state. For these reasons, the CPUC should map more EGS resources to Utah and Nevada in this busbar mapping iteration.
- b. **Integrate policy and tariff considerations into commercial interest and readiness modeling:** The EGS industry's robust domestic supply chain, built through strategic material sourcing planning, has made it exceptionally resilient to volatility in domestic and international trade policies. Fervo urges Commission Staff to integrate policy and tariff change implications into the busbar mapping commercial interest and readiness metrics. Transmission upgrades triggered by the busbar mapping will be functionally reflected in power delivery, underscoring the importance of integrating up-to-date commercial-readiness assumptions.
- c. **Update EGS generation profiles to align with industry, academic, and peer-reviewed standards:** Fervo recommends that Commission Staff work with industry stakeholders to revise and update the generation profiles to align with the Flexible Geothermal Economics Model ("FGEM") EGS generation profile, as it most closely aligns with industry generation

profiles. In reviewing the most recent RESOLVE profiles, Fervo has been unable to replicate or align the profiles with its own internal analysis of geothermal production, which may result in suboptimal portfolio development.

DISCUSSION

I. Map more EGS resources to Utah and Nevada.

The initial busbar mapping results show a significant number of geothermal MWs mapped to Oregon intertie points, including 1590 MWs at the Malin substation in the North of Greater Bay Area Zone.² Less than 400 MWs of geothermal are mapped to Utah (“UT”) and Nevada (“NV”) intertie points like Lugo and Eldorado, and these are based on in-development MWs that reflect only a small portion of the commercial interest in the area.³ The CPUC should map more MWs of EGS to Utah and Nevada intertie points because: (1) there is significant commercial interest for EGS in NV and UT; (2) the Cost of EGS is declining most rapidly in NV and UT; (3) Costs to import EGS to the CAISO border from NV and UT are lower than from OR; and (4) CAISO upgrades needed to facilitate imports support more than just EGS and are foundational to the entire portfolio. Each of these points is discussed in more detail below.

a. There is significant commercial interest and development activity for EGS in NV and UT

The Commission should align its planning for geothermal resources to resource areas which are realistically able to develop and deliver on the timeframes selected by RESOLVE. While geothermal resources may be feasible in several hotspots across the west, the bulk of active, viable development is occurring in Utah and Nevada. To further support Utah and Nevada's near-term EGS opportunity, Fervo points to the 3.3 GWs of geothermal resources seen in the Nevada Power Company's (“NVE”) interconnection queue and DeGolyer & MacNaughton's independent engineers' estimates confirming that the Cape Station project can support over 5 GW of development.⁴⁵⁶ Mapping additional EGS MWs to NV and UT interties aligns with the CPUC's intent to map resources in areas with commercial interest. The 1590 MWs mapped to Malin, on the other hand, appear to far

² See [Compact Dashboard – Initial Mapping 26-27 TPP Base Case](#), tab “2041_Criteria_Alignment”.

³ *Id.*

⁴ OASIS Site. Nevada Power Company. <http://www.oasis.oati.com/NEVP/>.

⁵ Fervo Energy Drills 15,000-ft, 500° F Geothermal Well Pushing The Envelope For EGS Deployment. DeGolyer & MacNaughton. June 11, 2025. <https://www.demac.com/degolyer-and-macnaughton-issued-the-first-reserves-report-on-enhanced-geothermal-systems-for-fervo-energy/>

⁶ Fervo Energy Drills 15,000-ft, 500° F Geothermal Well Pushing The Envelope For EGS Deployment. Fervo Energy. June 10, 2025. <https://fervoenergy.com/fervo-energy-pushes-envelope/>

exceed the commercial interest in the area based on the ranking of 5-, which indicates that total commercial interest is significantly less than the MWs mapped.⁷ This concern is amplified by the lack of active geothermal development these zones. While Fervo and other geothermal developers are exploring development potential across the West, the timelines for project permitting and developing the necessary local supply chain in the Pacific Northwest will materialize in the 2030s, not this decade. The busbar mapping of EGS resources to Oregon—which currently demonstrates higher resource and transmission costs and lower commercial interest —will divert much-needed state resources from more affordable and commercially viable busbars such as those in the East of Pisgah region.

b. The cost of EGS is declining most rapidly in NV and UT

EGS is a rapidly scaling industry, and Fervo is driving significant cost reductions across all areas of our business with the aspiration to become one of the most affordable energy resources on the market.⁸ These cost reductions will be most acute in Utah and Nevada due to their high-quality EGS resources, a predictable and navigable regulatory environment, and robust community support, which continue to make it the best choice for housing our industry as we scale. The RESOLVE inputs and assumptions demonstrate that Utah EGS is the most affordable out-of-state EGS option (see Figure 1).

Nearfield Average Candidate EGS Costs (\$/kW-yr)	
Oregon	\$859
Northeast CA	\$943
Idaho	\$855
Utah	\$853

Figure 1: 2036 Nearfield Average Candidate EGS Costs (\$/kW-yr) by state according to RESOLVE

c. Costs to import EGS to the CAISO border from NV and UT are lower than from OR.

Additionally, the transmission cost to import UT EGS is the most affordable inter-regional option as reflected in RESOLVE (Figure 2). Transmission infrastructure improvements from UT to CAISO intertie points have lower cost assumptions relative to costs from OR to the CAISO border.

⁷ See [Compact Dashboard – Initial Mapping 26-27 TPP Base Case](#), tab “2041_Criteria_Alignment”.

⁸ Horne, R., Genter, A., McClure, M. *et al.* Enhanced geothermal systems for clean firm energy generation. *Nat. Rev. Clean Technol.* **1**, 148–160 (2025). <https://doi.org/10.1038/s44359-024-00019-9>

Project Name	RESOLVE Resource	Total Cost (\$/kW-yr)
Corral to Malin	Oregon Geothermal	\$57.69
Robinson Summit to Eldorado	Nevada Geothermal	\$43.28
Utah to Eldorado	Utah Geothermal	\$44.63

Figure 2: Out-of-State EGS Resource Transmission Candidates.

Source: CPUC Energy Division Draft 2025 Inputs and Assumptions (I&A) for the 2024-2026 IRP Cycle Presentation. February 27, 2025. Slide 80.

d. CAISO upgrades needed to facilitate imports support more than just EGS and are foundational to the entire portfolio

Based on the data above, Fervo speculates that CAISO upgrades needed to import resources from South to North may be negatively impacting EGS resource selection and ultimately the mapping of EGS to UT and NV v. OR. However, upgrades to Path 26 and Path 15 could improve the cost/benefit analysis for EGS. As noted in the CPUC Ruling on the 2026-27 draft Transmission Planning Process portfolios, projected load growth in Pacific Gas & Electric’s territory is driving the need for more import capacity into PG&E’s territory. The Least Cost Comparison portfolio selects Path 26 and Path 15 expansions to support this need, mitigate congestion, decrease renewable curtailment and offset additional investment costs to meet the GHG target.⁹ These upgrades would significantly enhance California’s capacity to accommodate diverse resources under development across the West, including EGS. Mapping additional EGS MWs to UT and NV will ensure that this clean, firm resource is among those that can be delivered to support forecasted PG&E load.

With these considerations in mind, mapping EGS resources to NV and UT is a least regrets, near-term approach to make sure that busbar mapping reflects the significant commercial interest and advancements that are particular to UT and NV EGS. However, other viable regions may also emerge as EGS scales (see Figure 3). Therefore, Fervo recommends that the Commission prioritize NV and UT for this iteration of the busbar mapping and expand to other regions as EGS viability continues to increase.

⁹ Administrative Law Judge’s Ruling Seeking Comments on Electricity Portfolios for 2026-2027 Transmission Planning Process and Need for Additional Reliability Procurement dated September 20, 2025, p. 13.

Commercial readiness by geography

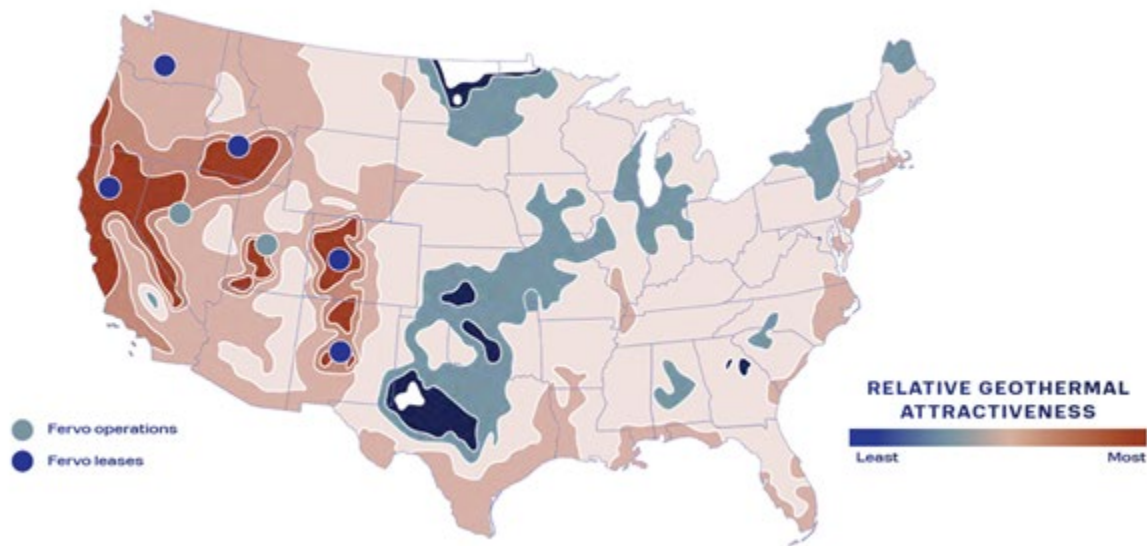


Figure 3: EGS Commercial Readiness by Geography. Simplified NREL EGS Resource Map with Fervo Energy operations and leases overlay.

II. Integrate policy and tariff considerations into commercial interest and readiness modeling:

Policy and tariff changes are influencing the energy industry. EGS has unique access to an unconstrained domestic supply chain, benefiting from a shared supply chain with the oil and gas industry. Drilling rigs and completion equipment are readily available to meet target development timelines, with lead times as low as 2 months. Fervo has established commercial partnerships with major rig suppliers, including Helmerich & Payne, one of the country's largest rig suppliers. Even at multiple GW of simultaneous development, enhanced geothermal would use a small fraction of the total available drilling equipment in the United States. In 2024, of the over 1,000 total domestic drilling rigs, nearly 400 were not in use and therefore were available for hire.¹⁰ The surplus of domestic rigs ensures reliable access to drilling equipment, even during periods of high oil prices. Moreover, subsurface development is not subject to China-related supply chain shocks that have recently affected the lead times of other energy sources.¹¹

¹⁰ Drilling Contractor. "2024 NOV census shows US onshore Is leveling out overall while offshore is still growing". 2024

¹¹ Associated Press. "China dominates solar. Trump tariffs target China." 2025.

The current portfolio mapping has not integrated the policy and tariff changes that have fundamentally reshaped how different energy technologies can be deployed. This omission will result in a portfolio that is not optimized for commercial realities. Fervo recommends that the Commission integrate revised lead-time and commercial-readiness assumptions to ensure energy resource delivery is adequately matched to transmission capacity.

III. Update EGS generation profiles to align with the industry, academic, and peer-reviewed standards:

As the Commission works to integrate the EGS generation profile into RESOLVE, which incorporates regional ambient temperature conditions, Fervo recommends that Commission Staff work with industry to align on how to model using best practices such as the FGEM model. The EGS generation shape reflected in the current RESOLVE modeling diverges from the FGEM and industry generation profiles. Fervo is happy to collaborate with and support the Commission in this integration.

CONCLUSION

Fervo appreciates the opportunity to submit these opening comments in response to the Ruling.

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Respectfully submitted,

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