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*Comment Received From: XGS Energy, Inc.*  
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**XGS Comments on 2026 IEPR Draft Scoping Order**

*Additional submitted attachment is included below.*



March 25, 2026

California Energy Commission  
Docket No. 26-IEPR-01  
715 P Street  
Sacramento, California 95814

**RE: XGS Energy, Inc. Comments on the Draft Scoping Order for the 2026 Integrated Energy Policy Report Update**

XGS Energy, Inc. (XGS) appreciates the opportunity to submit comments to the California Energy Commission (CEC) on the Draft Scoping Order for the 2026 Integrated Energy Policy Report (IEPR) Update.

XGS strongly supports the CEC's inclusion of an assessment of geothermal resources in the 2026 IEPR Update. To ensure that this assessment fully reflects the evolving geothermal landscape, the CEC should include a dedicated evaluation of next-generation geothermal technologies, which have the potential to significantly expand California's in-state clean firm resource base and provide critical reliability benefits.

**About XGS**

XGS Energy has developed a proprietary geothermal system to deliver clean, firm geothermal energy anywhere there is hot rock. XGS Energy's advanced geothermal system is a new technology that is distinct from conventional geothermal and other next-generation geothermal systems such as enhanced geothermal systems. XGS geothermal has significant development opportunities in the state of California, both by increasing the geothermal outputs of traditional geothermal fields and by unlocking geothermal potential in new locations that have not been suitable for traditional geothermal development. These new resources can provide clean, firm power for California.

XGS Energy's advanced geothermal technology also offers California distinct benefits:

- **Water independence.** The XGS system continuously recycles water in a closed loop, with negligible consumptive water loss over time. This is particularly important for the water-stressed communities of California and the western U.S.
- **Simplified construction and operations.** The XGS system does not require fracking, does not produce nor require management of any geothermal brine, and does not produce



any emissions. This simplified design streamlines the development of geothermal projects from zoning, permitting, and community impact perspectives, considering key historical concerns with and barriers to geothermal development.

- **Scalable.** XGS technology is highly scalable, with projects expected to range in size from 5 MW to projects larger than 200 MW. In some regions, phased development with XGS technology is expected to unlock over a gigawatt of new clean firm energy. This range in scale creates more flexibility to locate in load constrained pockets and more flexibility in executing Power Purchase Agreements with LSEs.

These key benefits will help enable additional geothermal deployment in more locations, at a scale aligned with California’s energy objectives and in many cases at an accelerated pace.

### **The CEC Should Include a Dedicated Assessment of Next-Generation Geothermal**

The Draft Scoping Order states that the 2026 IEPR Update will include an assessment of the challenges and opportunities for geothermal development in California. To fully capture the evolution of geothermal technologies, the CEC should include a specific and distinct assessment of next-generation geothermal, rather than evaluating all geothermal resources as a single category.

Next-generation geothermal technologies use drilling, completion, and/or hydraulic fracturing advances to enable heat extraction from hot rock that is naturally impermeable, expanding the geothermal resource potential past naturally occurring, permeable underground reservoirs.<sup>1</sup> Two prominent categories of next-generation geothermal being developed today are closed loop and enhanced geothermal systems.

Next-generation geothermal differs from conventional geothermal in several key respects:

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<sup>1</sup> U.S. Department of Energy (DOE), *Pathways to Commercial Liftoff: Next-Generation Geothermal Power*, [https://liftoff.energy.gov/wp-content/uploads/2024/03/LIFTOFF\\_Next-Generation-Geothermal-Power\\_Updated-2.5.25.pdf](https://liftoff.energy.gov/wp-content/uploads/2024/03/LIFTOFF_Next-Generation-Geothermal-Power_Updated-2.5.25.pdf)

- **Potential:** Next-generation geothermal can extract significantly more heat and energy potential from the subsurface.<sup>2</sup>
- **Geography:** These technologies are not bound by the same geographic limitations as traditional hydrothermal systems
- **Cost:** Next-generation systems are likely to become more cost-effective as the technology scales.

Given these distinctions, grouping next-generation geothermal with conventional geothermal risks understating both its potential and its unique development considerations. A dedicated assessment will enable more accurate characterization of resource potential, development timelines, and policy needs.

### **Next-Generation Geothermal Can Significantly Expand California’s Clean Firm Resource Potential**

Recent modeling by the California Public Utilities Commission (CPUC) demonstrates that next-generation geothermal could materially expand California’s in-state clean firm resource potential.

The CPUC estimates approximately **24 GW of in-state geothermal resource potential**, including both near-field and deep next-generation geothermal resources. Near-field next-generation geothermal has the potential to approximately double the capacity of existing geothermal resource areas from approximately 3.4 GW of conventional geothermal to 6.8 GW when next-generation technologies are included.<sup>3</sup> Deep geothermal resources, derived from temperature-at-depth datasets, could unlock an additional ~21 GW of potential.<sup>4</sup>

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<sup>2</sup> See the following reports on geothermal potential:

- U.S. Department of Energy (DOE), *Pathways to Commercial Liftoff: Next-Generation Geothermal Power*, [https://liftoff.energy.gov/wp-content/uploads/2024/03/LIFTOFF\\_Next-Generation-Geothermal-Power\\_Updated-2.5.25.pdf](https://liftoff.energy.gov/wp-content/uploads/2024/03/LIFTOFF_Next-Generation-Geothermal-Power_Updated-2.5.25.pdf)
- Aljubran, M. and Horne, R. “Stanford Thermal Earth Model for the Conterminous United States.” Stanford, 2024. [https://gdr.openei.org/submissions/1592\\_DOI\\_10.15121/2324793](https://gdr.openei.org/submissions/1592_DOI_10.15121/2324793)
- Clean Energy Task Force (CATF), *Unlocking California’s Geothermal Potential: A Strategic Opportunity for Clean, Firm Power*, <https://cdn.catf.us/wp-content/uploads/2025/06/23162128/california-geothermal-report.pdf>

<sup>3</sup> CPUC 2024 – 2026 Integrated Resource Planning (IRP) Inputs & Assumptions, February 2026, at p.74. [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2024-2026-irp-cycle-events-and-materials/2025\\_inputs\\_and\\_assumptions\\_report\\_20260210.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2024-2026-irp-cycle-events-and-materials/2025_inputs_and_assumptions_report_20260210.pdf)

<sup>4</sup> Ibid.



Next-generation geothermal technologies also expand siting opportunities beyond traditionally defined Known Geothermal Resource Areas (KGRAs). While these technologies are most likely to be developed near existing geothermal fields in the near term, they are not limited to those boundaries. For example, XGS has confirmed significant viable geothermal heat resources for its technology in Lake and Sonoma counties, outside of the existing defined Geysers KGRA in that region. This is further supported by data submitted by Sonoma Clean Power Authority showing known 1.5 GW of in-development geothermal projects in California, both inside and outside of the explicit boundaries of the KGRAs.<sup>5</sup>

In the future, XGS expects that additional next-generation geothermal potential will be unlocked in new areas outside of KGRAs, areas that have traditionally been unsuited to geothermal development. These include locations with good thermal resources, or hot rock, but no natural hydrothermal features or water access. As next-generation geothermal companies continue to explore thermal resources across California, additional development opportunities for this new geothermal technology are likely to emerge.

This data highlights that next-generation geothermal is not a marginal resource, but rather a potentially foundational clean firm resource that should be explicitly evaluated in statewide planning efforts such as the IEPR.

### **The CEC Should Identify Specific Actions to Enable Next-Generation Geothermal Development**

The Draft Scoping Order indicates that the CEC will identify potential actions to support expansion of in-state geothermal development. The CEC should ensure that these recommendations include targeted actions to support next-generation geothermal technologies, which face distinct development pathways and barriers.

In particular, the CEC should consider:

- **Enhanced Resource Mapping:** Expanding geothermal resource assessments beyond existing KGRAs using temperature-at-depth and subsurface datasets.
- **Alignment with CPUC Planning:** Coordinating IEPR analysis with CPUC Integrated Resource Planning assumptions for next-generation geothermal.

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<sup>5</sup> Sonoma Clean Power Authority Comments on the ALJ Ruling Seeking Comments on Busbar Mapping of Electricity Resource Portfolios for 2026-27 Transmission Planning Process at p.5.  
<https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M588/K056/588056548.PDF>



- **Transmission Planning Integration:** Identifying transmission upgrades and investment needed to increase capacity for high-potential geothermal regions, especially regions that are newly unlocked by next-generation technology.
- **Permitting and Siting Review:** Evaluating permitting processes and potential barriers specific to next-generation geothermal technologies.

These actions will help ensure that next-generation geothermal resources continue to be developed at a scale and pace consistent with California’s reliability and decarbonization goals.

### **Conclusion**

XGS appreciates the opportunity to comment on the Draft Scoping Order for the 2026 IEPR Update. Given the significant potential for next-generation geothermal to expand California’s clean firm resource base, the CEC should include a dedicated assessment of these technologies and identify targeted actions to support their development. Doing so will ensure that the IEPR reflects the full range of resources available to support California’s long-term energy reliability and decarbonization objectives.

Sincerely,

/s/ Caity Smith

Caity Smith

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