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Berkeley Lab Comments - Gas R&D Program FY 2025-26 Research Initiatives (23-ERDD-02)

Please see comments attached.

Additional submitted attachment is included below.

BERKELEY LAB
Bringing Science Solutions to the World

February 21st, 2025

Jonah Steinbuck
Director of the Energy Research and Development Division
California Energy Commission
715 P Street
Sacramento, California 95814

Re: Lawrence Berkeley National Laboratory Comments on Gas R&D Program FY 2025-26 Research Initiatives (23-ERDD-02)

Director Jonah Steinbuck,

On February 7th, Commission staff hosted a workshop to discuss the Gas Research and Development (Gas R&D) Program's proposed energy-related gas research initiatives for fiscal year (FY) 2025-2026. Berkeley Lab is pleased to present our comments in response to the aforementioned workshop.

Question: What metrics are suitable in evaluating and comparing existing technologies and networked GHPs?

Berkeley Lab comments that the following metrics are suitable:

- Energy supply chain security and energy price stability.
- GHG emissions, and green premium (e.g., cost of saved CO2 relative to other technologies).
- Life cycle costs and investment costs relative to alternate systems.
- Opportunity of Networked Geothermal Heat Pumps to provide utility scale load flexibility.
- Reduction of electricity use and level of service provided during resilience events (e.g., brown-out or heat wave).

What outcomes of a successful networked GHP demonstration might encourage community support for gas decommissioning?

Berkeley Lab comments that the following outcomes might encourage community support for gas decommissioning:

- Ability to modularly build out systems as capital becomes available.
- Ease of design rules for thermal system design (operating temperature) and control design (modularity and robustness of control, and ability to shift loads).
- Robustness to technology changes, such as inserting of new storage technologies into a system over its lifetime, sometimes referred to "resilience to technology changes."
- Resilience to extreme climate events (heat waves, cold snaps).

Berkeley Lab appreciates the opportunity to provide these comments in response to the Gas R&D Program FY 2025-26 Research Initiatives (23-ERDD-02) workshop.

The following individual contributed comments: Michael Wetter

Sincerely,
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