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XGS Comments on SB 100 Draft Results

Additional submitted attachment is included below.

March 20, 2026

California Energy Commission
Docket No. 23-SB-100
715 P Street
Sacramento, California 95814

RE: XGS Energy, Inc. Comments on the February 19, 2026 Hybrid Workshop on 2025 SB 100 Joint Agency Report Draft Results

XGS Energy, Inc. (XGS) appreciates the opportunity to submit comments to the California Energy Commission (CEC) on the February 19, 2026 Hybrid Workshop on 2025 SB 100 Joint Agency Report Draft Results.

While XGS appreciates the challenges in developing models at a time when baseline assumptions change quickly, the assumptions used for 2025 SB 100 Joint Agency Report are out of date to the extent that Draft Results are no longer relevant and could even be somewhat misleading. The outdated results mean the current draft report is not providing meaningful information for the Legislature. In the Final Report, the Joint Agencies should update key modeling inputs to accurately reflect new demand forecasts, the impacts of changes in federal tax policy, and next-generation geothermal resource potential. Doing so will ensure that California fully considers the clean firm resources necessary to achieve the state's SB 100 and greenhouse gas (GHG) reduction goals. These updates are critical now to maintain progress toward SB 100 and to ensure that the modeling provides a meaningful roadmap for long-term planning.

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 (EGS). 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 US West.

- **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.

Next-Generation Geothermal Should Be Included in SB 100 Modeling

In this SB 100 report, only traditional geothermal has been modeled, with no consideration for next-generation geothermal resources. As highlighted during the SB 100 implementation panel, there have been significant technological advances in next-generation geothermal that can contribute significantly to SB 100 goals. XGS agrees that these advancements materially change both cost trajectories and resource potential for geothermal as a whole and should be incorporated into SB 100 planning. Without consideration of next-generation geothermal, policymakers risk overlooking the policies necessary to advance the amount of critical clean firm resources the state truly needs.

Next-generation geothermal technologies, such as enhanced geothermal systems and closed-loop geothermal, have experienced rapid cost reductions and benefit from updated resource potential data, both within and outside California. These developments warrant explicit representation in the SB 100 modeling framework. The California Public Utilities Commission (CPUC) has already begun incorporating next-generation geothermal into its Integrated Resource Planning (IRP) modeling. The IRP framework includes cost assumptions, resource potential estimates, and

build-rate constraints, which provides a robust and readily available starting point that the SB 100 analysis can leverage.[1]

The CEC is currently only estimating geothermal resource potential for conventional geothermal at 3.4 GW.[2] In contrast, the IRP has resource potential for both near-field and deep next-generation geothermal **for a total resource potential of 24 GW in-state.** The CPUC estimates that near-field next generation geothermal potential in existing known geothermal resource areas is equal to conventional geothermal. **This doubles the amount of in-state geothermal potential in known areas from 3.4 GW to 6.8 GW.**[3] Deep field estimates increase potential further, with the CPUC leveraging federal data to convert the temperature-at-depth estimates into MW/km3 estimates. This unlocks an additional 21 GW of potential.[4]

These updated inputs have produced significantly different outcomes between the two modeling efforts. In the CPUC's most recent IRP portfolio, the model selects 1.7 GW of next-generation geothermal and 5.1 GW of geothermal overall by 2045.[5] By contrast, the SB 100 Report does not select comparable levels of geothermal capacity, likely reflecting the use of outdated inputs and assumptions. While some variation between models is expected, such a large difference in modeled geothermal deployment risks sending mixed signals to stakeholders about the role California intends these clean firm resources to play. Given the IRP's updated inputs and assumptions, the SB 100 analysis should seek to better align its treatment and selection of next-generation geothermal with the IRP results.

During the workshop, stakeholders emphasized out-of-state geothermal development and associated transmission planning needs. While imported geothermal resources may play an important role in meeting the SB 100 goals, in-state next-generation geothermal also represents substantial and commercially active potential that should be considered. California has some of the most favorable geothermal resources in the nation and is home to the largest producing geothermal complex in the world, The Geysers.

Commercial momentum towards increased in-state, next-generation geothermal production is already evident. In August 2025, XGS received two leases from the Bureau of Land

[1] *See* CPUC, *2024 – 2026 Integrated Resource Planning (IRP) Inputs & Assumptions,* February 2026, 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

[2] CEC, *Land-Use Screens for Electric System Planning* at figure 10. https://www.energy.ca.gov/publications/2022/land-use-screens-electric-system-planning-using-geographic-information-systems

[3] Ibid at p.74.

[4] Ibid.

[5] CPUC, *Decision Requiring 2029-2032 Electric Resource Procurement and Transmitting Portfolios for 2026-2027 Transmission Planning Process* (D.26-02-057) at Table 6.

Management (BLM) in Imperial County, California. In total, 13 parcels were leased by BLM for both traditional and next-generation geothermal development in Imperial, Lassen, and Modoc counties, which demonstrates strong commercial interest in in-state geothermal expansion.[6] Sonoma Clean Power's GeoZone similarly reflects active interest in next-generation geothermal development within California.[7]

Given the importance of a diverse and resilient portfolio to achieve SB 100 goals, the Joint Agencies should explicitly incorporate next-generation geothermal into the SB 100 modeling framework.

Modeling Inputs & Assumptions Should Be Updated to Reflect Important Changes Since 2024

The SB 100 modeling effort relies heavily on assumptions developed in early 2024. Staff acknowledged during the workshop that certain inputs are outdated. However, several developments since 2025 materially affect California's path toward SB 100 compliance and should be reflected in the Final Report.

Because the next SB 100 Report will not be submitted until 2029, failing to update these assumptions now would significantly limit the usefulness of the current modeling. The SB 100 analysis should serve as a credible indication of least-cost, reliable pathways to meet statutory goals; this requires incorporating material policy and market changes.

XGS recommends that the Joint Agencies prioritize updating the following inputs and assumptions:

- **Changes to Tax Credits**: During the workshop, Staff outlined that "Modeling does not consider changes in federal incentives, tax credits, IRA repeal,"[8] which significantly changes the costs of a wide variety of clean energy sources. During the workshop, Staff acknowledged that if the tax credits were removed from the modeling, the costs of the modeled portfolios would increase by 20-30%. Staff also noted that when tax credit policies are updated, the model generally selects more clean firm resources, including geothermal.

[6] Bureau of Land Management, "BLM geothermal lease sales in California net over $2.7 million", August 27, 2025, https://www.blm.gov/press-release/blm-geothermal-lease-sales-california-net-over-27-million
[7] *See* Sonoma Clean Power Authority *Comments on the ALJ Ruling Seeking Comments on Busbar Mapping of Electricity Resource Portfolios for 2026-27 Transmission Planning Process,* November 21, 2025, at p.5-6, https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M588/K056/588056548.PDF
[8] Workshop Presentation at slide 14.

- **Updated Load Growth, including from Data Centers:** During the workshop, various stakeholders discussed the impact data centers could have on meeting SB 100 goals. However, the 2023 demand forecast used for this report includes no data center load. The CEC's 2025 demand forecast includes 4,721 MW of data center load by 2040, which would create a very different load profile for the state as a whole and likely a more extreme impact in some local areas.[9] Staff noted that the Higher Hydrogen Demand Scenario model has a higher baseload demand that results in the selection of more clean firm resources, including 1 GW of additional geothermal.[10] While the long-term trajectory of hydrogen production remains uncertain, the modeling results demonstrate that higher baseload demand increases the value of clean firm resources. Data center load, which similarly increases baseload demand, could have comparable implications. To ensure that California is fully considering the impacts of data centers on meeting SB 100 goals, the 2025 IEPR data center forecast should be used for modeling.

At a minimum, if these updates cannot be made, the Joint Agencies should acknowledge in the Final Report that the modeling results capture a prior snapshot in time and do not accurately reflect California's current path toward SB 100.

Conclusion

XGS appreciates the opportunity to comment on the Draft SB 100 results. To ensure that the Final Report provides a credible and actionable roadmap, the Joint Agencies should update key inputs and assumptions to explicitly incorporate next-generation geothermal, reflect updated federal tax credits, and account for emerging load growth such as data centers. These updates will strengthen the modeling and better align the SB 100 analysis with California's reliability and decarbonization objectives.

Sincerely,

/s/ Caity Smith
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[9] CEC, "Item 6: Resolution Adopting the California Energy Demand Forecast, 2025-2045" , January 21, 2026, at slide 10, https://www.energy.ca.gov/filebrowser/download/9328?fid=9328
[10] Workshop Presentation at slide 37.