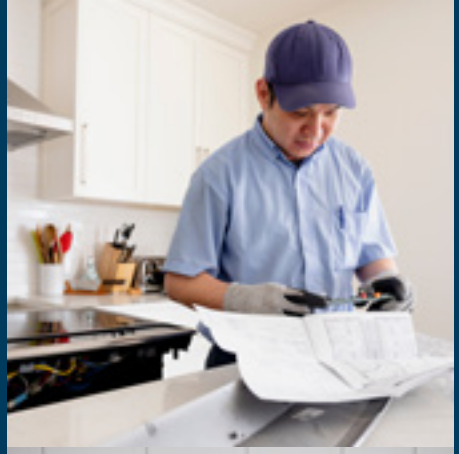

GO BIG, SAVE BIG

Approaches to Fund Building Electrification in California

UCLA School of Law
Emmett Institute on Climate Change & the Environment

GO BIG, SAVE BIG

Approaches to Fund Building Electrification in California

By Denise Grab,[1] Brennon Mendez,[2] and Craig Holt Segall[3]

2025

1 Denise Grab is the Energy Law and Policy Project Director for the Emmett Institute on Climate Change and the Environment at UCLA School of Law.
2 Brennon Mendez is the Emmett/Frankel Fellow in Environmental Law and Policy at UCLA School of Law.
3 Craig Holt Segall, an independent consultant, supports many foundations and nonprofits on decarbonization strategy. He has advisory academic posts at the University of Edinburgh Law School, the New York University Law School, and Berkeley Law, and is a former Deputy Executive Officer of the California Air Resources Board. All opinions are his own.

COVER PHOTOS: OFFSET; ANTON KOR/SHUTTERSTOCK; NICOLAS-BACKAL/UNSPLASH; WESTEND61ONOFFSET

UCLA School of Law Emmett Institute on Climate Change & the Environment

Executive Summary

CALIFORNIA IS TAKING ACTION ON ITS COST-OF-LIVING CHALLENGES, from planning for more housing to focusing on lowering electricity rates. At this stage, electrical heating and cooling can substitute for natural gas for most uses. Indeed, agencies, from air regulators to grid planners, are actively engaged to deliver electrical energy at lower cost to Californians, and to help swap out older gas appliances with cost-saving electrical ones. Home electrification unlocks significant long term opportunities for residents, including more efficient energy use (and hence lower bills), appliances like heat pumps that can provide heating and cooling at once and for lower costs than gas appliances, and even the potential to store energy in home batteries, which both protects people during extreme weather events and opens the chance to be compensated for supporting the overall power grid. States across the country are moving towards accelerated home electrification for these reasons[4] But another critical opportunity is hiding in plain sight: The fact that the state spends billions on running *two* parallel energy systems, gas and electric, when it ultimately only needs one – an expanded, modern, and efficient power grid. Shifting that spending over time to create a *single* power delivery system unlocks state-wide savings while lowering costs for renters and homeowners.

4 See NESCAUM, Multistate Action Plan: Accelerating the Transition to Zero-Emission Residential Buildings (Fall 2025), https://www.nescaum.org/documents/Residential-Buildings-Multistate-Action-Plan.pdf

PHOTO: GABRIEL L/UNSPLASH

Far-sighted policymakers can start aligning gas system planning, and spending, with the long-term need for an expanded electrical grid that will largely replace it over time. Doing so will also help better efficiently use ratepayer dollars: California pours over $10 billion annually in ratepayer money into its gas system, with no clear transition plan. Those are funds that can be gradually shifted to improve and electrify people's homes, shifting spending from a system we don't need in the long-term to home improvements and infrastructure that will make for a healthier and more affordable state.

Experts have identified the need for a clear transition plan, starting with clear planning and building towards cost saving shifts in spending, as critical for reducing overall system costs. As the state works to become more affordable, it is time for policymakers to focus on how to right-size system spending, shifting from two parallel and expensive systems towards one affordable one. Moving quickly towards this goal will save money: Every year that California delays cementing transition plans results in billions more dollars in potential stranded assets – which will ultimately be a threat to ratepayers without a clear plan to minimize additional stranding risk and to begin reallocating spending in more useful ways.

After all, California *has* abundant energy that can be supplied to everyone in high quality homes – if it better distributes its energy infrastructure spending for maximum public benefit. California households (particularly lower and middle income households) need financial resources to support the upfront costs of electrifying their homes, and billions of dollars that could support these needs are being spent on the gas system instead. The most comprehensive source of funding that could support electrification, and enable continuing implementation of existing and proposed health-protective electric appliance standards to extend electrification, would be using money that would otherwise be sunk into the increasingly redundant gas network. Moreover, a coherent electrification infrastructure plan can also align system spending with plans to electrify other sectors – including the freight system and major industries – by ensuring infrastructure, and funds, extend in sensible ways. Though gradual reforms and smaller funding sources are certainly useful, change at scale will ultimately mean redirecting the billions in funds now being spent to entrench legacy infrastructure – and the sooner that change happens, the more revenue will be available to manage change.

California *has* abundant energy that can be supplied to everyone in high quality homes – if it better distributes its energy infrastructure spending for maximum public benefit.

To unlock these savings for ordinary Californians, policymakers should take up the expert recommendations of state agency staff and international experts and help utilities, their regulators and investors, air quality officials, and local governments align around

While a comprehensive approach to gas system transition will ultimately be necessary to unlock the greatest cost savings for ratepayers, more targeted interventions can help secure sources of electrification funding in the interim.

an infrastructure plan that sets a long-term course towards unifying our energy system around electricity. Ultimately, to unlock capital at the scale needed to drive forward equitable electrification, the state will need to clarify—in CPUC decisions and by statute—that spending can and must shift from the gas system to electrification.

While a comprehensive approach to gas system transition will ultimately be necessary to unlock the greatest cost savings for ratepayers, more targeted interventions can help secure sources of electrification funding in the interim. While the CPUC has discretion to proceed on many of these fronts with existing statutory authority, it has been reluctant to do so, and so statutory clarity is necessary.

Among other measures, the CPUC should: immediately require non-pipeline alternatives tests for all gas system investments; tie depreciation and accelerated amortization or securitization to a set end date for the gas system; and direct utilities to prioritize gas system segments for retirement, while using saved funds to support electrification. Promising near-term funding options that the CPUC could undertake using existing statutory authority include: requiring gas utilities to give customers the option of subsidized electrification in lieu of a service line replacement that

PHOTO: ARDI WEBS/SHUTTERSTOCK

is scheduled for their property; redirecting gas efficiency program funding toward electrification; and adopting an inclusive utility investment framework that would allow customers to finance electrification measures through a charge on utility bills over time. Additional sources of funding for electrification could come from public financing mechanisms such as: green bank financing and private equity partnerships; cap-and-invest revenue collateralization; insurance system funding; and public procurement.

Further statutes could help unlock innovative funding strategies, including: creating a clean heat standard, where a gas utility would have to meet greenhouse gas reduction targets, either by directly funding electrification measures or buying credits whose proceeds could support low-income household electrification; or developing mitigation fees tied to appliance emissions standards, where the revenue could create an additional pot of funding for electrification measures.

The history of major energy infrastructure projects – from rural electrification to the Tennessee Valley Authority to California's own major civil engineering works – has been one of shared government ambition that yields major social good.

California is well positioned to unlock this opportunity. The state has made big visions real repeatedly over its history, from its water and transportation systems to pioneering urban electrification in the early days of the power grid. The history of major energy infrastructure projects – from rural electrification to the Tennessee Valley Authority to California's own major civil engineering works– has been one of shared government ambition that yields major social good. The state can combine clear public goals with private and public investments to unlock an affordable energy system for everyone.

California can reengage that tradition by recognizing the gas transition as a chance to build big – and to save big. Every year we kick the can down the road, we are spending roughly $10 billion on a system that is at risk of quickly becoming obsolete; the responsible thing to do is to make real plans for revenue at that scale. Slow and gradual change is the *opposite* of affordable policy while clear direction and efficient revenue-shifting unlocks funds and savings. By harnessing the collective power of these funding strategies, California policymakers can help to support an equitable and affordable transition to cleaner, healthier, and more efficient electric appliances for all Californians.

Introduction

CALIFORNIANS ARE PAYING FOR TWO ENERGY SYSTEMS when they soon will need only one. Because electrical appliances can largely replace gas appliances, and save most ratepayers money while cutting air pollution, the use case for a vast gas distribution system is looking shaky. Within a decade, as electric technology gets ever cheaper, and reforms that cut electricity rates go more fully into effect, the economic case for keeping the gas system running will look even shakier. Setting a clear direction of travel now will help smart investments start flowing towards lower-cost unfied electrical infrastructure statewide, along with upgrading homes to be more energy efficient and electricity-ready – simultaneously addressing California's cost-of-living, housing, and climate challenges.

This process is beginning, buttressed by reports from many expert bodies urging a clearly planned transition that maximizes affordability. Utility and air regulators in California are actively engaged in shifting buildings away from using fossil gas and towards electrification – including a mix of system planning measures and appliance standard regulations – but these programs require funding to ensure equitable and effective implementation. A funding portfolio will ultimately be useful, but the most important place to look for funds is in the ongoing billions of dollars being poured into the gas system itself. Moving funds from that system, in tandem with clarity on its end date, will best align and support the larger portfolio of funding and policy measures. In 2024, both state experts[5] and independent experts[6] advised the state to accelerate

5 *See* California Agency Staff, *2024 Joint Agency Staff Paper: Progress Towards a Gas Transition* at 9, CPUC Long-Term Gas Planning Docket R.20-01-007 (Feb. 22, 2024), https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M525/K660/525660391 (current decline at 0.6% annually; appliance standards accelerate decline to 8.5% annually through to 2040).

6 Stephanie Kinser et al., *Next Steps for Gas System Planning in California,* E3 (Nov. 20, 2024), https://www.nrdc.org/bio/kiki-velez/new-report-next-steps-ca-gas-transition

PHOTO: MIKE FOX/UNSPLASH

its actions to plan for a transition and ensure energy system investments followed a clear logic towards electrification – but there is much to do to realize those recommendations.

This opportunity to cut overall system costs and infrastructure needs has been growing for some time. Since 2000, gas demand has been slowly declining in California; adoption of CARB's proposed zero-emission appliance standards would accelerate that decline.[7] At the same time, the annual revenue required to run the gas distribution system has *grown*, increasing to above $11 billion annually by 2024.[8] This is not a sustainable financial prospect: not only are these funds better spent helping to drive towards a single, electric, energy delivery system, they are also creating real fiscal risks for gas customers. The gas system is designed to be funded and operated on a stable or expanding user base, with each user paying in to maintain the system at scale; as demand declines due to customers switching to superior electric technologies, this funding model is not sustainable. As these trends continue, costs for the smaller number of gas customers remaining on the gas system (including tenants who cannot choose their heating appliances) will only increase. Thus, a managed system financial transition is a critical need – it will save ratepayers money immediately, help shift overall state infrastructure spending to its highest and best use, and avoid what would otherwise be a highly disruptive unmanaged set of gas system decline risks as electrification proceeds.

California has begun to align policy efforts to replace it, including beginning to reduce subsidies to gas pipelines, exploring neighborhood gas network decommissioning, developing incentive programs, and working to develop zero-emission appliance standards at the local and state level.[9] These programs face a common challenge: There is a real upfront cost to extend and upgrade the electrical grid and to upgrade homes in order to unlock long-term savings and system efficiencies. This report argues that addressing that challenge requires a funding approach rooted in shifting spending, quickly, from the gas system to the electrical one.[10]

California does not need two redundant energy delivery systems, and funds spent on the natural gas system beyond those needed to maintain safety in the near term are ultimately missed opportunities. To be sure, urgent work is *also* needed on the electrical grid and to drive rates down; though not the subject of this report, it is a critical element

7 *See* id.

8 *Id.* at 13.

9 *See* California Agency Staff, *2024 Joint Agency Staff Paper: Progress Towards a Gas Transition, supra.*

10 As explained further in the text box on page 15, a statutory change making clear that electric system can substitute for gas services is needed to allow for this shift. Systematic pruning of the least economic parts of the gas system while providing substitute electric service – thereby turning two systems into one, while allowing utilities to recover electrification investments as net savings relative to identify gas system spending -- would yield savings because the utilities will electrify first in locations where electrification would be most cost-effective, then work their way through to the less cost-effective segments. Crucially, the utilities would do this in part because legal clarity that electrification is the goal would allow the CPUC to put a firm end date on the gas system, shifting depreciation schedules and asset valuations accordingly. Additional funding programs – including CARB-administered appliance fees – and other CPUC cost shifting tools could then fill in remaining gaps.

of the challenge ahead.[11] But that work would go better – and faster – if ratepayer funds were not simultaneously being billed to entrench gas infrastructure. California spends billions annually on its legacy natural gas system,[12] even though it would ultimately be cheaper for most households and businesses to use electric equipment,[13] even though those ratepayer funds could be better spent expanding and improving the electricity grid,[14] and even though replacing gas-fired equipment with electrical equipment across the state is necessary to meet climate and clean air goals.[15]

At the same time, California emphatically *does* need funding sources to transition its energy delivery systems. There is broad consensus that an equitable transition will require subsidizing electric appliances and building upgrade costs for lower-income Californians.[16] The constrained state budget generally does not afford sufficient funds, either from general funds or Cap-and-Invest-based grants, to fund that entire transition; indeed, existing programs are sometimes at risk in down-budget years.[17]

The transition can proceed in an equitable, and politically durable, way with well-defined set of public funds that can support regulations phasing out gas appliances and the transition generally. California's peer jurisdictions globally, from the United Kingdom to Denmark to the Netherlands, are modeling this approach. They are actively planning to transition their own gas systems, and developing financing mechanisms, even as California falls behind.[18] Every year that passes, ratepayers, investors, and the state are allocating enormous funds to a system at risk of becoming a stranded asset[19] — a system that California officials acknowledge must no longer be in service by mid-century to meet climate goals and to address growing energy system affordability challenges that are worsened by having to maintain a redundant energy infrastructure system with both electricity and gas.[20]

---

11 *See, e.g.*, Mohit Chhabra, NRDC, Powering Change: Understanding California's Electric Rate Challenge and Affordability Solutions (2025).

12 *See* California Energy Commission, *The Challenge of Retail Gas in California's Low-Carbon Future* (April 2020).

13 *See, e.g.*, Lauren Dunlap et al., *Impacts of Household Electrification on Energy Affordability in Los Angeles*, UCLA Luskin Center & California Center for Sustainable Communities (August 2025); Ryan Shea et al., Heat Pumps Can Lower Energy Bills for Californians Today, RMI (April 28, 2025).

14 *See, e.g., Alison* Ong et al., *The Costs of Building Decarbonization Policy Proposals for California Natural Gas Ratepayers: Identifying Cost-Effective Paths to a Zero Carbon Building Fleet*, Stanford Woods Institute for the Environment (June 2021).

15 *See* California Air Resources Board (CARB), 2022 Scoping Plan for Achieving Carbon Neutrality at 211-14, CARB (Dec. 2022).

16 *See, e.g.*, Building Energy, Equity, and Power (BEEP) Coalition, *Preliminary Report: Community Priorities for Equitable Building Decarbonization* (March 31, 2022), https://ww2.arb.ca.gov/sites/default/files/2022-03/BEEP%20Letter%20and%20Report_Equitable%20Decarb%20March%202022.pdf

17 *See* Ericka Flores, *The Equitable Building Decarbonization Program Is Set to Launch—But Needs Secure Funds*, NRDC (May 24, 2024), https://www.nrdc.org/bio/ericka-flores/equitable-building-decarbonization-program-set-launch-needs-secure-funds

18 *See, e.g.*, Jan Rosenow et al., Gas Grid Regulation in the Context of Net Zero Transitions: A Review of Seven European Countries, 122 Energy Res. & Soc. Sci. 103987 (2025), https://doi.org/10.1016/j.erss.2025.103987; *see also* Richard Lowes, *Decompression: Policy and regulatory options to manage the gas grid in a decarbonising UK*, Regulatory Assistance Project (August 2023), https://www.raponline.org/knowledge-center/decompression-policy-regulatory-options-manage-gas-grid-decarbonising-uk-2/

19 *See* Andy Billich, Michael Colvin, & Timothy O'Connor, *Managing the Transition: Proactive Solutions for Stranded Gas Asset Risk in California*, Environmental Defense Fund (2019), https://www.edf.org/sites/default/files/documents/Managing_the_Transition_new.pdf

20 See Heather Payne, *The Natural Gas Paradox: Shutting Down a System Designed to Operate Forever*, 80 Maryland L. Rev. 693 (2021) & Heather Payne, *Unservice*: *Reconceptualizing the Utility Duty to Serve in Light of Climate Change*, 56 U. Rich. L. Rev. 603 (2022).

In this report, we focus on how financial tools could be applied to achieve the system transition we need. Our core finding is that the best way to manage public and ratepayer funds and to unlock long-term energy savings for ratepayers is to shift funds at scale from the existing, antiquated, gas system towards electrification. A collection of aligned policy and funding measures based around redirecting investments away from the outdated gas system can collectively drive forward progress, including equitably funding appliance and home upgrades for Californians that will allow a wholesale shift to zero-emission appliances and an electric grid that can support them. These baskets of funding measures include:

1 | Redirecting Funds from the Gas Network to Electrification. The billions spent annually on maintaining and expanding the gas network would be better shifted towards extending electrical service on a region-wide basis to replace gas service—which can be done by setting, by statute, a clear end date for the system while clarifying that the utility obligation to serve can be met by substituting electric for gas service, thereby initiating planning on an appropriately large scale to prune the system and shed costs, allowing for substitute service, and using rate design and related tools to unlock revenues for these purposes.

2 | Designing Effective Public Financing Mechanisms to Draw in More Investment. Because electrification generally unlocks value, public funds used to buy down upfront costs can likely be recouped—and draw in private investment. Administrative agencies including CARB and the CPUC have authority to begin shifting spending under current authorities, and statutory programs and direction will accelerate this process. Focusing on loans where possible, leveraging state and utility procurement functions to drop costs, and drawing in private investment on top of these tools is a key strategy. Solutions that bring down total home costs—including electrification approaches that also reduce fire risk and so can mitigate insurance costs—are also worth exploring.

3 | Explore Creative Fee Strategies. California could develop new programs to create sources of funding to support electrification. For example, the legislature could authorize CARB or another agency to impose small surcharges on fossil-fuel appliances to create a fund to help lower-income Californians afford heat pumps or panel upgrades.

This approach—looking first to shift funds from the legacy system as a core strategy that can then drive consumer-side strategies and appliance standards by financing the transition as a whole—reflects the economic reality before the state in an increasingly constrained revenue environment. The same logic, of shifting funds from gas to electric and realizing substantial long-term savings in most use cases, is a replicable model at multiple scales to expand capital availability. We evaluate all these approaches below.

Ultimately, clear policy alignment, rooted around a clear end date for the system as a whole, is needed to unlock finance at every level and to provide a foundation for regulatory standards. Delays and half-measures only strand investments in an increasingly unnecessary and expensive system. Going fast, and decisively, is the lowest cost approach and the one most likely to serve Californians well. These approaches are also likely to be legally more durable. Although there is ongoing litigation around purported limits on the ability of some regulators to limit the use of natural gas appliances,[21] the state's fundamental authority over its own utility system planning and rate structures is clear and protected by federal law.[22] Further, rooting the transition primarily in direct system planning and durable financial mechanisms within the control of California can provide a relatively more predictable basis for investment than relying primarily on regulatory measures at a time of rapid reversals in federal policy and change in the scope of environmental law.

Ultimately, clear policy alignment, rooted around a clear end date for the system as a whole, is needed to unlock finance at every level and to provide a foundation for regulatory standards.

Affordability and abundance are the watch words for many policymakers today. Going slow on electrification by continuing to throw money into a gas system that, every year, sees higher costs and lower usage[23] achieves neither of these goals. Similarly, leaving the gas network largely in place while mandating zero-emission appliance sales fails to realize the majority of potential cost savings that could be unlocked by winding down ratepayer spending on the increasingly redundant gas system. The same is essentially true for California's tentative system of neighborhood-level decarbonization pilots—which are promising for information gathering and proof-of-concept, but which alone are too small to shift the economic picture.[24] Going big is also ultimately going cheap: we should focus on unlocking the funds that can transform the system as a whole.

---

21 *See* Daniel Carpenter-Gold, *Gloom Not Doom: The Latest in the Berkeley Decarbonization Case*, Public Health Law Center (Jan. 3, 2024), https://www.publichealthlawcenter.org/commentary/240103/1/3/24-gloom-not-doom-latest-berkeley-decarbonization-case

22 State authorities and recent policy efforts to align planning in this context are surveyed in Stephanie Kinser et al., *Next Steps for Gas System Planning in California*, E3 (Nov. 20, 2024), https://www.nrdc.org/bio/kiki-velez/new-report-next-steps-ca-gas-transition Even the Ninth Circuit's decision in CRA v. Berkeley reiterates that the state retains primary decisionmaking power over gas distribution system planning. See Cal. Restaurant Ass'n v. Berkeley, 89 F. 4th 1094, 1105-06 (9th Cir. 2024) (indicating that, notwithstanding the court's decision about Berkeley's ordinance, the state retains primary authority over the local distribution of natural gas via the Natural Gas Act); id. at 1117 (Baker, J., concurring) ("Nor is there any indication from its text or structure that EPCA speaks to the distribution of natural gas. If a state or local government terminates existing gas utility service or declines to extend such service, EPCA likely has no application.").

23 *See* California Agency Staff, *2024 Joint Agency Staff Paper: Progress Towards a Gas Transition at 9 & 13.*

24 *See, e.g.,* Denise Grab*, Gas Utilities Can Do Better on Neighborhood Electrification,* Legal Planet (Aug. 7, 2025), https://docs.google.com/document/d/1Jq7euejSHVv-DJfWlgb3bp1qSzvBX4DrOXcnLneaifk/edit?tab=t.0

Elements of an Effective and Equitable Funding Package

SETTING AN END DATE FOR THE GAS SYSTEM, as well as for the sales of gas appliances, and making clear that funds need to shift accordingly, will help unlock three general buckets of funds. First, substantial funds can move from the gas distribution network to electrical system improvements (including upgrading utility grid infrastructure, as well as supporting behind-the-meter interventions like electric appliance purchases, panel upgrades, and weatherization). Second, public financing mechanisms—including well-designed loan programs, procurement processes, and market transparency policies–can help further raise funds for the system, and draw in private investments as well. Third, direct fee strategies that further draw funds from outdated gas appliances and equipment and channel them directly to electric equipment can further support system change. All three of these general sets of approaches can and should move forward to support both the CPUC's overall system change, and related efforts, including CARB's proposed appliance standards—and all three approaches would be greatly accelerated by the statutory reforms we emphasize above.

PHOTO: ANDREW ANGELOV/SHUTTERSTOCK

A. Pulling Funds from the Gas System to Electrification.

The largest current pool of funds available to support widespread electrification, including readying homes for zero-emission appliances and extending and improving electrical service, is currently locked up in gas system operations. Shifting from two systems to one, while also gaining in overall system efficiency via lower operating cost and more efficient electric appliances, would unlock those funds. A recent study of potential trial locations for this approach demonstrates that *higher* ambition scenarios that electrify appliances more quickly, and which shed gas system costs more rapidly, are the most cost-effective, yielding overall cost savings in all cases.[25] In essence, re-capturing avoided costs on the gas system, plus adroit use of ratepayer funds from both the gas and electrical systems, can be used to fund electric system extension and gas system decommissioning. Multiple related approaches can drive forward the effort.

1 | Systemwide Spending Shifts from Gas to Electricity

Leading experts on gas system decommissioning identify a five-step process to shedding gas system costs: (1) integrated planning of electricity and gas networks, (2) setting policy-appropriate depreciation rates for gas infrastructure, (3) setting clear standards to shrink the gas system systematically, (4) shrinking capital investment in the remaining system to that required only by safety, and (5) channeling funding instead towards electrification and decommissioning costs.[26]

Tools that can shed system costs, including securitizing retiring assets, denying cost recovery on system expansions, or allowing accelerated amortization are well-described in the literature.[27] Indeed, such approaches are common for transition planning away from legacy infrastructure and institutions. For example, in the context of coal-fired power plants, these approaches have been used to cut off long-term spending on assets that are no longer economic and redirect funding to more cost-effective resources.[28]

The problem is that these concepts, to date, have not been applied coherently to California's gas system even though it is at increasing risk of becoming a non-economic legacy asset. Until these concepts are developed and applied to the gas network, ratepayers will continue spending billions annually subsidizing the gas system, even as the state faces an electrification revenue crunch

---

25 *See Aryeh Parket et al., Benefit-Cost Analysis of Targeted Electrification and Gas Decommissioning in California, E3 Energy Economics (Dec. 2023), https://www.ethree.com/wp-content/uploads/2023/12/E3_Benefit-Cost-Analysis-of-Targeted-Electrification-and-Gas-Decommissioning-in-California_u.pdf*

26 *See Jan Rosenow et al., The Elephant in the Room: How do We Regulate Gas Transportation System Infrastructure as Gas Demand Declines?, 7 One Earth 1158 (July 19, 2024).*

27 *See e.g. supra Payne, The Natural Gas Paradox, at 729-39.*

28 *See, e.g., Ann M. Eisenberg & Emily Winston, Securitization of Coal Plant Retirements, 33 Colo. Env. L. J. 317 (2022).*

These approaches involve managing policy-consistent shifts of funds from the gas to electric system in sync with overall decommissioning timelines. To date, of course, regulators work to *prevent* cross-subsidies in many instances, including planning cost recovery and spending for the gas and electric systems largely separately.[29] This approach may have been sensible when the gas network provided unique value separate from the electric grid. Now that it is clear that the gas system is largely duplicative of the electric grid[30] and total energy cost savings can best be unlocked by removing the gas system, it does not make sense to continue to spend gas ratepayer dollars on a system that locks them, and everyone, into higher costs. The better approach is to develop a systemic approach for shifting funds directly, in conjunction with obligation-to-serve reform.

29 *Id.* at 38–39.

30 See Joshua Lappen et al., The Unseen Competition in the Energy Transition: Acknowledging and Addressing Inter-Utility Competition to Achieve Managed Decarbonization, Stanford Climate and Energy Policy Program (2024).

PHOTO: LOPOLOV/SHUTTERSTOCK

Obligation-to-Serve Reform:

Legal Clarity on the Gas Transition is a Necessary Precursor to Funding that Transition Equitably

Funding policy change requires setting up legal expectations – by statute -- that make sensible investments possible. The state is not going to grant-fund its way, home by home, into retrofitting millions of buildings in California; it instead is going to need to shift large pools of funds—and draw in more investments—to realize system change. Investments at that scale are available but require capturing the value at risk of being stranded in the gas system while demonstrating that major new spending on home retrofits and clean appliances makes sense. Clarity on the state's goals has only become more important to channeling fiscal policy due to recent wild swings in federal policy. Policy ambition and clarity from California is a necessary, but missing, prerequisite to an investable and equitable transition.

Yet the pace of reform is slow; though the California Public Utilities Commission (CPUC) has opened long-term planning proceedings, cut some subsidies that funded gas line extensions,[31] and begun reviewing major system expansion spending for prudence,[32] neither it nor the legislature has responded to this fiscal problem with the urgency it deserves. For instance, though the CPUC has developed some tests for decommissioning some under-used portions of the gas system,[33] it has no general decommissioning plan, and does not even require blanket consideration of non-pipeline alternatives in the face of gas network *extension* requests, falling behind leading states like Massachusetts which are actively planning for system change.[34] Likewise, neighborhood level electrification pilots, though doubtless informative, do not operate at a scale sufficient to shift large-scale investment, or to prevent billions in additional potential stranded asset spending on the gas system. Ultimately, there is a strong need for clear legislative direction – but it has not yet been forthcoming. In fact, a recent bill freezing building codes and effectively delaying all-electric building standards is further eroding California's leadership.[35]

Correcting course requires legal change. The core legal bargain that created public utilities paired an obligation to serve the public with the power to charge the public reasonable rates for energy infrastructure. The problem is that the obligation to serve has generally been read as fuel-specific – that is, an obligation to serve with *electricity* along with a separate obligation to serve with *gas*, making it legally unclear whether the CPUC, or a utility, can maintain its core obligations while substituting fuels. This ambiguity is a significant impediment to the investment shifts the state would need for economic climate action.

The most efficient way to address this issue is a statutory fix authorizing fuel substitution in circumstances where that is economic and prudent, rather than the traditional approach, which functionally obliges utilities to provide gas service even when public policy and prudence militate for all-electric energy delivery.[36]

But the state has been slow to reform these statutes from the last century to reflect the fact that electricity now not only *can* replace gas for all major uses, but that it *needs* to do so. To be sure, there are ways to read the current state code to begin to move utilities away from providing mandatory gas service, including by shrinking the service territories of gas utilities.[37] But statutory reform would provide clear, low-litigation-risk, and democratically-grounded clarity necessary to catalyze action.

The legislature should enact a statutory package that confirms that utilities can substitute electrical for gas service, sets a clear timeline for winding down spending on the gas distribution system, and greenlights a set of funding packages that can convert a growing portion of funds that would have otherwise been spent on gas towards electrification. Making real change requires real reform. Though more targeted funding mechanisms can, and should, be deployed around and in advance of a comprehensive reform package, a clear redefinition of the obligation-to-serve tied to a wind-down of gas system investment has strong potential to unlock funds at scale.

31 CPUC Decision 22-09-026, *Phase III Decision Eliminating Gas Line Extension Allowances* (Sept. 15, 2022).
32 CPUC Decision 22-12-0121, *Decision Adopting Gas Infrastructure General Order* (Dec. 8, 2022).
33 CPUC Decision 23-12-003, *Decision on Phase 2 Issues Regarding Transmission Pipelines and Storage* (Dec. 21, 2023).
34 Massachusetts Department of Public Utilities, *Order on Regulatory Principles and Framework*, DPU 20-80-B (Dec. 6, 2023).
35 *See* Alison F. Takemura, *California halts building code updates in a blow to electrification*, Canary Media (Aug. 4, 2025), https://www.canarymedia.com/articles/carbon-free-buildings/ca-ab-130-code-housing
36 *See, e.g.,* Kristin George Bagnadov, *Decarbonizing the Obligation to Serve*, Building Decarbonization Coalition (Oct. 2024), https://buildingdecarb.org/decarbnation-obligation-to-serve
37 *See* Nicholas Wallace, Amanda Zerbe, Michael Wara, & Deborah Sivas, *Removing Legal Barriers to Building Electrification*, Stanford Law School & Mills Legal Clinic (Oct. 20, 2020), https://law.stanford.edu/publications/removing-legal-barriers-to-building-electrification/

A systematic approach to winding down gas system infrastructure and shifting funds toward electrification is needed. It would include obligation-to-serve reform as its core statutory element (see text box on page 15 for more detail on obligation-to-serve reform), and also should require the following planning steps to translate from that energy substitutability principle into system change:

a. ***Immediately require non-pipeline alternatives tests for all significant gas system investments.*** The gas distribution network cannot be allowed to be replaced where electrification can serve existing uses. The CPUC, and utility regulators in other leading jurisdictions, have begun implementing these analyses at varying scales. They should be swiftly made universal – at least as to projects that are individually or cumulatively at a significant scale, and well below the current $75 million threshold for this analysis.[38] In a shift from the current approach, electrification should be the default option, and the burden of proof should be on gas utilities to show that electrification is not feasible.

b. ***Set a hard end date for the gas system as a whole, depreciate the system against that date, and allow the CPUC to determine where accelerated amortization or securitization (or other options) are appropriate for particular assets.***
Ending overall system investment by a date certain, and allowing appropriate cost recovery against that end date will drive shifting investment patterns. The CPUC can appropriately balance cost-recovery approaches for remaining infrastructure (including considering approaches to allow accelerated cost recovery against a clear end date for the system, and options to allow "securitization" – in which the system is given a clear remaining rate of return against its end), and make gas tariff adjustments to limit gas rate spikes for lower-income consumers.[39]

c. ***Direct utilities to prioritize gas network segments for retirement, and require use of gas system rates (and electricity system rates where appropriate) to fund electric grid extension and home upgrades to support gas system removal.***
Planned retirement dates for specific gas system pieces, combined with electric grid investment, will allow for orderly shifts in funds and infrastructure planning. Avoided gas system maintenance costs can, for instance, be treated as regulatory assets that can underwrite electrical system improvements, along with direct use of ratepayer funds—which would be appropriate because ratepayers, overall, save by decommissioning the gas system. Redirected funds can then be focused by income, volumetric gas use avoided, and

38 *See CPUC Creates New Framework to Advance California's Transition Away from Natural Gas* (Dec. 1, 2022), https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-creates-new-framework-to-advance-california-transition-away-from-natural-gas

39 Note that accelerated depreciation would increase rates for consumers in the near term, but some of these increases will be offset by reduced gas system maintenance costs, and bill protections could be instituted to support lower-income households.

similar metrics to ensure lower-income Californians do not see undue cost increases from gas that are not balanced against cost savings from electricity use. A dedicated funding pool could, for instance, be focused on apartment buildings and to support renters generally.

These approaches would necessarily involve coordinating infrastructure and rate plans between existing gas and electric utilities (or, for mixed utilities, looking at system planning jointly), with the CPUC acting as a funding mediator to oversee appropriate tariff and planning structures. The CPUC and legislature could also engage on potential options for gas utilities, including managed transfers of service territories on a neighborhood-by-neighborhood basis as electrification proceeds, via franchise agreement and asset buy-outs of gas utilities by electric utilities, or similar mechanisms.

d. ***Direct support toward aligned electrification policies.***
Because accelerated deployment of electric appliances and equipment allows for corresponding accelerated gas use reductions, and hence opportunities to save gas system costs, complementary policies like zero-emission appliance requirements and all-electric building homes are critical adjuncts to these strategies. Multiple analysts have shown that this combined approach maximizes cost-efficiency and drives down system costs.[40]

Because gas system spending is in the tens of billions annually, this overall approach would be able to respond to the funding needs for electrification at an appropriate system scale. Over time, gas system pruning would, of course, yield more limited savings as the scope of the pipeline network declines, but by that time, significant electrification will have been funded. It also allows for careful planning to avoid a "death spiral" for stranded users towards the end of system life who would otherwise face untenable costs to keep the system running, by identifying a managed exit approach and aligning financing options.The final decommissioning of the system, and final upgrades for remaining gas users, could be supported by electricity system tariff design, direct investment or subsidy—but the majority of the system could be shifted via this integrated planning approach. This approach also weds well with complementary policies, including building codes and appliance emissions standards, resulting in virtuous upward spirals that support overall system transitions at lowest cost. It also, as we note below, creates the sort of transparent and investable policy structure that can best support additional financial mechanisms, including bonding and private equity investments to further pull forward the value to be gained by retiring the gas system.

Of course, real complexities remain. For instance, there will be a significant question of what to do in contexts where an investor-owned gas utility, under CPUC oversight, overlaps with a publicly-owned electric utility outside of CPUC management. Moreover, gas and electric

40 *See, e.g.*, Ong et al., *supra* & Parker et al., *supra.*

utilities have fundamentally different expertises, cultures, and financial arrangements. Similarly, there will be real questions as to how gas utilities will adapt their business models under this new paradigm, whether state intervention will be needed to manage re-structuring, and how to protect utility workers during the transition. Articulating a path forward requires engaging these complexities deeply – but they are best engaged in the context of a clear direction of travel, and dedicated state expert capacity and legislative commitment to creative problem solving.

These are, after all, just *some* of the hard problems – legal and economic – ahead. But these problems share a few common characteristics. First, they are unavoidable transition problems that require legislative problem-solving and compromise. Second, they are plainly *solvable* with real political choices and funds. And *third*, most critically, they are far better problems to have than allowing continued drift and spending many billions annually on a system that ultimately raises costs for Californians while increasing stranded asset and climate risk. The right approach is not to respond to complexity with hesitation, but to begin the usual work of policy, with clear target setting and initial structures that will, of course, be refined and elaborated over time as the transition continues.

2 | Targeted, Near-Term Opportunities to Unlock Utility Funds

While a system-wide shift in gas system planning will be necessary to unlock the full extent of efficiencies and cost savings, such an approach may not be immediately feasible due to political headwinds and institutional inertia. In the interim, a variety of policies could unlock utility funds to support ratepayers to electrify in targeted, cost-effective ways. Some of these approaches have already been applied in other states or in small pilot projects in California. They are generally within the existing authority of the CPUC, though statutory direction would accelerate their consideration.

a. *Gas Service Line Repair Cost Reallocation*

A non-pipeline alternative (NPA) approach that shows particular near-term promise involves requiring gas utilities to offer customers funding for electrification measures, whenever a gas service line replacement or repair could be avoided through electrification. This approach would be tailored toward small-scale projects, where the gas service line supplies one or a few customers, and would be tied to cost-effectiveness based upon overall cost savings for the gas system. The utility would be allowed to rate base the cost of the electrification measures, while saving ratepayers money overall due to avoided pipeline costs.

Such a program already exists in New York, where the state's Public Service Commission requires ConEd to "consider whether gas main is at the end of the system or has a small number of customers attached that are easy to electrify when completing the assessment for emerging projects to determine if the gas main can be eliminated rather than being replaced."[41] Where

41 https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=22-E-0064

feasible, the utility must "proactively conduct outreach and educate customers who are planned recipients of a gas service replacement on the benefits of electrification" and "consider delays in associated main replacement work to support and facilitate electrification efforts, as long as there are no adverse safety or operational impacts to doing so."[42] Under the New York program, significant funding (up to $10,000 for a single-family home or up to $15,000 for a multi-family residence) is available, with enhanced incentives (an additional $5000 per property) available for disadvantaged communities.[43]

b. *Gas Efficiency Funding Reallocation*

Another source of funding that could potentially be tapped for electrification is reallocating existing energy efficiency program funds. In a 2023 decision,[44] the CPUC began reducing gas efficiency incentives in certain cases, in order to better align with state climate goals. This decision was an important first step away from using ratepayer funding to support increased gas use, but it stopped short of either fully eliminating these incentives, or specifically allowing efficiency funding from gas companies to be used to support electrification (though it did allude to exploring the possibility of such an approach in the future).

Other states already allow energy efficiency funding from gas utilities to be spent to support building electrification measures. Notably, the Mass Save program in Massachusetts pools efficiency funding from all utilities in the state (including gas only utilities) to support electrification.[45]

c. *Inclusive Utility Investment*

Inclusive Utility Investment (IUI), also known as Tariffed On-Bill Financing (TOBF), is a program in which utilities cover upfront costs for consumer energy-efficiency and electrification upgrades and recover these costs through monthly utility bill charges for participating customers. As compared to a traditional loan, this model generally offers more favorable financing terms, leveraging utilities' favorable credit terms to deliver more affordable upgrades.[46]

---

42 *Id. See also* https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/energy-exchange describing the program and educating prospective customers who may qualify.

43 https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/energy-exchange

44 https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-reduces-incentives-for-natural-gas-to-better-align-with-state-climate-goals-2023#:~:text=The%20energy%20efficiency%20portfolios%20overseen,underserved%20customers%20and%20disadvantaged%20communities https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M505/K808/505808197.PDF

45 https://www.masssave.com/about-us/electrification; https://www.mass.gov/news/dpu-reduces-mass-save-plan-by-500-million-and-approves-proposals-to-reduce-residential-gas-bills

46 U.S. Environmental Protection Agency, *Inclusive Utility Investments: Tariffed On-Bill Programs*, https://www.epa.gov/statelocalenergy/inclusive-utility-investments-tariffed-bill-programs; *see also* Jeff Deason et al., Lawrence Berkeley National Laboratory, Consumer Outcomes in Pay-as-You-Save Programs (2022), https://eta-publications.lbl.gov/sites/default/files/deason_aceee_2022_preprint.pdf (studying tariffed on-bill financing programs for energy efficiency improvements and finding that they increased access to these features for low-income households, reduced energy usage, and in the vast majority of cases resulted in bill reductions).

California has started enacting IUI programs to accelerate building electrification and energy efficiency. A pilot program is already underway through Silicon Valley Clean Energy (SVCE), as part of the Technology and Equipment for Clean Heating (TECH) initiative.[47] Supported by up to $3 million in technical and risk-management assistance, this program is testing an IUI model for installing heat pump space conditioning and heat pump water heating equipment in single-family homes, initially targeting moderate-income households. Because the tariff is tied to the meter rather than the individual customer, low-credit households and renters can participate without facing traditional loan barriers.

Drawing on the potential of the SVCE program, as well as thought leadership from the Building Decarbonization Coalition and others,[48] the CPUC has proposed to expand the IUI pilot program to all utilities in the state. The CPUC ordered utilities to file detailed proposals of their IUI pilot programs for CPUC review. These proposals were filed in May 2024, and have received mixed reviews from CPUC consultants and commenters.[49] The CPUC has yet to rule on the proposals and has extended the statutory deadline multiple times, leaving the future of this program uncertain.

Many of the concerns voiced by commenters and consultants relate to cost and equity.[50] Indeed, procedural safeguards are essential to ensure that the investments that are rate based through an IUI program are cost-effective for both ratepayers broadly and for the individual households who commit to such a payment program. However, with the proper protections in place, IUI can be a vital tool for low-income households who would not otherwise be able to afford these improvements. Comments in the CPUC proceeding from the energy and economic justice nonprofits Greenlining and Green for All highlight the importance of proceeding with proposed IUI pilot projects (with the appropriate safeguards) in order to "advanc[e] California's goals around equity, affordability, and decarbonization."[51] Greenlining and Green for All note that IUI programs "offer an opportunity to access more affordable capital to pay for essential home upgrades, while simultaneously relieving communities historically excluded from access to financing of the typical barriers and pitfalls consistent with traditional consumer debt programs."[52]

---

47 Tech Clean California, *Inclusive Utility Investment Pilot*, https://techcleanca.com/pilots/tariffed-on-bill-pilot/

48 https://buildingdecarb.org/wp-content/uploads/NEW-Financing-a-Climate-Safe-Future_-Low-and-Moderate-Income-Residential-Building-Electrification-June-2023-1.pdf; https://buildingdecarb.org/resource/inclusive-utility-investment-financing

49 https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M562/K975/562975610.PDF and docket comments: https://apps.cpuc.ca.gov/apex/f?p=401:57:::::: .

50 See, e.g., Public Advocates Office comments, https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M566/K243/566243392.PDF (expressing concern generally about including any additional costs in the rate base where rates are already high, in addition to specific concerns about unduly high administrative costs in particular utilities' proposals).

51 https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M566/K329/566329038.PDF at 4; https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M567/K932/567932975.PDF.

52 https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M566/K329/566329038.PDF at 3.

While IUI approaches offer significant promise, particularly for lower-income customers who would not be otherwise able to access traditional sources of financing, consumer protections must be an essential part of any IUI program. As the National Consumer Law Center (NCLC) has articulated,[53] IUI programs must be designed to address several potential harms from poorly executed IUI programs. First, many IUI proposals reduce investor risk by allowing utilities to disconnect service for nonpayment, a practice that can lead to negative health outcomes or eviction. Furthermore, there is no guarantee of savings. Consumer savings depend on achieving expected efficiency gains from the installed equipment, which can be uncertain. The NCLC also warns that predatory marketing by contractors may occur, particularly when utilities offer financial incentives but fail to enforce strong oversight of contractor practices.

To address these risks, NCLC recommends several consumer protections,[54] including: screening customers for existing no-cost efficiency programs before enrolling them in IUI; ensuring eligibility for affordability programs; prohibiting disconnection of service for unpaid IUI charges; guaranteeing energy savings; preventing predatory marketing through independent program administration; requiring certified contractors; and establishing a transparent complaint and dispute resolution system.

B. Designing Effective Public Financing Mechanisms to Draw in More Investment

Loans, including revolving loans and property assessed financing, are a common solution for energy efficiency and building upgrade projects. Because buying down the upfront cost of electrification generally yields long-term savings relative to ongoing gas use,[55] loan designs have increasing promise to accelerate electrification at scale. Scaling up loan programs and other investment instruments specifically to support the zonal building decarbonization that gas network pruning will produce is worth exploring, including via public/private partnership designs in which state funds, bond ratings, or similar tools help draw in private investments to accelerate change.

1 | Green Bank Financing and Private Equity Partnerships

The existing Equitable Building Decarbonization Program at the California Energy Commission (CEC) is a critical funding source, but the program is primarily grant-based, with a limited loan component. The California Green Bank (within the State Treasurer's Office) and its separate Infrastructure and Development Bank both could be statutorily directed

53 National Consumer Law Center, *Tariff-Based On-Bill Financing: Assessing the Risks for Low-Income Consumers* (Feb. 2023), https://www.nclc.org/wp-content/uploads/2023/02/NCLC-PAYS-issue-brief_final-2.14.23.pdf.

54 National Consumer Law Center, *Tariff-Based On-Bill Financing: Assessing the Risks for Low-Income Consumers* (Feb. 2023), https://www.nclc.org/wp-content/uploads/2023/02/NCLC-PAYS-issue-brief_final-2.14.23.pdf.

55 *See supra Dunlap* et al.

to develop focused loan programs interlocking with a CPUC-led zonal gas network decommissioning process, and keyed to the timing of any CARB-led appliance rules. Loan programs could be directed at property owners and at renters, and buy down the purchase price of zero-emission appliances and home upgrades while seeking a small recovery from long-term energy cost savings. The legislature has previously experimented with revolving loan funds for zero-emission trucks along these lines,[56] and such a program could be readily scaled up for appliances and homes. Starter funding could come from a one-time transfer of Greenhouse Gas Reduction Fund revenues, from a utility-funded account using a portion of gas system rate revenues, or a combination of sources.

Such programs could expand their reach by partnering with private equity products. For instance, enhanced loan amounts or favorable interest rates could be offered to projects that draw in private capital as well, perhaps by scaling up across entire regions to create large-scale investment opportunities. A version of this model has, for instance, worked well in New York, where the state power authority offered very low-interest loans for clean energy projects, unlocking financing opportunities that could then also draw in further private investments.[57] California could readily mobilize a similar model for homes and buildings, especially if the scale of such an opportunity were clear as a result of overall state law establishing a retirement program for the gas system, and hence major electrification investment opportunities.

2 | Cap-and-Invest Revenue Collateralization

A further funding approach worth underlining would be to expand the long-term monies available for loans by collateralizing Cap-and-Invest revenues to support appliance cost buy-down and home upgrades. We note this possibility separately for emphasis, although it could readily be deployed in tandem with the debt equity strategies above, because loan programs remain oddly rare in the Greenhouse Gas Reduction Fund portfolio. The result has been intense competition amongst many important state purposes for limited and variable pools of state grant funds, and quick exhaustion of many funding pools. Shifting more of the *entire* program towards loans would stretch funds further, and provide long-term stability for many project types—a particularly important consideration for the sorts of long-term financial planning that go into building upgrades and appliance purchases. Because programs underwritten by Cap-and-Invest dollars can be created by majority vote statutes, initial loan programs could be rapidly created, and calibrated over time—synching up, for instance, with the timing of the CPUC's overall gas network removal program and with the timing of CARB's appliance regulations.

---

56 *See* SB 372 (Leyva, 2022), codified at Cal. Health & Safety Code 44274.10-44274.15.

57 *See* Hannah Safford, Craig Segall, Angela Barranco, & Paul Williams, *De-Risking the Clean Energy Transition: Opportunities and Principles for Subnational Actors, Federation of American Scientists* (June 18, 2025), https://fas.org/publication/de-risking-the-clean-energy-transition/

3 | Insurance System Funding

The intersection of California's gas system and wildfire risk creates another set of funds worth exploring. In the wake of wildfires, the sight of burning gas network connection points where homes[58] once stood underlines the oddity that California pumps flammable fuels into neighborhoods at real fire risk. Considering ways to rebuild more effectively, including limiting building in wildfire areas and ensuring that homes in those areas are all electric, is likely to reduce overall fire risk, and hence overall insurance system exposure.[59] Areas of high wildfire risk are also the ones where undergrounding electrical lines may make the most sense, and that is far easier and less expensive where there is no gas system to work around, providing yet a further saving. This reduced exposure, in turn, likely means reduced insurance rates. The state should consider focusing grant and loan dollars specifically on electrifying areas of high wildfire system risk in order to achieve these system wide savings (and indeed, such bills piloting this approach are currently under consideration).[60] It could also expand this approach by exploring insurance-savings-backed investment products in tandem with the private sector, in which loans support electrification of homes and are paid back, in part, via insurance rate savings.

4 | Public Procurement and Market Policies

Finally, we note that all these strategies would be supported by an active public role in the appliance market. That role could include large-scale procurements of needed equipment, electric appliances, and similar capital for redistribution at cost or for free to lower-income households, improving economies of scale for manufacturers and buying down overall transition costs. Such procurements could be funded by avoided gas system costs as discussed above, or via one-time appropriations. Such procurements are also tools to affect appliance cost, as state funds could be limited to appliances within certain cost windows, or require year-over-year falling upfront pricing by manufacturers to access the procurements, along with clear price transparency and consumer protection measures. Targeted state involvement of this sort was a key element in commercializing and distributing zero-emission vehicle technologies, and could be built upon for appliances—including the sorts of pricing and market oversight that could reduce costs for all Californians, not just direct recipients of procured equipment.

C. Explore Creative Fee Strategies

California's legislature could enact statutes creating programs that could unlock new sources of funding for building electrification.

---

58 *See* video posted here, for example: https://www.facebook.com/KevinSteeleTV/videos/gas-still-on-after-wildfires/625432773311184/

59 *See*, e.g., Kasia Kosmala-Dahlbeck et al., *A Cost-Effective, Fast, and Sustainable Fire Recovery in Los Angeles,* CLEE (2025), https://www.law.berkeley.edu/wp-content/uploads/2025/04/A-Cost-Effective-Fast-and-Sustainable-Fire-Recovery-in-LA_4.21.25.pdf

60 *See* AB 888 (Calderon, 2025).

1 | Clean Heat Standard

One policy approach that could unlock funding for building electrification is developing a Clean Heat Standard. A Clean Heat Standard sets a greenhouse gas reduction target for gas utilities to meet, which they can either satisfy through reducing emissions directly (including through funding electrification measures) or, in some jurisdictions, buying credits to support emissions reductions. Where credits are a compliance option, those funds can be used to support electrification, especially for low-income communities.

Several states have enacted or considered Clean Heat Standards in recent years, the first (and farthest along) being Colorado.[61] Colorado requires gas utilities to develop, and its Public Utilities Commission to review, Clean Heat Plans every four years. Colorado's gas utilities (both mixed-fuel and gas-only utilities) are required to reduce emissions directly (i.e., no credit trading) and are permitted to use ratepayer funds for beneficial electrification below a cost cap.[62] Notably, the first set of Colorado's Clean Heat Plans will unlock hundreds of millions of dollars annually between now and 2027 to support electrification and energy efficiency programs,[63] with additional plans to be filed next year to achieve further greenhouse gas reductions by 2030. Massachusetts, Vermont, and Maryland have also begun processes to develop Clean Heat Standards, though these have not yet been finalized.[64]

2 | Appliance Pollution Standards Mitigation Fees

The California Air Resources Board (CARB) is working to develop statewide zero-emission space and water heater standards, which would support a transition from fossil-fired heaters to emissions-free alternatives upon burnout.[65] As a complement to this regulatory approach, CARB might consider developing an optional mitigation fee approach, where regulated entities would have the option to pay a fee rather than complying with the emissions standard. The proceeds of this program could then be used to help support lower-income communities to electrify. A similar program already exists in the South Coast Air Quality Management District (SCAQMD).[66]

---

61 https://puc.colorado.gov/cleanheatplans; Colo. SB21-264 (2021). See also https://www.edf.org/sites/default/files/2024-03/Clean%20Heat%20Standards%20Report_FINAL%2002-2024.pdf

62 See Colorado Public Utilities Commission, Clean Heat Plans, What Is a Clean Heat Plan?, https://puc.colorado.gov/cleanheatplans.

63 *See* Sam Brasch, Why Xcel Energy's New Clean Heat Plan Could Shift Colorado Away from Natural Gas, Colorado Public Radio (June 11, 2024), https://www.cpr.org/2024/06/11/why-xcel-energys-new-clean-heat-plan-could-shift-colorado-away-from-natural-gas/; see also Colorado Public Utilities Commission, Clean Heat Plans, Past Clean Heat Plan Decisions https://puc.colorado.gov/cleanheatplans.

64 https://blogs.edf.org/climate411/2024/03/11/clean-heat-standards-an-effective-climate-policy-for-the-thermal-sector/; https://mde.maryland.gov/programs/air/Climate-in-md/Pages/Clean-Heat-Rules.aspx.

65 *See* https://ww2.arb.ca.gov/our-work/programs/zero-emission-space-and-water-heater-standards/about

66 See S. Coast Air Qual. Mgmt. Bd., Rule 1111, https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1111.pdf; S. Coast Air Qual. Mgmt. Bd., Rule 1121, https://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1121.pdf.

Optional mitigation fee programs allow appliance manufacturers to pay a per-unit fee rather than complying with emissions standards, with the proceeds funding efforts to support affordable electrification in low-income communities. These programs strike a balance by allowing regulated entities more flexibility in how to mitigate their emissions—whether by complying with emissions standards or voluntarily choosing the alternative compliance option of a per-unit mitigation fee—while funding crucial electrification efforts. Mitigation fees provide a much-needed source of funding, especially given current budget constraints, and allow funds to be targeted toward communities where financing the transition from gas to electric buildings will require significant investment.

In order to be in the strongest legal position to implement this mitigation fee approach, the legislature and CARB should work closely together to develop clear authorizing legislation that details the scope of this mitigation fee program. Note that the Legislature and CARB will also need to work within the framework of Proposition 26, which constitutionally limits the scope of fees that government entities can collect without ⅔ legislative approval.

At least two paths exist within the Proposition 26 framework for the Legislature to develop a mitigation fee statute that authorizes CARB to create and administer a revenue-generating program.

At least two paths exist within the Proposition 26 framework for the Legislature to develop a mitigation fee statute[67] that authorizes CARB to create and administer a revenue-generating program. First, the statute could create a fee program that is fundamentally voluntary by offering a fully-elective alternative compliance option that would generate revenue while allowing some non-compliant, higher-emitting appliances to be sold, with that revenue funding the transition to zero-emission appliances. These fees would only be paid if an appliance manufacturer chooses to do so in order to pollute above the emissions limits. Thus, these fees would be purely voluntary—not a mandatory "levy, charge, or exaction" that would be considered a "tax" under Proposition 26.[68] Such a fee statute should specifically highlight that these fees fall within Proposition 26's exception to the definition of a "tax" for charges imposed for a "specific benefit conferred or privilege granted" to a payor (i.e., opting-out of compliance with emissions limits).

67 These fee statutes generally explain the parameters under which fees may be charged, the account in the Treasury to which fees may be deposited, and similar mechanisms key to the revenue-gathering process. See Cal. Health and Safety Code, §§ 38597 (statute allowing a "cost of implementation" fee to fund CARB GHG activities under AB 32), 43019.1 (fee statute for certifying certain equipment types).

68 *See* CAL. CONST., art. XIIIA, § 3(b).

Alternatively, the statute could authorize CARB to impose a "spending account" program that requires appliance manufacturers to sequester fees for each appliance sold over applicable emissions limits, and then use those monies to support residential electrification via a revolving fund for zero-emission equipment purchasers, direct grants, subsidized appliances, or similar measures. This "spending account" approach has support in California case law. In *Schmeer v. County of Los Angeles*, the California Court of Appeal upheld a plastic bag fee that was imposed by law but never collected by the government as outside Proposition 26's constraints for a "tax."[69] The fee was to be retained by stores and used to provide reusable bags and for similar purposes. In the court's view, this fund retention requirement was not a tax because the government never held the funds—and so received no tax payments.[70]

69 *Schmeer v. County of Los Angeles*, 213 Cal. App. 4th 1310 (2nd. Dist. 2013), Cal. S.Ct. review denied (May 15, 2013).
70 *Id.* at 1328–30.

PHOTO: ANTON KOR/SHUTTERSTOCK

Conclusion

AFFORDABLE CLEAN ENERGY IS THE KEY TO AN ABUNDANT FUTURE with broadly shared prosperity. Getting to that future requires a clear set of state policy commitments that can unlock the investments we need – and, most critically, to help move from massive spending on *two* complex and hard-to-maintain energy delivery systems towards a single power grid that can support electrified, affordable, and healthy neighborhoods.

California has elements of a gas system transition in place, but it needs to align them with an economically sensible and legally-mandated path forward. The CPUC's initial limits on gas system extension are sensible, but leave billions flowing the wrong direction – into the gas system itself – rather than towards the state's electrification goals. CARB's proposed appliance rules are similarly important, but currently exist in tension with billions being spent on supporting the gas network, while lacking a funding mechanism. Current policy will largely allow billions in gas system spending to continue for years, without providing the funds CPUC, CARB, and the utilities themselves need to invest at scale. We recognize that this transition is complex and will take time. But that is a reason to name the problem clearly and to accelerate work – not to stand by as billions continue to flow in the wrong direction.

PHOTO: Y HELFMAN/SHUTTERSTOCK

A variety of funding and financing approaches using existing agency authority and new statutory programs can help unlock money to support households to transition to electric appliances. These approaches include smaller-scale CPUC programs like service line repair cost reallocation, gas efficiency funding reallocation, and inclusive utility investment. Other options include unlocking public financing mechanisms through green bank financing, cap-and-invest revenue collateralization, insurance system funding, and public procurement; as well as innovative compliance fee strategies, such as a clean heat standard or appliance pollution standard mitigation fee.

Ultimately, however, these potential sources of funding are of a smaller scale than the billions of dollars spent propping up the gas distribution system each year. If the state wants abundant, affordable, and safe energy, it needs to stop pouring funds into a gas system that it fundamentally cannot afford, and transition this spending over to an investment in an expanded electrical grid.

Legal clarity to realign public spending and private investment is the best path forward. The legislature can, and should, authorize targeted fee and incentive authority to better support electric appliance access, but these appliance-generated funds are likely to be comparatively small compared to the billions currently been spent at cross purposes to support the gas system itself. Rather than just subsidizing electric appliances while continuing to misspend public funds on the wrong system, the legislature should also authorize and direct the CPUC to begin systematically shifting costs from the gas system to electrification by pruning back the gas system, starting with the least economic geographies it now serves, and redirecting spending to extending electrification in tandem. What is needed is both an appliance subsidy program, and a larger shift in core investments to align economics towards electrification, at both the consumer and public finance level.

Legal clarity to realign public spending and private investment is the best path forward.

Big changes in infrastructure spending require clear statutory direction. The legislature should clarify that it will cease running two increasingly redundant energy systems by a clear end date, and lay out a detailed pathway to reaching that goal.

UCLA School of Law
Emmett Institute on Climate Change & the Environment

ACKNOWLEDGEMENTS

The authors are grateful for the research assistance of Emma Rose Shore and Alexander Wood, as well as helpful insights and feedback from Laila Atalla, Bruce Biewald, Mike Bloomberg, Heather Clark, Michael Colvin, Joe Dammel, Evan George, Kate Gordon, Justin Gundlach, Mike Henchen, Cara Horowitz, Heather Payne, Olivia Prieto, Cliff Rechtschaffen, Travis Ritchie, Julia Stein, Kiki Velez, and Matt Vespa. The views expressed in this paper are solely those of the authors; all errors are our own.

ABOUT THE EMMETT INSTITUTE ON CLIMATE CHANGE AND THE ENVIRONMENT

The Emmett Institute on Climate Change and the Environment is the leading law school center focused on climate change and other critical environmental issues. Founded in 2008 with a generous gift from Dan A. Emmett and his family, the Institute works across disciplines to develop and promote research and policy tools useful to decision makers locally, statewide, nationally, and beyond. Our Institute serves as a premier source of environmental legal scholarship, nonpartisan expertise, policy analysis and training.

---

http://www.law.ucla.edu/emmett

@uclalawemmett.bsky.social

@uclalawemmett

https://www.linkedin.com/company/emmett-institute-on-climate-change-the-environment/

(TOP ICON): DANIEL HARTANTO