

Date of Hearing: April 22, 2026

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Cottie Petrie-Norris, Chair

AB 2088 (Papan) – As Amended April 13, 2026

SUBJECT: Public Utilities: thermal energy networks

SUMMARY: Authorizes gas corporations and other utilities regulated by the California Public Utilities Commission (CPUC) to own and operate thermal energy service as a regulated utility service through thermal energy networks (TENs), directs the California Energy Resources Conservation and Development Commission (CEC) to develop technical standards for TENs, and requires the CPUC to initiate a proceeding to establish a regulatory framework for TENs deployment. Specifically, **this bill:**

- 1) Defines “thermal energy network” as a multiuser system of piped noncombustible fluids that are used for transferring thermal energy into and out of buildings or industrial processes for the purpose of providing zero-emission heating, cooling, or process heat.
- 2) Specifies that a “thermal energy network” may use diverse noncombustion thermal sources, including, but not limited to, geothermal energy, industrial waste heat, data center waste heat, wastewater heat recovery, or ambient heat from water or air, and that a TEN shall not use combustion for the primary generation of thermal energy within the network.
- 3) Authorizes a utility regulated by the CPUC to own and operate thermal energy service as a regulated utility service through a TEN.
- 4) Requires the CPUC to ensure that the substitution of thermal energy service for gas service offers an adequate substitute for the thermal end-use energy needs of customers.
- 5) Prohibits a utility regulated by the CPUC from recovering costs for gas infrastructure in areas approved to be served by a TEN, unless those costs are necessary to ensure the safety of decommissioned gas infrastructure.
- 6) Requires the CPUC and gas corporation to prioritize the use of the existing gas utility workforce for the transition to TEN operations and prohibits a gas corporation from laying off gas utility workers as a result of that transition.
- 7) Directs the CPUC to initiate, on or before December 31, 2027, a proceeding to establish a regulatory framework for the provision of cost-effective thermal energy service by gas corporations or other public utilities.
- 8) Requires the CEC, in consultation with the CPUC, to develop technical standards for TENs to ensure intersystem compatibility, energy efficiency, safety, and transparent operating and performance reporting.

EXISTING LAW:

- 1) Requires every public utility to furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, ... as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public. This is commonly referred to as the utility's "obligation to serve." (Public Utilities Code § 451)
- 2) Authorizes the CPUC to supervise and regulate every public utility in the State and do all things, whether specifically designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction. (Public Utilities Code § 701)
- 3) Authorizes the CPUC after a hearing to ascertain and fix just and reasonable standards, classifications, regulations, practices, measurements, or services to be furnished, imposed, observed and followed by all electrical, gas, water, and heat corporations. (Public Utilities Code § 770)
- 4) Requires the CPUC to require each gas corporation to provide bundled basic gas service to all core customers in its service territory unless the customer chooses or contracts to have natural gas purchased and supplied by another entity. (Public Utilities Code § 328.2)
- 5) Requires the CPUC to establish voluntary pilot programs for "priority neighborhood decarbonization zones" by January 1, 2026. Utilities may implement up to 30 projects in which they are relieved of the obligation to serve if at least sixty-seven percent of customers agree to the project, and projects with one hundred percent consent do not count toward the 30-project limit. (Public Utilities Code §§ 663, 451.9)
- 6) Defines "thermal energy networks" as "a network of piped noncombustible fluids used for transferring heat into and out of buildings for purposes of providing zero-emission heating and cooling services." (Public Utilities Code § 660)
- 7) Requires the CPUC to evaluate costs, benefits, and implementation barriers of TENs. (Public Utilities Code § 665)

FISCAL EFFECT: Unknown. This bill is keyed fiscal and will be referred to the Assembly Committee on Appropriations for its review.

BACKGROUND:

Natural gas in California – Approximately 77% of California's homes receive natural gas utility service. This equates to roughly 11+ million households out of a total of 14.5 million. Another 450,000 commercial customers and nearly 36,000 industrial customers receive gas service, based on the data (2021) from the Energy Information Administration. Southern California Gas (SoCalGas) and Pacific Gas & Electric (PG&E) provide gas utility service to about 5.9 million and 4.5 million customer service connections, respectively, while San Diego Gas & Electric (SDG&E) provides service to over 800,000 customer service connections. A few additional smaller gas investor-owned utilities (IOUs) provide service, including Southwest Gas and West

Coast Gas. Additionally, there are a few publicly owned gas utilities (POUs), including the City of Coalinga, Long Beach Gas & Oil, City of Palo Alto, City of Susanville, and City of Vernon. These gas POUs are not regulated by the CPUC.

The state's natural gas utilities operate over 100,000 miles of transmission and distribution pipelines, including what is referred to as the "back-bone" system, and thousands more miles of service lines. According to a 2021 CPUC Staff Proposal, most gas used by the residential sector is for space and water heating, with smaller percentages used for cooking, fireplaces, clothes drying, and a few other functions. Dual fuel homes – those using both gas and electricity – are the dominant type of home in California. California is the state with the highest percentage of households using natural gas for cooking (70%).¹

Obligation to serve – Under the "regulatory compact," a utility is granted an exclusive service territory (franchise), in exchange for accepting the responsibility to serve everyone in that territory and submit to rate-regulation by an economic regulator (a public utilities commission), where the utility has the opportunity to earn a rate of return. This acceptance of serving everyone in the territory is known as the utility's obligation to serve. The obligation to serve is articulated in various Constitutional provisions, CPUC decisions, and statutes; most notably, in Public Utilities Code Section 451, which requires utilities "to furnish and maintain...adequate, efficient, just, and reasonable service." The obligation to serve applies to both gas and electric service within a given boundary, even when a single utility – such as PG&E – offers both. In other words, the obligation to serve – at least as currently applied – compels offerings of both electric and gas service to customers, even if a customer's full energy needs could be met by only one resource.

California's gas distribution system in transition – A 2024 CEC study found that targeted building electrification paired with strategic gas decommissioning can produce net benefits for the state, gas ratepayers, and electric ratepayers, but that without policy and regulatory reforms, these projects are unlikely to achieve the scale required to significantly reduce gas system costs. The study identified several barriers requiring action by the Legislature, state agencies, and utilities, including the need for longer-term gas infrastructure planning processes, additional funding for building electrification, and reform of the obligation to serve, which, as currently applied, requires 100 percent customer opt-in before gas infrastructure can be decommissioned. The study also found that low-income households and renters face the greatest exposure to future gas rate increases, as they are least able to electrify independently.² SB 1221 (Min, Chapter 602, Statutes of 2024) – discussed in the following section – addressed several of these barriers, including partially reforming the obligation to serve and requiring longer-term gas infrastructure planning through annual utility mapping requirements.

SB 1221 (Min, Chapter 602, Statutes of 2024) implementation. – In 2024, the California legislature passed SB 1221, requiring the CPUC to establish a voluntary zonal decarbonization

¹ U.S. Energy Information Administration; *In 2020, most U.S. households prepared at least one hot meal a day at home.* <https://www.eia.gov/todayinenergy/detail.php?id=53439>

² Gold-Parker, Aryeh, et al. 2024. *An Analytical Framework for Targeted Electrification and Strategic Gas Decommissioning: Identifying Potential Pilot Sites in Northern California's East Bay Region.* California Energy Commission. Publication Number: CEC-500-2024-073.

program and designate priority neighborhood decarbonization zones. Decarbonization zones will be geographic areas where the CPUC may authorize projects facilitating the transition of some customers' natural gas service to cost-effective, zero-emission alternatives. The voluntary zonal decarbonization program will establish procedures and requirements for these projects. Zero-emission alternatives are ways of providing gas customers with suitable substitution energy service that does not require new investment in gas distribution lines, such as, but not limited to, electrification.

The CPUC is implementing SB 1221 through its Long-Term Gas Planning Proceeding, R.24-09-012. Implementation is actively underway, with several key milestones already completed or in progress. All four major gas corporations – PG&E, SoCalGas, SDG&E, and Southwest Gas – filed maps by the July 1, 2025, deadline identifying planned gas distribution pipeline replacement projects. Smaller utilities (West Coast Gas, Alpine Natural Gas, and SCE's Catalina Island propane service) also filed compliance materials. The utilities also submitted gas distribution cost data to the CPUC in November 2024, including distribution replacement costs, regulator station replacement costs, and maintenance costs – information that will inform zone designation and pilot project cost-effectiveness analysis. The pilot program allows utilities to implement up to 30 projects in which they are relieved of the obligation to serve if at least 67% of customers in the zone agree to the project. Projects with 100% customer consent do not count toward the 30-project cap. SB 1221 also requires the CPUC to evaluate the costs, benefits, and implementation barriers of TENs, as defined.³

COMMENTS:

- 1) *Author's Statement.* According to the author, "California has committed to achieving carbon neutrality by 2045 while also requiring utilities to provide safe and reliable service under Public Utilities Code Section 451. However, utilities lack clear authority to deploy emerging energy infrastructure, such as thermal energy networks, as an alternative to natural gas systems. Buildings and industry remain major sources of greenhouse gas emissions due to natural gas use, and aging gas infrastructure is becoming more expensive to maintain and replace; these costs are increasingly borne by customers. AB 2088 addresses this gap by authorizing utilities to provide thermal energy service, establishing a regulatory pathway for investment in modern energy infrastructure. The bill supports emissions reductions while maintaining reliable service, improving long-term system planning, and providing a practical alternative to continued investment in aging gas infrastructure."
- 2) *Purpose of Bill.* This bill seeks to provide greater regulatory certainty to gas corporations and other utilities that want to deploy TENs by expressly authorizing those utilities to provide thermal energy service as a regulated utility service, and by requiring the CEC to develop technical standards for those networks, and for the CPUC to establish a regulatory framework for their deployment.

³ "SB 1221 Implementation." CPUC. Accessed April 16, 2026. <https://www.cpuc.ca.gov/industries-and-topics/natural-gas/sb-1221-implementation>

- 3) *Premature?* SB 1221 (2024), discussed above, authorized a limited number of voluntary neighborhood decarbonization zone pilot programs, which are currently being implemented. Those pilots are intended to generate real-world data on the costs, benefits, and operational challenges of transitioning customers from gas service to alternative zero-emission energy service – information that could be directly relevant to the regulatory framework this bill would direct the CPUC to establish. The Committee may wish to consider whether this bill is premature in light of those pilots.
- 4) *Clarifying the definition of “thermal energy network.”* This bill introduces a new definition of “thermal energy network” that appears to differ from the definition already codified in Public Utilities Code Section 660. Using inconsistent definitions across code sections creates interpretive uncertainty for utilities, regulators, and courts, and could allow activities to qualify as a TEN under one provision but not the other. *The Committee recommends striking the bill’s definition of “thermal energy network” and cross-referencing the existing definition in Public Utilities Code Section 660.*
- 5) *Ratepayer Protections.* The bill includes some substantive provisions addressing the cost implications of TEN deployment, including a requirement that the CPUC develop a cost-effectiveness methodology for evaluating TEN proposals, and a prohibition on utilities recovering costs for gas infrastructure in areas approved to be served by a TEN, except where necessary for safety. However, the bill does not establish clear principles to prevent non-benefitting customers from subsidizing TEN deployment and is not specific about how TEN costs – including unrecovered gas distribution infrastructure costs attributable to customer departure – should be allocated among ratepayers more broadly. These protections are particularly necessary because the CPUC proceeding contemplated by this bill would operate outside of the context of the SB 1221 (2024) pilot programs, under which stranded cost issues are currently being addressed in the CPUC’s Long-Term Gas Planning Proceeding, referenced above. Absent explicit ratepayer protection requirements in this bill, there is no guarantee that the CPUC’s regulatory framework for broader TEN deployment would encompass these cost allocation issues. *For these reasons, the Committee recommends amendments to fill these gaps by establishing minimum ratepayer protection criteria within the CPUC rulemaking framework. The core principle underlying these recommendations is that TEN deployments should be sequenced and cost-allocated in a manner that generates offsetting savings for the gas system rather than layering new infrastructure costs on top of existing obligations.*

The Committee notes, however, that even considering the Committee’s recommended amendments, further work will be needed to reconcile the cost-effectiveness methodology in this bill with the framework established under SB 1221, and the Author may wish to continue to work on resolving these inconsistencies as the bill moves forward. Specifically, the bill’s cost-effectiveness methodology incorporates health, environmental, and greenhouse gas emissions impacts as factors, whereas SB 1221 explicitly limits cost-effectiveness calculations to energy benefits and prohibits the use of nonenergy benefits for that purpose.

- 6) *Consistent CPUC proceeding timelines.* The bill requires the CPUC to initiate a regulatory proceeding by December 31, 2027, regardless of whether predicate work has

been completed. SB 1221 (2024) separately directed the CPUC to evaluate the costs and benefits of TENs and identify implementation barriers, and this bill proposes that the CEC develop technical standards – work that should inform any proceeding establishing a regulatory framework for TENs deployment. Requiring the CPUC to open a new proceeding before those inputs are available risks duplicative proceedings, inconsistent policy outcomes, and a regulatory framework built on incomplete information.

Based on information provided to this Committee, the CPUC has not yet begun the TENs study required under SB 1221 and has no established timeline for doing so. The Legislature and the CPUC have an interest in ensuring these workstreams are aligned.

For those reasons, the Committee recommends amendments to align the timelines of the SB 1221 TENs evaluation, the development of the CEC technical standards, and the new CPUC proceeding established by this bill.

- 7) *Technical and clarifying amendments. The Committee recommends several technical and clarifying amendments to improve the internal consistency and clarity of the bill. The Committee also recommends striking unsubstantiated legislative findings.*
- 8) *Related Legislation.*

AB 2313 (Berman) requires the CPUC to establish a Gas Distribution Service Line Replacement Alternatives Program requiring gas corporations to offer eligible gas customers a monetary incentive to replace gas appliances with electric alternatives and cease gas service as an alternative to a planned gas distribution service line replacement. Status: Set for hearing on April 22, 2026 – Assembly Committee on Utilities and Energy.

SB 1359 (Stern) establishes the Gas Transition Responsibility and Electrification Act, directing the CPUC to prioritize electrification and nonpipelined alternatives to capital investment for natural gas distribution infrastructure. The bill requires the CPUC to develop a framework for the orderly and equitable transition of the natural gas distribution system, including minimizing ratepayer impacts. Status: Set for hearing on April 21, 2026 – Senate Committee on Energy, Utilities and Communications.

- 9) *Prior Legislation.*

SB 1221 (Min, 2024) requires the CPUC to establish a voluntary zonal decarbonization program and designate priority neighborhood decarbonization zones. Also directed the CPUC to evaluate the costs and benefits of TENs and to identify potential implementation barriers. Status: Chapter 602, Statutes of 2024.

SB 527 (Min, 2023) would have required the CPUC, in consultation with gas corporations, to develop and supervise the administration of the Neighborhood Decarbonization Program to cease providing gas utility service in an area within its service territory if the CPUC determines that adequate substitute energy service is reasonably available to support the energy end use of affected gas customers. Status: *Held* – Senate Committee on Appropriations.

SB 1477 (Stern, 2018) required the CEC to develop a statewide market transformation initiative to transform the state's market for low-emission space and water heating equipment for new and existing residential and nonresidential buildings and to develop an incentive program to fund near-zero emission technology for new residential and commercial buildings. Status: Chapter 378, Statutes of 2018.

AB 2339 (Williams, 2012) required the CEC, in consultation with the CPUC and other stakeholders, to evaluate and recommend policies and implementation strategies to overcome barriers to the deployment of geothermal heat pump and geothermal ground loop technologies, and to include those recommendations in the 2013 Integrated Energy Policy Report. Status: Chapter 608, Statutes of 2012.

REGISTERED SUPPORT / OPPOSITION:

Support

Industrious Labs (Sponsor)
350 Humboldt
Asian Pacific Environmental Network
California State Pipe Trades Council
Center for Community Action and Environmental Justice
Central Coast Alliance United for a Sustainable Economy
CleanEarth4Kids.Org
Climate Action Campaign
Climate Reality Project Orange County Chapter
Climate Resolve
Coalition of California Utility Employees
Environmental Protection Information Center
Families Advocating for Chemical and Toxics Safety
Fresnans Against Fracking
Los Angeles Alliance for a New Economy
Project 2030
Redeemer Community Partnerships
Sierra Club California
SoCal 350 Climate Action
Southern California Association of Scaffold Contractors
Southern California Contractors Association
Sunflower Alliance
U.S. Green Building Council California

Opposition

None on file.

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