LITTLE HOOVER COMMISSION

The High Cost of Electricity in California

Report #290 | October 2025

Milton Marks Commission on California State Government Organization and Economy

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The Little Hoover Commission, formally known as the Milton Marks "Little Hoover" Commission on California State Government Organization and Economy, is an independent state oversight agency.

By statute, the Commission is a bipartisan board composed of five public members appointed by the governor, four public members appointed by the Legislature, two senators and two assemblymembers.

In creating the Commission in 1962, the Legislature declared its purpose:

...to secure assistance for the Governor and itself in promoting economy, efficiency and improved services in the transaction of the public business in the various departments, agencies and instrumentalities of the executive branch of the state government, and in making the operation of all state departments, agencies and instrumentalities, and all expenditures of public funds, more directly responsive to the wishes of the people as expressed by their elected representatives...

The Commission fulfills this charge by listening to the public, consulting with the experts and conferring with the wise. In the course of its investigations, the Commission typically empanels advisory committees, conducts public hearings and visits government operations in action.

Its conclusions are submitted to the Governor and the Legislature for their consideration. Recommendations often take the form of legislation, which the Commission supports through the legislative process.

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This report is available from the Commission's website at www.lhc.ca.gov.

Letter from the Chair
October 17, 2025

The Honorable Gavin Newsom
Governor of California

The Honorable Mike McGuire
President pro Tempore of the Senate
and members of the Senate

The Honorable Brian Jones
Senate Minority Leader

The Honorable Robert Rivas
Speaker of the Assembly
and members of the Assembly

The Honorable Heath Flora
Assembly Minority Leader

DEAR GOVERNOR AND MEMBERS OF THE LEGISLATURE:

California's electricity rates are among the highest in the nation and contribute to the broader crisis of affordability facing state residents. Approximately one in five households is behind on their energy bill. Affordability has become the state's top policy concern, and most residents are currently unwilling to pay higher electricity costs to combat climate change.

Policymakers have responded with new legislative and executive measures to reduce electricity bills. The Little Hoover Commission has sought to complement these efforts, holding four hearings in 2025 to examine the drivers of rising energy rates and explore strategies to reduce them without compromising California's carbon reduction commitments, energy subsidies for low-income residents, or its wildfire mitigation efforts.

Drawing on testimony from experts in academia, consumer advocates, home solar advocates, environmental and environmental justice groups, utilities, and state agencies, these hearings explored how California can address high electricity costs through both specific policy actions and improvements to state regulatory processes.

This report offers a set of recommendations, including revisions to electricity rate design—such as adjusting the fixed charge structure—and exploring how the state might shift certain costs to non-ratepayer funding sources. It also recommends changes to regulatory proceedings and improvements in access to energy-related programs.

There are no simple fixes to the problem of high electricity costs. However, the Commission has been impressed by the commitment and creativity of the many Californians working toward solutions. We believe this report reflects some of the best thinking available, and we respectfully submit it while standing ready to assist as the state works to tackle this shared challenge.

Sincerely,

Pedro Nava, Chair
Little Hoover Commission

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EXECUTIVE SUMMARY

With the exception of Hawai'i, California's electricity rates are the highest in the country. The state's residential and commercial rates—charged to homeowners, most businesses, schools, and hospitals—are about twice the national average. Industrial rates charged for manufacturing, construction, and agriculture are more than two-and-a-half times the U.S. average.

California's high electricity rates are driven by a mix of wildfire-related costs, problematic rate design resulting in expensive cost shifts, utility profits on capital investments, and declining consumption that spreads fixed costs across fewer kilowatt-hours.

This affordability crisis has had several consequences. One in five households are behind on their energy bills. Industries that consume large amounts of electricity are wary about doing business in the state. And confidence in the value of California's clean energy goals has been undermined. Affordability is now the number one policy concern of residents.

The aim of this report's recommendations is to help reduce the burden of high electricity prices while preserving California's climate commitments and equity goals. The report identifies ways to mitigate rising costs, improve fairness in rate design, and strengthen oversight.

RATE REDESIGN

One major recommendation is to increase California's newly adopted income-graduated fixed charge with the goal of lowering per-kilowatt-hour rates, ease burdens in hot climate zones, and spread costs more equitably. The report also urges the Legislature to require a structured feasibility study for moving certain costs from ratepayer bills to the General Fund, Greenhouse Gas Reduction Fund, or federal grants.

REGULATORY REFORM

California must reform regulatory processes to control energy costs. This includes mandating timely completion of General Rate Cases, integrating cost-related proceedings such as wildfire mitigation and cost of capital into the General Rate Case, and involving the State Treasurer's Office to ensure fairer determinations of utility profit levels. The report also calls for an audit of California Public Utilities Commission staffing to assess whether the agency has enough capacity to provide rigorous oversight.

EQUITY AND ACCESS

The report recommends redirecting California Climate Credits to low-income and hot climate zone households during months when bills are highest, allowing rooftop solar investors to recover their costs before any Net Energy Metering benefits are reduced, and expanding support for low-middle income households. Simplifying access to clean energy innovation grants will further reduce barriers for academics and entrepreneurs involved in pioneering research in this field.

With Governor Newsom's 2024 executive order directing agencies to identify cost-saving opportunities, there is now an urgent need for clear guidance. This report seeks to provide some of that guidance, with the overarching goal of slowing rising electricity rates and ensuring that California can continue to lead on climate and clean energy while protecting vulnerable residents.

Recommendations

1. Increase the income-graduated fixed charge to reduce rates and spread costs more equitably.

2. Require a feasibility study and criteria-based framework for shifting some costs to non-ratepayer funding sources.

3. Mandate timely completion of General Rate Cases before the test year begins.

4. Task the State Treasurer's Office with providing independent analysis for Cost of Capital proceedings.

5. Integrate cost-related proceedings (e.g., wildfire, cost of capital) into the General Rate Case and streamline filings.

6. Direct the State Auditor to evaluate California Public Utilities Commission staffing levels and expertise.

7. Balance fairness for home solar investors with the need to reduce the Net Energy Metering cost shift by capping program duration and benefits.

8. Redirect California Climate Credits to CARE/FERA and hot climate zone customers during summer months.

9. Expand support for low-middle income households above the CARE threshold.

10. Simplify and accelerate clean energy grant processes.

INTRODUCTION

With the exception of Hawai'i, California's electricity rates are the highest in the country. [1] The state's residential and commercial rates—charged to homeowners, most businesses, schools, and hospitals—are about twice the national average. Industrial rates charged for manufacturing, construction, and agriculture are more than two-and-a-half times the U.S. average (Table 1).[2]

Because customers of publicly-owned utilities generally pay less, rates paid by customers of California's investor-owned utilities are higher still and have risen sharply over the past decade. And, while energy costs nationwide have largely tracked with inflation, real electricity prices in California have significantly outpaced it, creating year-over-year financial pressure for consumers.[3] This is clearly shown in a chart from a recent report by the Public Advocates Office comparing rate increases for the state's three major investor-owned utilities relative to inflation (Chart 1).[4]

This chart indicates that, from 2014 to 2025, Pacific Gas & Electric's average retail electricity rate rose 63 percent after controlling for inflation. Southern California Edison rose 32 percent and San Diego Gas & Electric rose 38 percent.

Despite high rates, California's monthly electricity bills are close to the national average because households use relatively little energy, helped by the state's mild climate and strong incentives for energy efficiency.[5] But many residents live in hot climate zones, do not have home solar systems or efficient homes and appliances, and do not qualify for energy bill assistance. As a result, the "average" bill masks the hardship many Californians face in affording electricity, especially when combined with the state's already high cost of living.

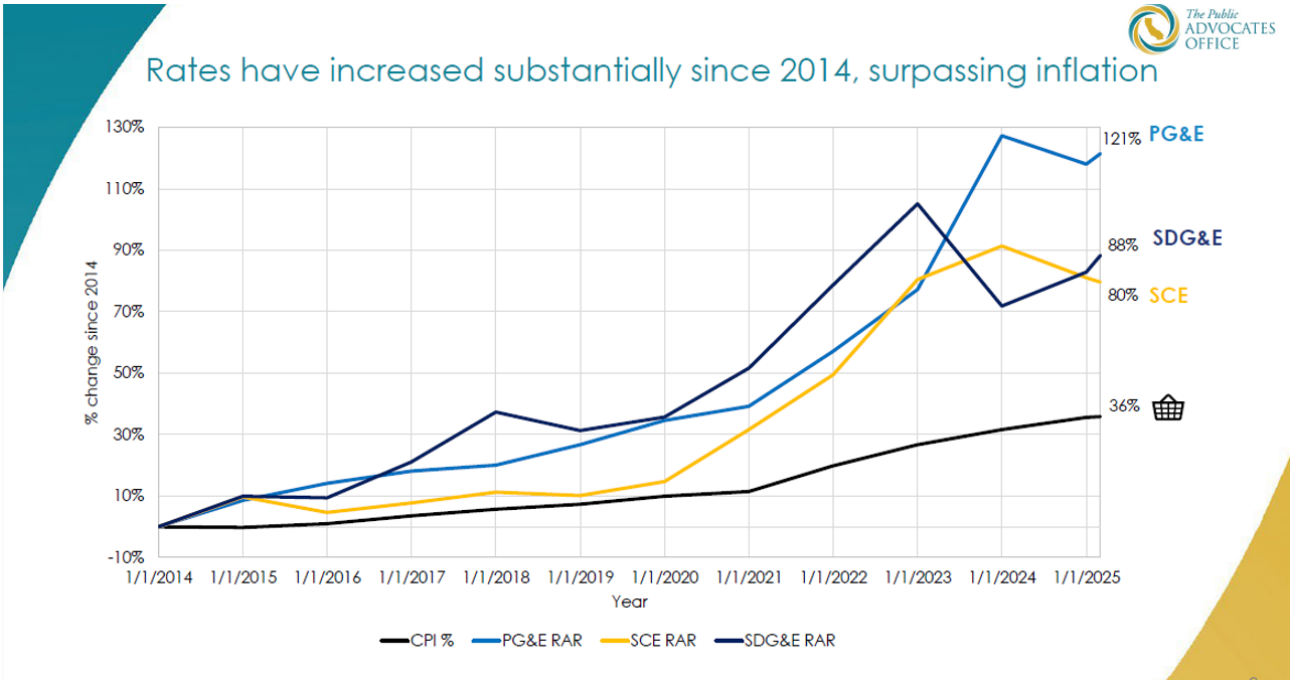
As of May 2025, 2.3 million investor-owned utility customers—over 20 percent of the households they serve—had unpaid energy bills, owing an average of $788.[6] And rising numbers of power shutoffs have prompted action by lawmakers.[7] This reflects a broader crisis of affordability.

Table 1: Average Price of Electricity by Sector (2014-2024)

	CA Residential	US Residential	CA Commercial	US Commercial	CA Industrial	US Industrial
Year	cents/kWh	cents/kWh	cents/kWh	cents/kWh	cents/kWh	cents/kWh
2024	31.86	16.48	25.29	12.85	21.98	8.15
2023	29.51	16.00	23.91	12.59	18.64	8.04
2022	25.84	15.04	21.81	12.41	17.09	8.32
2021	22.82	13.66	19.18	11.22	14.82	7.18
2020	20.45	13.15	17.53	10.59	14.27	6.67
2019	19.15	13.01	16.67	10.68	13.4	6.81
2018	18.84	12.87	16.34	10.67	13.2	6.92
2017	18.31	12.89	15.76	10.66	12.73	6.88
2016	17.39	12.55	15.07	10.43	11.92	6.76
2015	16.99	12.65	15.73	10.64	12.17	6.91
2014	16.25	12.52	15.62	10.74	12.34	7.1

Source: U.S. Energy Information Administration

Chart 1: Residential Electricity Rate Trends Compared to Inflation (2014-2025)



Source: Public Advocates Office

A recent statewide survey reports that one in five Californians "had difficulty paying rent or their mortgage…or [had] been unable to pay a monthly bill."[8] Moreover, the summer electric bills of Californians living in the state's hottest climate zones are more than double those of customers in cooler climate zones. This is a problem of equity because counties in hot regions like the Central Valley have lower median household incomes than in California's temperate coastal areas.[9]

Energy affordability is shaping voter priorities. 37 percent of residents named "cost of living, economy, [and] inflation" as the most pressing issue in the state. Housing costs/availability was runner-up at a distant 15 percent.[10] Rising electricity rates, on top of California's already high cost of living, appear to be eroding public support for policies designed to combat climate change and advance environmental justice as well. Almost 60 percent of residents have said they are unwilling to pay more for renewable electricity. And a growing number of Californians believe that "actions to reduce climate change" will have a negative impact on the job market.[11]

Policymakers have taken notice, especially in light of the 2021 inflation crisis and the 2024 election, with the number of electricity-related bills introduced in the California Legislature rising sharply over the past two sessions.[12] And, in October 2024, Governor Gavin Newsom issued an executive order directing the California Public Utilities Commission (CPUC) and the California Energy Commission to identify cost-saving opportunities within the ratepayer-funded electricity programs they oversee.[13] The order also instructed the CPUC to "modify or sunset any underperforming or underutilized programs." Additionally, it asked the California Air Resources Board to explore ways to better support low-income Californians through the California Climate Credit, and the Office of Energy Infrastructure Safety to seek strategies for reducing wildfire-related costs. The CPUC was also tasked with pursuing federal funding opportunities wherever possible. Several of the solutions provided will be discussed in this report.

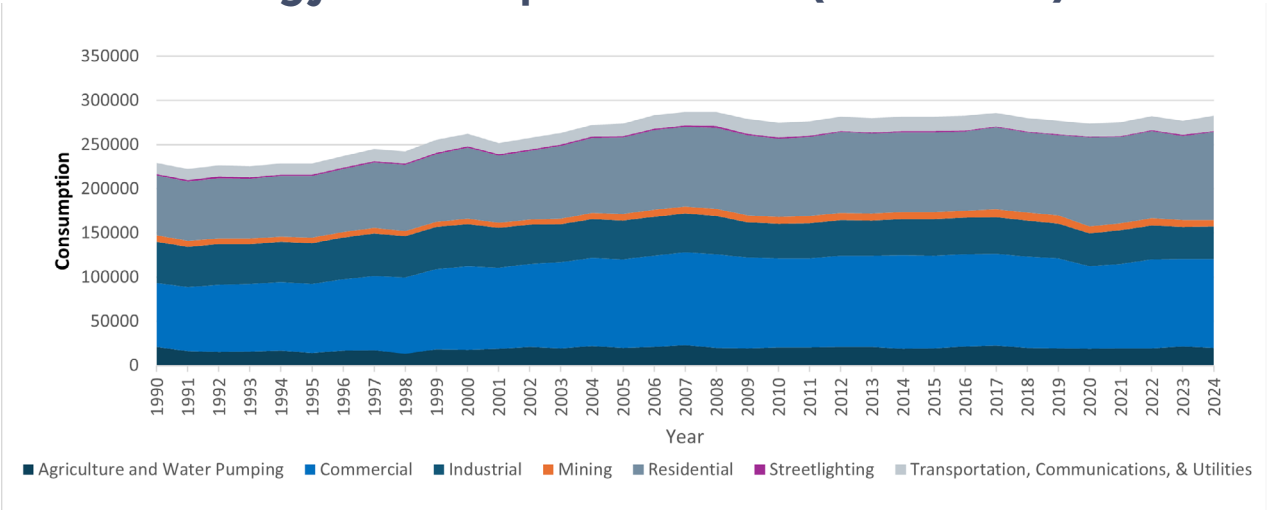
WHY ARE ELECTRICITY RATES SO HIGH?

Electricity rates in California are high because a variety of costs are packed into customers' bills, and

some of these costs are very high and rising quickly. More specifically, rates have been driven upward by a mix of wildfire-related costs, problematic rate design resulting in expensive cost shifts, utility profits on capital investments, and declining consumption that spreads fixed costs across fewer kilowatt-hours. At the same time, smaller add-ons such as low-income subsidies and green energy programs increase bills only slightly.[14]

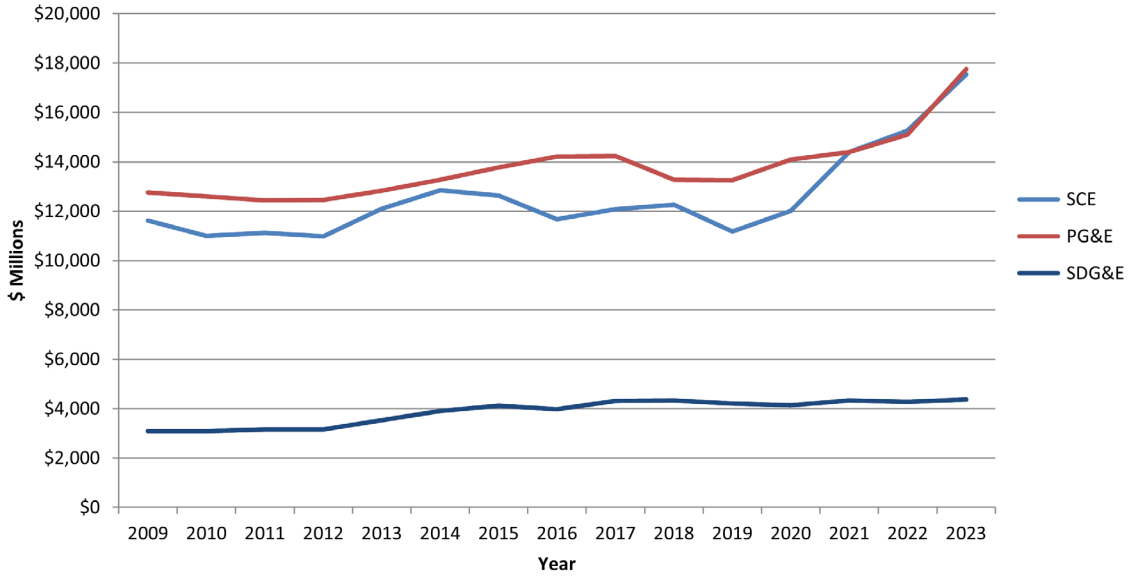
Electricity consumption has declined slightly since peaking in 2008, even as the state's population grew by 7 percent. But the amount the California Public Utilities Commission authorized utilities to collect from customers—called the revenue requirement—began rising at a moderate pace between 2012 and 2017, and much more sharply starting in 2019.[15] Because overall electricity consumption did not increase to match these higher costs, rates had to be raised to make up the difference. These trends are depicted in Charts 2, 3, and 4.

Chart 2: Energy Consumption in GWh (1990-2024)



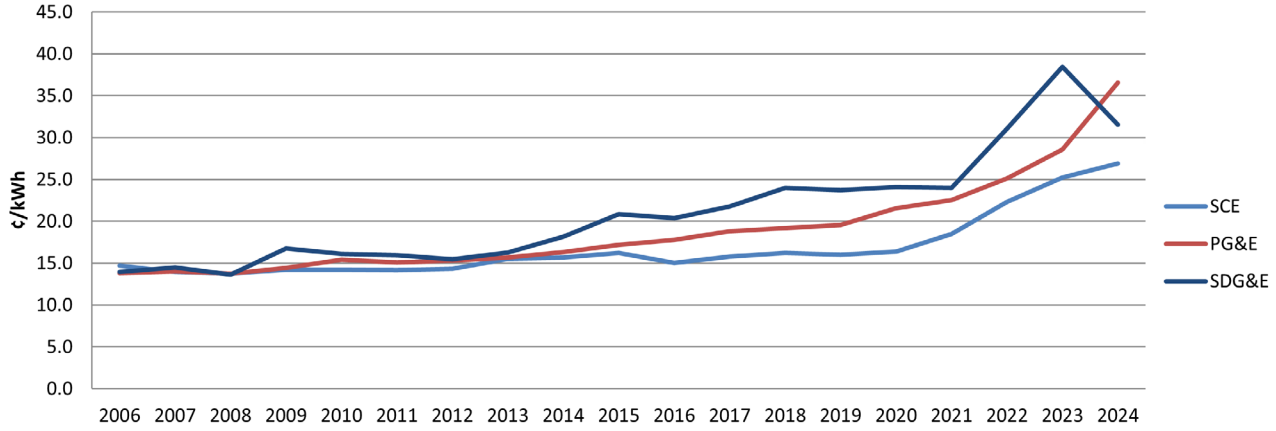
Source: California Energy Commission

Chart 3: IOU Revenue Requirement (2009-2023)



Source: California Public Utilities Commission

Chart 4: Average Electricity Rates (2006-2024)

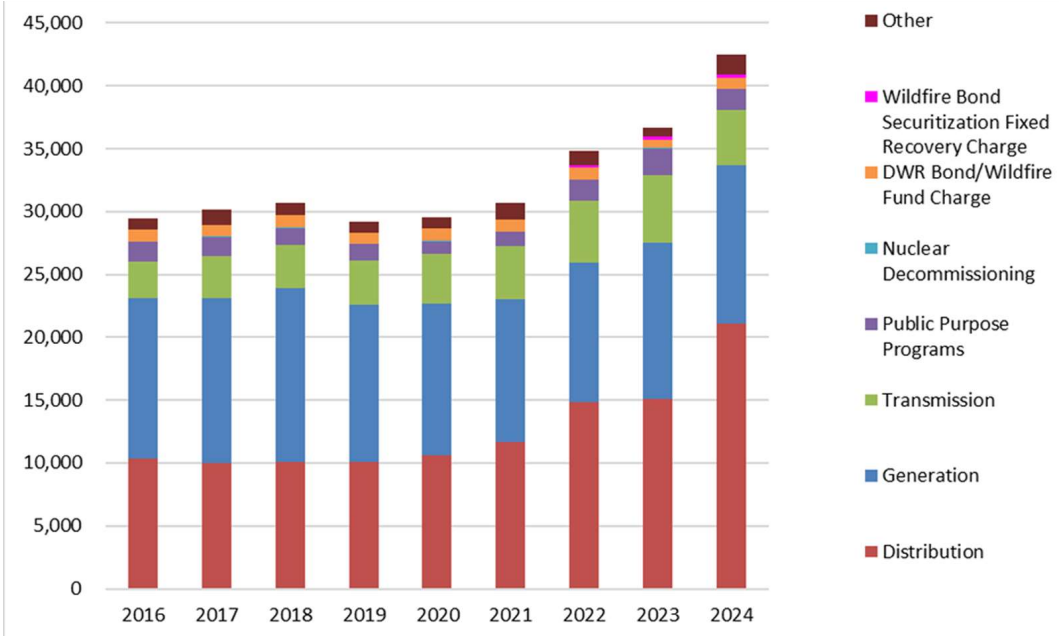


Source: California Public Utilities Commission

In 2019, the bundled system average rate for all three large investor-owned utilities was 19.8 cents per kWh. In 2023, it was 30.8 cents per kWh, an increase of 55 percent—outpacing the 38 percent increase in the total revenue requirement during this same period. Moreover, the revenue requirement for 2025 is projected to be between five and nine percent higher than 2024 according to the CPUC, meaning bills will continue to rise barring a significant change in rates policy.[16]

To explain the dramatic post-2019 rate increases described above, the components of the revenue requirement can be analyzed to determine the specific types of electricity costs that have risen over time.[17] As Chart 5 shows, from 2016 to now, several cost categories have remained flat. These include costs relating to generation (fuel, power plant operating and capital expenses, and power procurement from third parties), transmission (long-distance, high-voltage poles, wires, and substations), and public purpose programs that support low-income subsidies and clean/efficient energy programs.[18]

Chart 5: Annual Combined Revenue Requirement (2016-2024)



Source: California Public Utilities Commission

It is also noteworthy that public purpose programs represent only a small fraction of the total revenue requirement. Policymakers looking for opportunities to contain these costs must carefully assess the tradeoffs involved in shifting, reducing, or eliminating them.[19] For example, only about 3 percent of a customer's bill is used to support the CARE/FERA low-income subsidy programs. Clean energy programs cost even less. Cutting these programs would thus have a minimal impact on overall bills but would harm vulnerable Californians and impede the state's energy transition goals.

"Public purpose programs represent only a small fraction of the total revenue requirement. Policymakers looking for opportunities to contain these costs must carefully assess the tradeoffs involved in shifting, reducing, or eliminating them."

COST DRIVER 1: WILDFIRE

While generation, transmission, and public purpose program costs have remained relatively stable, distribution costs have surged, more than doubling between 2019 and 2024. Distribution costs refer to operating and capital expenses tied to the lower-voltage grid, including poles, wires, and substations. And the most significant factor behind this growth has been wildfire-related costs.

Climate change, aging infrastructure, and the growing population of residents in the "wildland-urban interface" have led to an increased frequency of catastrophic wildfires in California. Indeed, all of the state's 20 most destructive wildfires occurred after 1990.[20] Several of these, including the 2018 Camp Fire—the deadliest in state history with 85 deaths and nearly 19,000 structures destroyed—were ignited by sparks from power lines.[21]

This has imposed a serious financial burden on California's investor-owned utilities and, by extension, their customers, in the form of legal settlements, rising insurance premiums, and infrastructure upgrades designed to avoid igniting wildfires. Faced with $30 billion in wildfire-related liabilities, PG&E filed for Chapter 11 bankruptcy in 2019.[22] More recently, Los Angeles County, Pasadena, Sierra Madre, as well as individual residents filed lawsuits against Southern California Edison, alleging that its failure to properly maintain its grid infrastructure caused the 2025 Eaton Fire.

According to California law and, specifically, the doctrine of inverse condemnation, a utility can be sued for damages if its equipment causes a wildfire even if the utility was not negligent, say, in maintaining or upgrading its equipment.[23] To be clear, the Commission has not taken a position on inverse condemnation and whether changes should be made to the law. Nor has it fully examined the degree to which inverse condemnation has had an impact on California rates. Such an inquiry would require an extensive study, including hearings, testimony, and comparisons between California law and that of other states—a study the Commission has not undertaken at this time.

In any case, wildfire liability costs are significant and recent fires could potentially deplete the state's Wildfire Fund, a multi-billion dollar account meant to stabilize utilities facing sudden wildfire-related financial burdens.[24] To protect communities and reduce their exposure to financial liability, California utilities have undertaken extensive—and costly—wildfire mitigation efforts.

For example, PG&E has outlined four main strategies underlying its efforts: undergrounding power lines, "hardening" the grid by strengthening poles and insulating wires; using Enhanced Powerline Safety

Settings to automatically shut off power when fire threats are detected; and engaging in vegetation management to reduce the likelihood of power lines touching branches and starting fires.[25]

The CPUC's 2024 *SB 695 Report* outlines costs to ratepayers associated with mitigation efforts by the three large IOUs: approximately $27 billion from 2019-2023.[26] Of this total, $11 billion was spent on insurance costs alone. In 2023, wildfire-related costs represented between 7 percent (SDG&E) and nearly 13 percent (PG&E) of a customer bill.

For now, operational costs like vegetation management as well as insurance costs make up the bulk of this total. Capital expenditures (e.g., line undergrounding) make up only a small percent in part because these costs are spread out over time.[27] As the wildfire rate base continues to grow, however, these costs will likely rise in the future. Indeed, PG&E recently submitted its Wildfire Mitigation Plan for 2026–2028, which provides high-level cost projections: PG&E expects to spend $5.51 billion in 2026, $6.45 billion in 2027, and $6.91 billion in 2028 on wildfire mitigation efforts.[28]

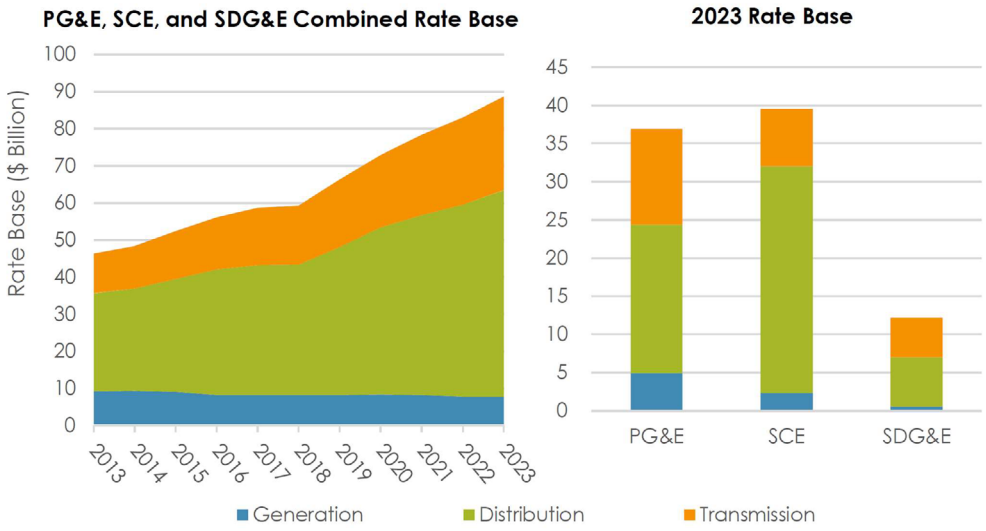
COST DRIVER 2: POWER FOR PROFIT

Utility profits and interest on loans also increase customer bills. While customers cover day-to-day grid operating expenses on an "at cost" basis, utilities make a profit on longer-term capital expenditures. Shareholders and lenders provide financing for things like infrastructure upgrades and expansions, and these costs are recouped slowly through customer bills with profit and/or interest added to the total.

The rate base is the total value of generation, transmission, and distribution assets owned by a utility. As for-profit companies, investor-owned utilities are allowed to charge a "rate of return" on the assets that make up their rate base. The overall rate base of utilities has risen steadily over the past 20 years. This upward trend accelerated beginning, once again, around 2018 or 2019, with distribution-related capital expenditures making up the bulk of the increase (Chart 6). [29]

This means that customers are paying not only for rising infrastructure costs themselves, but also for the profits and interest at rates authorized by the

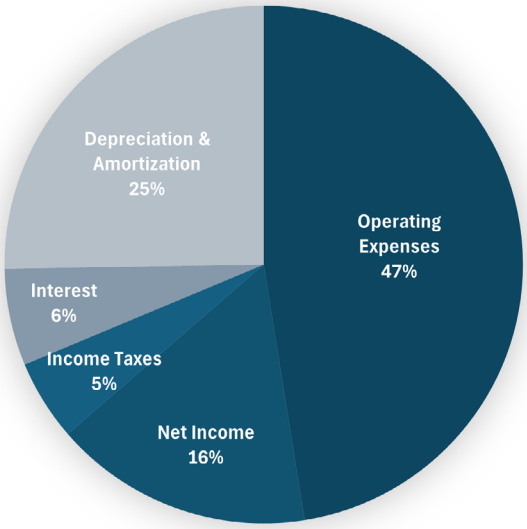
Chart 6: Rate Base Trends and Composition



Source: California Public Utilities Commission

CPUC. As consultant and former energy executive Mark Ellis has shown, according to SDG&E's 2024 General Rate Case filings, about half of its total revenue goes towards capital costs, and half of that pays for investor profits, interest on loans, and taxes (Chart 7).[30]

Chart 7: SDG&E Revenue



Source: M. Ellis / American Economic Liberties Project

COST DRIVER 3: RATE DESIGN

Customers pay for most electricity-related costs—up to the amount authorized by the CPUC—based on the quantity of electricity they consume as measured in kilowatt-hours (kWh). This is called volumetric pricing. This pricing model mirrors how most people pay for the bulk of the goods and services they buy, and on the surface, it seems fair that households above a certain low-income threshold would pay the same amount per unit of electricity consumed.

However, utility bills pay for both variable costs—for example, the natural gas burned by a power plant to make energy—and fixed costs that do not depend on how much energy a customer uses. Fixed costs cover things like grid maintenance, wildfire mitigation and insurance, and funding for a variety of electricity-related public benefit programs.

Volumetric pricing encourages conservation because customers pay more as they use more electricity. But, because it also recovers fixed costs, volumetric pricing can have unintended consequences, such as threatening funding for fixed-cost expenses if consumption decreases. And, if rates get too high, it can discourage electrification because the cost of charging an electric vehicle or using electric heat becomes prohibitively expensive.[31]

Because the electric grid is a shared system, declining participation—due to conservation or self-generation—results in a smaller customer base sharing a greater proportion of fixed costs. This phenomenon, known as a cost shift, has been identified as a major driver behind rising electricity rates in California and elsewhere.[32]

This is especially relevant to California's Net Energy Metering (NEM) program. Because solar customers contribute less toward fixed system costs because they generate their own electricity, non-solar customers end up paying more.[33] This cost shift is increased further because NEM 1.0 and 2.0 customers are compensated for power they supply to the grid at the retail rate. Indeed, the Public Advocates Office calculated that, in 2024, the NEM cost shift added $8.5 billion in extra charges to non-solar customers, although this figure has been debated.[34] This will be discussed in more detail below.

CHARTING A PATH FORWARD

Achieving significant electricity cost reductions may be possible, though challenging. California faces several state-specific headwinds—extreme wildfire risk, fast rising insurance costs, obligations to costly programs like Net Energy Metering, and its commitment to renewable energy—that make lowering electricity rates difficult.

A different approach is to "flatten the curve" of accelerating costs—setting clear goals for limiting rate increases over time and aligning utility budgets with those targets.[35] While dramatic short-term rate

cuts may be unrealistic without major tradeoffs, modest reductions that compound year after year could produce meaningful long-term savings.

Policymakers are already thinking in this direction. For example, an early version of a 2025 bill would have required utilities to submit an "inflation-constrained" scenario as part of their General Rate Case application.[36] Under this provision, the CPUC would only be allowed to authorize expenditures that outpace inflation if the utility provides "clear and convincing evidence" that such expenditures are necessary.

Finally, it is important to recognize that achieving significant universal rate cuts will be difficult without shifting major costs onto non-ratepayer funding sources. Efforts may therefore need to be targeted towards those who carry the greatest cost burdens. The state should also prioritize streamlining utility-related processes and reducing waste to control costs and increase public confidence. These priorities are reflected in the recommendations that follow.

RATE REDESIGN FOR CALIFORNIA'S ENERGY FUTURE

Electric rates in California are high in large part because these rates pay for much more than just the cost of electricity itself. How these costs are recovered—through volumetric pricing, fixed charges, or non-ratepayer sources—affect not only customer bills, but also the state's ability to achieve its climate and equity objectives. The Commission believes that modifications to current rate design can both lower costs for customers and stabilize how electricity-related expenses are funded.

LOWER RATES BY RAISING THE FIXED CHARGE

To help address the problems inherent in volumetric electricity pricing outlined above, most customers of California's investor-owned utilities will begin paying a $24.15 fixed charge beginning in late 2025 or early 2026.[37] Low-income households receiving a bill subsidy will pay $6 or $12, depending on the program in which they are enrolled.

The fixed charge is intended to cover costs that do not vary with consumption as described above. It is not expected to significantly change customers' total monthly bills because rates will go down by five to seven cents per kWh (about 15 percent), thereby offsetting the charge. California is unusual in that its investor-owned utility customers do not pay a fixed charge. In fact, almost 75 percent of such customers nationwide pay a charge of between $5 and $20 and, in some cases, the charge is markedly higher.[38]

Supporters of the fixed charge concept point to several benefits. By lowering the per-kWh electricity rate, it will provide bill relief for high-use customers, including larger, often lower-income households, as well as those in hot climate zones that rely on air conditioning.[39] The fixed charge also reduces seasonal bill fluctuation for customers and creates a more stable revenue stream for utilities. And, by lowering overall electricity rates, it may encourage the adoption of electric vehicles and appliances, making their use potentially cheaper than non-electric alternatives.[40]

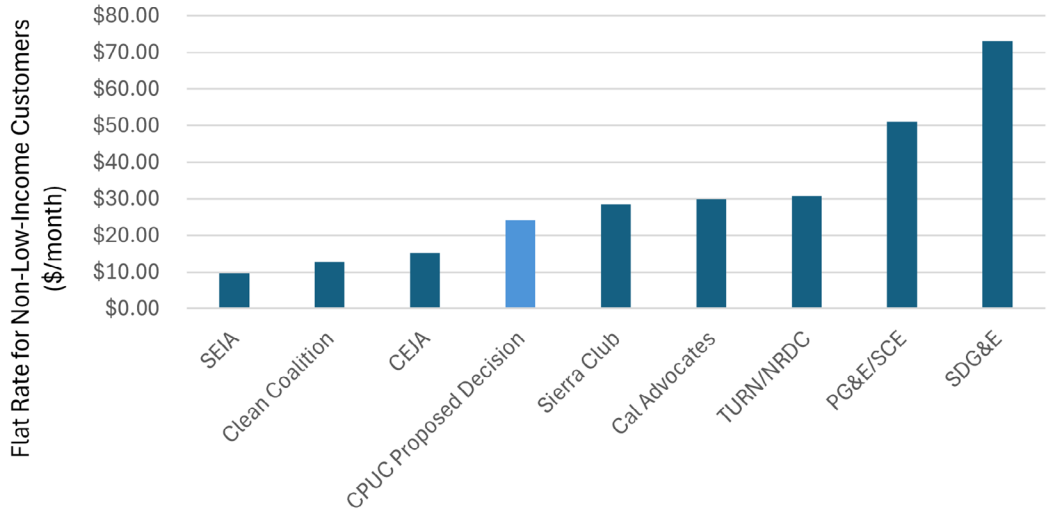
Importantly, by charging a flat monthly fee, the state will ensure that all customers—including rooftop solar owners—contribute fairly to fixed utility costs such as wildfire mitigation, grid maintenance, and public-purpose programs. Currently, every customer pays a "non-bypassable" charge on the energy they consume from the grid to help pay for some of these costs.[41] But, because this charge is volumetric and solar owners consume less energy from the grid, they may not always contribute their full share toward these costs.

The adopted fixed charge has drawn criticism, however. Some argue it will increase bills for customers who conserve electricity, while others worry that lower rates could encourage wasteful use. Critics have also raised concerns that the charge provides insufficient support for low-income households and fails to reflect differences in income levels.[42]

Several alternative proposals were offered, including a highly progressive structure modeled after state income tax brackets, and simpler tiered models developed by the Public Advocates Office and the utilities themselves.[43] The overall amount of the charge was also a matter of debate as can be seen from a chart published by the CPUC in its AB 205 Fact sheet (Chart 8).[44]

The charge the CPUC adopted is identical—down to the cent—to that billed to Sacramento Municipal Utility District (SMUD) customers and is presented as the median among municipal utilities in the state. However, by setting the charge at this level, the CPUC may have limited the potential benefits of the charge.

Chart 8: Comparison of Proposed Fixed Charges



Source: California Public Utilities Commission

Table 2: Fixed Charge Impact on Rates

		PG&E		SDG&E		SCE	
#	**Revenue Requirement Category**	**Cumulative Fixed Charge**	**Cumulative Volumetric Rate Reduction**	**Cumulative Fixed Charge**	**Cumulative Volumetric Rate Reduction**	**Cumulative Fixed Charge**	**Cumulative Volumetric Rate Reduction**
		($/month)	**($/kWh)**	**($/month)**	**($/kWh)**	**($/month)**	**($/kWh)**
1	Marginal Distribution Customer Access Costs	$7.59	$0.02	$11.26	$0.03	$7.88	$0.02
2	Non-Marginal Distribution Costs	$45.52	$0.10	$41.43	$0.11	$41.92	$0.09
3	Public Purpose Programs (Excl. CARE surcharge)	$50.36	$0.11	$45.75	$0.13	$48.13	$0.10
4	PPP CARE Surcharge and Other Nonbypassable Charges	$58.21	$0.12	$55.7	$0.15	$51.27	$0.11
5	Electrification Incentive Adjustment	n/a	n/a	$74.00	$0.20	n/a	n/a

Source: SCE, PG&E, SDG&E

Many groups—including ratepayer advocates such as the Public Advocates Office ("Cal Advocates") and The Utility Reform Network—argued for a higher fixed charge than the one ultimately adopted. And, in their joint proposal, the three large IOUs contended that the charge should not simply replicate SMUD's dollar figure, but instead be scaled to reflect the IOUs' much larger revenue requirements and customer bases. Using SMUD's charge as a percentage of revenue recovery, they proposed monthly charges in the $50 range (and higher for SDG&E)—more than double the $24 ultimately adopted.[45]

Of particular note is a table the IOUs submitted illustrating the cumulative fixed charges required to cover different non-variable components of the revenue requirement, alongside the corresponding step-by-step reductions in volumetric rates (Table 2).[46]

This table is helpful for several reasons. First, by linking specific non-variable costs to specific fixed charge amounts, policymakers can get a clearer sense of the dollar amounts required to meet different costs. For example, wildfire mitigation and vegetation management expenses fall under the category of "non-marginal distribution costs". For PG&E, funding this cost category alone would require a fixed charge of $37.93—well over the total amount of the adopted charge for 2025-26.

These figures show that, under the IOUs' proposal, the breakeven point for energy consumption—the level of usage at which savings from lower per-kilowatt-hour rates offset the higher fixed charge—would shift downward. For example, applying UC Berkeley professor Severin Borenstein's method to the proposed fixed charge, a PG&E household would need to use about 485 kWh per month to offset a $58.21 fixed charge with the associated $0.12 per-kWh rate reduction (485 kWh × $0.12 ≈ $58.20). (The breakeven point under the adopted $24.15 charge is 514 kWh per month).[47]

Based on these calculations and the discussion above, the Commission believes a higher fixed charge and corresponding reduction in rates will bring a number of benefits:

- **Broader Cost Distribution:** Fixed costs are spread more evenly across all customer classes, including Net Energy Metering customers.
- **Targeted Bill Impacts:** Larger households and those in hot climate zones would benefit because their higher energy use means they would reach the "breakeven point" more quickly, with savings increasing as consumption grows.
- **Stability for Customers:** Seasonal fluctuations in bills would be moderated, providing greater bill predictability for households that rely heavily on electric heating or air conditioning.
- **Incentivizing Electrification:** Lowering electricity rates makes it less expensive to operate an electric vehicle or appliance, potentially encouraging adoption.
- **Utility Revenue Certainty:** Revenue stream volatility tied to seasonal demand or increasing cost shifts is reduced.

While the Commission does not advocate for a specific fixed charge amount, it does recommend that the Legislature task the CPUC with revisiting and increasing the fixed charge to advance the equity and climate objectives outlined above. Geographic inequities persist in California—residents of hot regions, who often have lower incomes, face high energy burdens they cannot avoid. At the same time, the state's climate goals are more likely to be met under a rate structure that encourages electrification.

That said, there is a real risk that both rates and the fixed charge could simply continue to climb once implementation begins. In fact, investor-owned utilities immediately sought the ability to raise the fixed charge above $24, not only through the General Rate Case process but between proceedings.[48]

To protect ratepayers, the CPUC should provide guarantees against raising rates beyond a certain amount once the new fixed charge is in place. For example, any future increases to the fixed charge could be pegged to inflation. Moreover, periodic

equity tests could also be mandated to ensure that proposed increases do not disproportionately burden low-income customers or residents of high-cost climate zones. These types of measures will help ensure that utilities are able to recoup costs while ensuring that customers continue to benefit from the original intent of the fixed charge.

RECOMMENDATION 1: The Legislature should mandate that the CPUC increase the income-graduated fixed charge with the goal of lowering rates, reducing the cost burden on customers in hot climate zones, and encouraging electrification while spreading cost drivers such as the NEM program and wildfire mitigation expenses across all customer classes. Safeguards should be established to guarantee that rates will not be increased beyond defined limits following the implementation of the charge and that targeted customers continue to benefit.

DEVELOP A STRATEGY FOR IDENTIFYING FUNDING SOURCES

In his executive order, Governor Newsom directed both the CPUC and CEC to identify programs "whose funding might more appropriately come from a source other than ratepayers". The source or sources of this funding were not specified, but could potentially include the State General Fund or Greenhouse Gas Reduction Fund, as well as grants. In its response, the CPUC suggested using non-ratepayer funding to pay for the NEM cost shift and "any future cost-shifting programs", to increase CARE and FERA subsidies, and to pay for programs that do not meet its cost-effectiveness threshold. It also discusses reallocation of the Climate Credit to reduce rates, and briefly mentions funding wildfire mitigation costs using "a source other than ratepayers."[49]

The Little Hoover Commission does not take a position for or against using non-ratepayer funding sources to lower electricity rates. However, it recommends that the Legislature move the discussion beyond broad suggestions and require a thorough, evidence-based assessment of the idea. This should include developing clear criteria to (1) identify which costs should not be recovered through monthly bills and (2) match those costs to appropriate non-ratepayer funding sources. An example of a possible scoring-based mechanism for such an assessment has been provided in Appendix C.

Furthermore, the recommended report should contain a formal feasibility study to assess the potential benefits, limitations, risks, and long-term implications of funding certain costs from non-ratepayer sources. For example, supporters of moving costs onto the General Fund argue that it would make utility funding more progressive in contrast to the regressive status quo.[50] California's tax system takes income into account, while utility bills remain flat across income brackets with the exception of the CARE and FERA subsidy programs.

Yet there are tradeoffs that should be taken into account. The state budget is vulnerable to economic fluctuations, potentially resulting in program cuts. Programs that are removed from bills and tied to the General Fund could face risks in lean years, potentially undermining long-term planning and investments. A legislatively-mandated feasibility study could help clarify which energy-related costs, if any, are appropriate to shift off customer bills, and under what conditions such a shift would be fiscally prudent and equitable.

RECOMMENDATION 2: The California Legislature should require the CPUC to create a clear, criteria-based framework to determine which electricity costs should be shifted from customer bills to alternative funding sources, and to match each cost with the most appropriate source, such as the General Fund, Greenhouse Gas Reduction Fund, or federal grants. This framework should be accompanied by a formal feasibility study to assess the benefits, risks, and long-term fiscal implications of such shifts, including their potential impacts on equity, affordability, and program stability. A structured approach would ensure that any movement of costs off bills is transparent, fiscally prudent, and aligned with California's policy goals.

Regulatory Reform: Keeping Power in Check

Californians get their electricity from different sources depending on where they live—and sometimes by choice. Most are served by either investor-owned utilities (IOUs) or publicly owned utilities (POUs) such as municipal utilities. In many IOU service areas, residents can also opt to have the generation portion of their electricity provided by a community choice aggregator (CCA), which is a publicly owned and locally governed entity.

Although the state regulates certain aspects of all these entities, investor-owned utilities are subject to the heaviest regulation.[51] This is because they are considered "natural monopolies" and, as such, have been granted the sole right to operate the transmission and distribution infrastructure in their respective service territories.[52] This is allowed because competition in electric infrastructure has historically harmed markets and the public interest—imagine multiple poorly regulated power lines crisscrossing neighborhoods, customers losing power due to companies going out of business, or being denied service due to profit motives.[53]

In the absence of market competition, it is the job of the California Public Utilities Commission to regulate investor-owned utility funding and profits, set rates, implement and monitor policies and programs mandated by the State Legislature, and to ensure that Californians have access to safe, reliable electricity over the short and long term.[54]

THE GENERAL RATE CASE

The total amount investor-owned utilities are allowed to collect from their customers and, ultimately, the electricity rates for each customer class, are determined through the two phases of the General Rate Case (GRC). Through that process, revenue requirements are determined on a four-year cycle, with an initial "test" year followed by three "attrition" or "post-test" years in which annual revenue requirements are adjusted.[55] This allows for changes in the revenue requirement without the need for annual proceedings.

The General Rate Case is an "evidentiary process" that is often equated to a trial.[56] It begins with an application from the utility presenting its rationale for the total amount it should be allowed to collect from customers in a given test year, typically higher than in the prior cycle due to changes in operating conditions, inflation, and the need to recover costs for new capital projects. In a series of hearings presided over by an administrative law judge, the utility and formal parties—including the CPUC's own Public Advocates Office, outside experts, and advocates—present evidence, submit testimony, and cross-examine witnesses.

The administrative law judge then issues a proposed decision, which the commission may adopt, modify, or reject. In-person and virtual public forums are held throughout the process to solicit input from the public. A similar process is used for both Phases I and II of the General Rate Case: Phase I determines the total revenue requirement, and Phase II decides how that amount is allocated among customer classes and the specific rates each will pay.

MANDATE TIMELY COMPLETION OF THE GENERAL RATE CASE

General Rate Case proceedings are huge undertakings. One CPUC overview describes the rate case as an "18-month+ process" from filing to decision.[57] In fact, since 2017, Phase I proceedings have averaged over 26 months—over two years—with approvals often granted well into the test year (Chart 9). Phase II proceedings typically begin before Phase I concludes and are decided even later, sometimes extending beyond the test year entirely.[58]

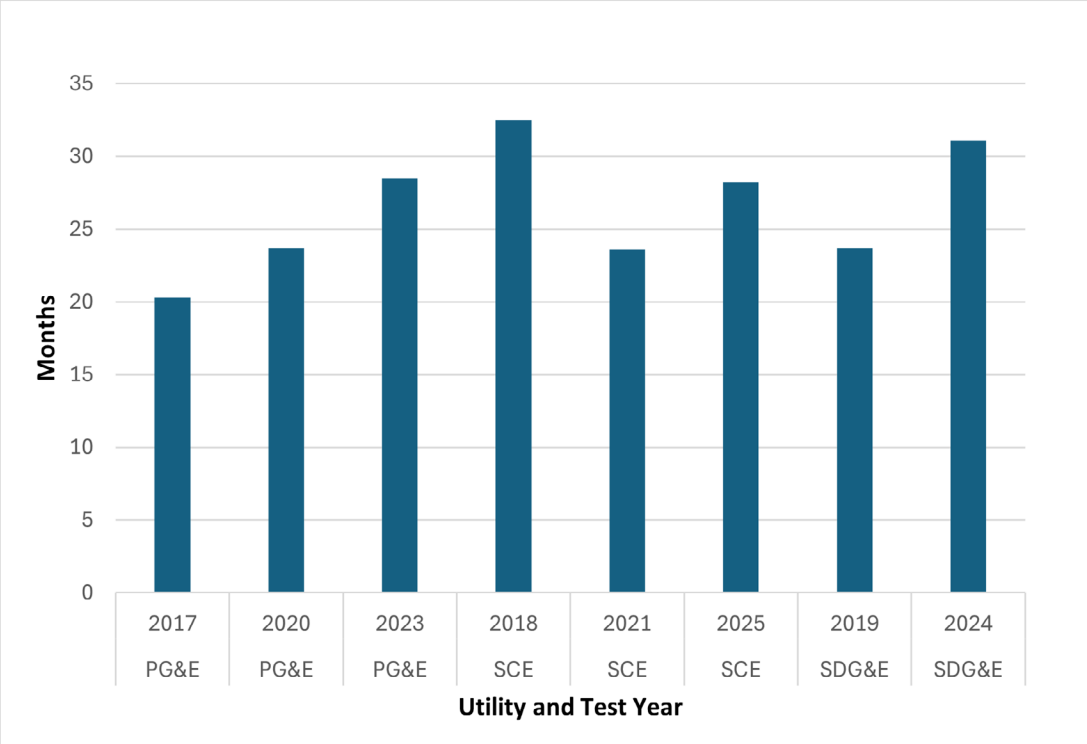
These delays have several consequences. When decisions for a test year extend into or beyond that year, the very concept of the test year becomes muddled. Customers initially pay rates based on

the previous revenue requirement, then must catch up by paying the new—typically higher—revenue requirement retroactively. The problem is compounded when the Phase II decision lags behind Phase I, leaving customers to pay the updated revenue requirement under outdated rate designs. Delays also slow down capital improvement projects and increase the cost of capital more generally.

These concerns are detailed in a motion by Southern California Gas Company and San Diego Gas & Electric urging the CPUC to commit to a General Rate Case timeline that would approve new rates as close as possible to the start of the test year.[59] The motion argues that "a timely decision in a General Rate Case proceeding not only provides regulatory certainty and demonstrates the Commission's commitment to prior decisions, it also helps protect ratepayers by reducing rate volatility and providing rate stability." It notes that the CPUC attributed the delay to "overlap" with other proceedings, but counters that accepting this rationale could result in "perpetual delays" in all future cases. It should be added that protracted proceedings may invite unwarranted complexity, distracting parties from addressing pressing challenges in a focused manner.

The Commission therefore recommends that the Legislature require Phases I and II of the General Rate Case to be completed within a defined timeline that concludes before the start of the test year with provisions for extension in extraordinary cases. There is precedent for this among several other states. To cite just a few examples, the Regulatory Commission of Alaska—its equivalent to the CPUC—has 270 days (9 months) to rule on a utility's application for a new revenue requirement or rate design or the application automatically takes effect.[60] In Ohio, the process must be completed within 275 days and, within that timeframe, certain actions must also be completed by various deadlines.[61] Although seemingly not bound by law, New York State's Public Service Commission has committed to an 11-month timeline.[62] Clear, month-by-month guides specify what must be accomplished to complete the review on time.

Chart 9: Length of General Rate Case Proceedings from Filing to Decision



Source: General Rate Case Filings (CPUC)

California should adopt a similar approach to these states, supported by the streamlining and staffing recommendations outlined in this report. Californians will benefit from—and are entitled to—the timely completion of rate case proceedings, which would improve rate stability and ensure that utility budgeting reflects current market conditions.

RECOMMENDATION 3: To reduce costs and improve regulatory responsiveness, the Legislature should mandate that General Rate Cases be completed within a specified timeline prior to the start of the test year in question, with default mechanisms in place if deadlines are missed.

ENSURE FAIR COST OF CAPITAL ASSESSMENT

In addition to the revenue requirement, the CPUC also determines how much profit each utility is allowed to earn—based on market conditions and company risk—through its separate triennial Cost of Capital proceedings.[63] Investor-owned utilities do not earn profits on day-to-day costs such as energy generation, distribution, or operating expenses, which are provided to customers at cost. Instead, utilities are allowed to earn a profit on long-term capital expenditures and to pay interest on money borrowed in order to attract financing.

Because utilities earn profits on capital improvements, they may be incentivized to pursue projects that are more expensive than necessary, since expensive projects maximize investor returns. Moving overhead wires underground to prevent wildfire ignition is a commonly cited example. According to the CPUC, California's IOUs have reported that moving existing overhead distribution lines underground will cost anywhere from $1.85 million per mile to $6.1 million per mile—about ten times the cost of building new overhead lines. Given that PG&E alone plans to underground 10,000 miles of powerlines, this both represents a major expense and raises questions about whether utilities tend to choose the most cost-effective solutions or the most lucrative ones.[64]

Investor-owned utilities in California submit Cost of Capital Applications to the CPUC every three years, most recently in March of 2025.[65] These filings include proposed costs for long-term debt, preferred equity, and common equity, along with a recommended debt-to-equity ratio. Of particular significance is the return on common equity—the utility's allowable profit rate—which is intended to attract financing for capital improvements. Return on equity is, by necessity, a prediction based on market forces, which change along with the economy and the strengths and liabilities of the utility in question.[66] That said, for the past several decades, the average authorized return on equity has generally fallen between 9 and 12 percent for utilities nationwide.[67]

Utilities argue that high rates of profit are necessary to attract investors and finance infrastructure. But some believe these returns are higher than necessary and that the methods used to calculate them favor utilities. In its most recent filing, Southern California Edison justifies its proposed return on equity by citing market volatility and heightened financial risk. Much of its rationale is based on testimony from Dr. Bente Villadsen of the Brattle Group, who uses two proxy groups (electric utilities and other regulated utilities) and several models to estimate a "reasonable" return on equity.[68] Dr. Villadsen concludes that Southern California Edison's risk profile warrants a return on equity at the high end of the range: 11.75 percent.

Utilities also defend higher profit margins by pointing to the risks they face. For example, in a recent filing, PG&E gave several reasons for requesting a higher return on equity—that is, rate of profit on investment.[69] These included the company's exposure to wildfire-related risks and concerns that the state's wildfire fund may not be sufficient to cover future liabilities. The company also cited the need for major spending on wildfire prevention and clean energy projects. And, because it is still recovering from bankruptcy and has a relatively weak credit rating, it argued that a higher return on equity would help attract investors and improve its longer-term financial stability.

But critics have shown that utility regulators often approve profit levels that exceed what is truly needed to attract investment. A working paper by two Berkeley Energy Institute graduates shows that utility profit rates have stayed high and steady nationwide for the past 40 years—even as the actual cost of raising capital has gone down.[70] Using the Capital Asset Pricing Model, a widely accepted method for estimating the cost of capital, the authors found that ROEs granted to utilities have remained above the model's prediction.[71]

Mark Ellis points to several reasons for this pattern: utilities have the resources and expertise to make a difficult-to-counter argument for higher profits; may rely on questionable or overly complex economic models; and justify high returns by referencing past high rates and other states, potentially reinforcing a "cycle" of generous allowances.[72]

To disrupt this pattern, the Commission recommends that the Legislature mandate that the State Treasurer's Office provide the initial determination of the rate of return on equity and return on debt (collectively, the rate of return) authorized for each utility. The utility and advocacy groups can then respond to this initial determination as parties.

As California's "lead asset manager, banker and financier," the State Treasurer's Office is well positioned to perform this role, drawing on its expertise in capital markets, interest rate trends, and investor expectations.[73] Involving the Treasurer's Office early in the process could introduce a more neutral, market-oriented benchmark, improve transparency, and reduce the time and resources currently spent on protracted debates over these figures.

RECOMMENDATION 4: To improve fairness, transparency, and cost-effectiveness, the Legislature should task the State Treasurer's Office with conducting an independent analysis to inform Cost of Capital proceedings at the CPUC. This analysis should identify appropriate borrowing rates and return on equity, based on current market conditions and utility-specific risk. This approach would help prevent inflated profit requests, reduce strategic over-asking, and ground CPUC decisions in objective and fiscally prudent thinking.

COORDINATE AND STREAMLINE COST PROCEEDINGS

Uncoordinated timelines as well as voluminous and duplicative filings get in the way of holistic oversight of utility spending. The General Rate Case occurs every four years and is staggered across utilities. By contrast, both Wildfire Mitigation Plan reviews and Cost of Capital proceedings follow a three-year cycle and are not staggered, requiring all utilities to file at the same time. Other cost-related proceedings follow less predictable schedules.

Moreover, as noted above, utilities often employ well-resourced consultants—funded by ratepayer revenue—who present detailed and technically complex proposals that can be difficult to challenge.[74] For example, PG&E's General Rate Case docket for 2023–26 includes over 560 separate filings, and its Wildfire Mitigation Plan for 2023–25 runs more than 1,500 pages.[75] These materials contain complex financial models, legal arguments, engineering specifications, and risk assessments—all of which require close scrutiny to ensure reasonable costs and equitable outcomes.

The Commission therefore recommends that this be addressed through improved synchronization and integration of cost-related proceedings, including—but certainly not limited to—the General Rate Case, Wildfire Mitigation Plan review, and Cost of Capital proceedings. It also recommends that utility filings be standardized and simplified to the extent possible without sacrificing detail necessary for adequate oversight.

There has already been policy proposed along these lines. The CPUC recently recommended reducing wildfire-related costs by better aligning the Wildfire Mitigation Plan with the General Rate Case process. Other states do not separate rate cases from cost of capital determinations; for example, these deliberations are integrated in New York and

Texas, among others.[76] Indeed, in California, cost of capital was part of the General Rate Case prior to 1990 and was reviewed annually until 2008. This history suggests that maintaining an up-to-date sense of the cost of capital has long been regarded as valuable. The Commission recommends returning to this practice, while also taking steps to ensure that deliberations be concluded in a timely fashion.

RECOMMENDATION 5: Integrate as many cost-related regulatory proceedings as possible (e.g., cost of capital, wildfire) into the General Rate Case to facilitate holistic budget planning. Modernize CPUC proceedings to improve accessibility and efficiency by adopting streamlined standards for filings and accelerating review timelines.

EVALUATE CPUC STAFFING

The Little Hoover Commission recommends evaluating whether the California Public Utilities Commission has sufficient staff capacity and expertise to effectively regulate investor-owned utilities, with a particular focus on its ability to review complex filings, oversee utility performance, and engage the public. This recommendation does not call for an automatic increase in staffing, but for an in-depth analysis of staffing levels, allocations, and coordination to inform potential organizational changes.

Multiple witnesses raised concerns that the CPUC remains at a disadvantage relative to the utilities it regulates. During the Commission's February hearing, Severin Borenstein testified that CPUC staff are overwhelmed: "I think the CPUC is massively understaffed and undercompensated, and they are just overwhelmed with the many things that they are required to do with limited staff. And when they get into these rate of return hearings, the utilities are able to bring world experts in finance, and the CPUC is really outgunned and outmanned on this."[77]

However, the number of staff dedicated to utility regulation has more than doubled from 440 in Fiscal Year 2019–20 to 898 in Fiscal Year 2025–26.[78] The Commission is aware of this increase and does not assume that additional staffing is automatically warranted. In any case, the complexity of proceedings and the high stakes for ratepayers suggest a need for closer scrutiny. The CPUC's explanation of delays in the General Rate Case process due to competing priorities, as noted above, should also be taken seriously as a potential indicator of limited resources. A formal evaluation by the State Auditor would help determine whether the agency's current staffing levels, allocations, compensation structures, and recruitment pipelines are adequate to meet its expanding responsibilities.

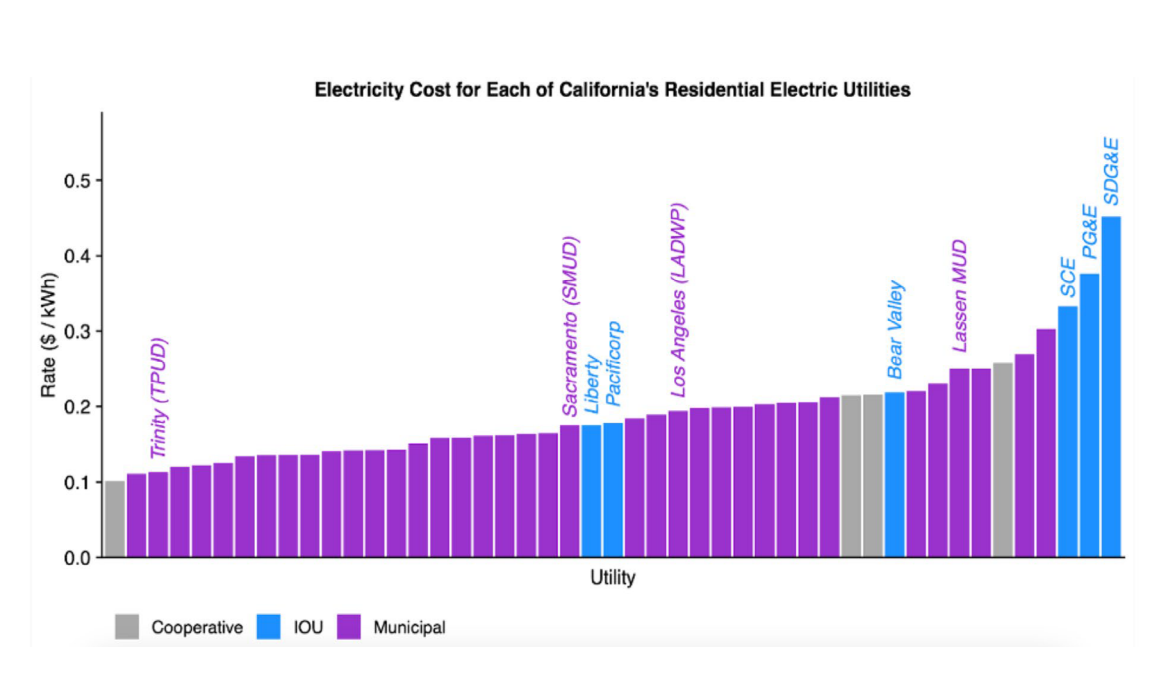
RECOMMENDATION 6: The Legislature should direct the State Auditor to evaluate whether the California Public Utilities Commission has adequate staffing and expertise to conduct rigorous, timely rate case and cost of capital reviews, and effectively monitor utility and program performance. The Auditor should recommend increases or reallocations as needed to strengthen oversight.

Why Aren't IOUs as Cheap as Municipal Utilities?

Municipal utilities are public agencies owned and operated by local governments. As publicly-owned utilities, they typically serve defined geographic areas like cities or counties and are largely unregulated by the CPUC.[79] Some—like the Los Angeles Department of Water and Power (LADWP) and Sacramento Municipal Utility District (SMUD)—own both distribution and generation assets, while others rely on energy markets to procure electricity.

Electricity rates charged by municipal utilities are generally lower than the rates of large IOUs. This can be seen in a chart created by UC Berkeley professor Meredith Fowlie, which compares electricity rates per kWh across a large number of investor- and publicly-owned utilities in California (Chart 10).[80]

Chart 10: Rate Comparison by Utility Type (July 2023)



Source: Energy Institute at Haas / UC Berkeley

This rate disparity can be explained, in part, by structural differences. Publicly-owned utilities, such as municipal utilities, do not need to seek profits for shareholders and, for this reason, are not incentivized to pursue expensive capital projects to generate return on equity. They can also access tax-exempt municipal bonds, allowing them to raise capital at lower cost.[81]

Investor-owned utilities, by contrast, face cost drivers that municipals often do not. IOUs often operate in large swaths of wildfire-prone regions, are liable for wildfire-related damages, and must make major infrastructure investments to mitigate wildfire risk. IOUs are also required to

comply with a variety of costly state mandates, such as the Net Energy Metering program. And, as Severin Borenstein testified, IOUs serve geographically large and diverse territories, which introduces significant operational inefficiencies.[82]

Most municipal utilities serving California's metropolitan areas were established in the late 1800s and early 1900s. With the exception of the Southern California Public Power Authority, no publicly-owned electric utility serving a major population center has been formed since the 1940s.[83]

The California Constitution permits cities and counties to operate public utilities, including electric utilities, and state law outlines the process for forming Municipal Utility Districts.[84] Nevertheless, investor-owned utilities (IOUs) often oppose municipalization, not least because it represents the departure of their customer base. For example, PG&E has opposed municipalization in San Francisco.[85] And, in 2010, PG&E also lobbied strongly in favor of Proposition 16, which would have required a two-thirds supermajority of voters to form a municipal utility, making municipalization much more difficult. The measure was defeated, though only narrowly.[86]

Equity and Access

The report's final set of recommendations addresses electricity-related programs under the broad themes of equity and access—ensuring these initiatives are fair, easy to participate in, and provide meaningful benefits to the people they are intended to serve. Programs covered include Net Energy Metering (NEM), the California Climate Credit, the Family Electric Rate Assistance (FERA) Program, and the Electric Program Investment Charge (EPIC). In each case, the Commission's recommendations aim to maximize value for participants while placing equity at the center.

BALANCE FAIRNESS AND REFORM IN NET ENERGY METERING

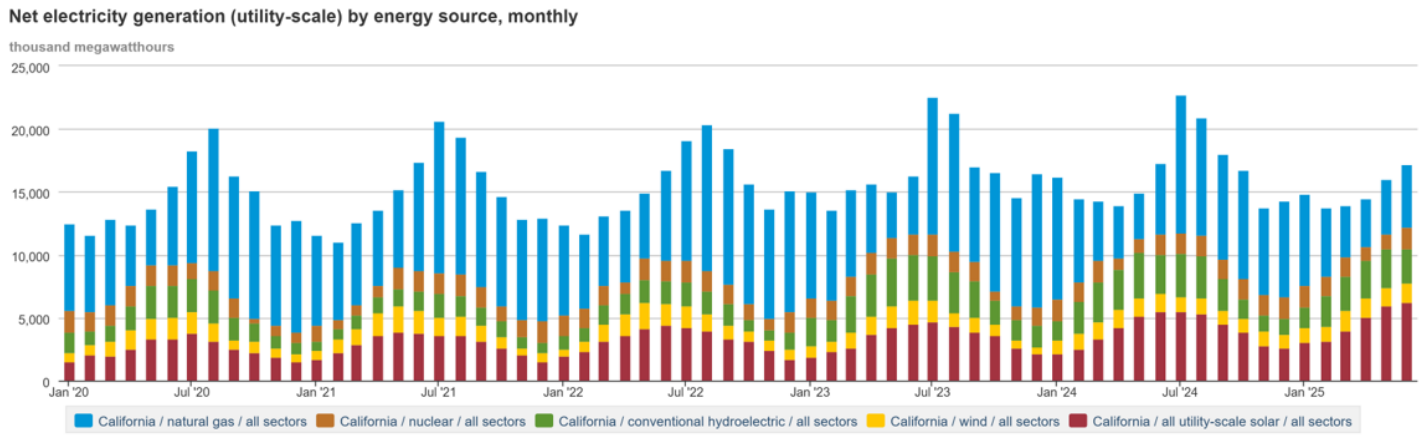
California leads the nation in installed solar capacity. As shown in Chart 11, solar generation fluctuates seasonally, but in recent summers utility-scale solar has supplied more electricity than any other source.[87] When the estimatedamount of energy generated by small-scale solar is added, solar provides more than half of the state's total energy during summer months. The continued growth of utility-scale and rooftop solar is critical not only for meeting California's ambitious clean energy goals, but also for improving reliability during peak demand periods and in regions prone to power shutoffs.

To encourage rooftop solar adoption, the state implemented its Net Energy Metering (NEM) incentive in 1996 and this was renewed in 2016 under slightly different terms as 'NEM 2.0'. In addition to powering their own homes, customers with rooftop solar who are enrolled in the NEM program are awarded credits for the excess electricity they supply to the grid. These credits could then be used to offset electricity costs incurred when solar panels were not generating power, for example, at night.

State and academic analyses have generally concluded that the NEM program—whose benefits are guaranteed for 20 years, ending completely in 2043—significantly contributes to high electricity rates for non-solar customers. This is for two reasons. First, NEM customers pay less into the system because they generate their own power. Second, these customers are compensated at the retail rate for the energy they produce.

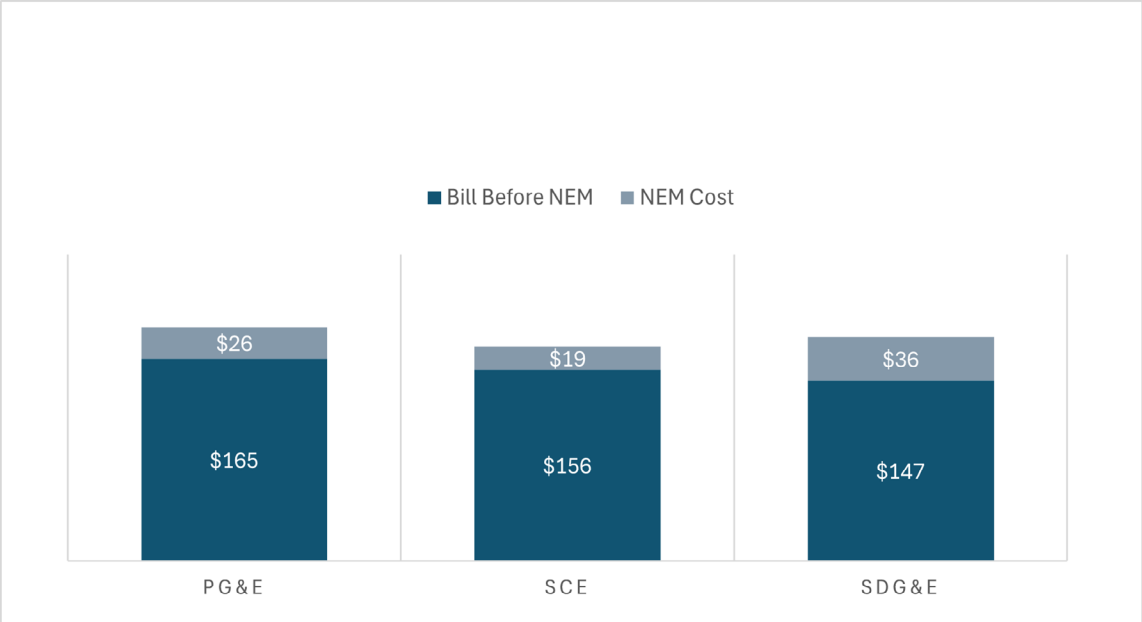
This means that NEM customers are not paying enough for fixed utility costs—e.g., new infrastructure, wildfire costs, public programs—but, as electricity rates rise due to their non-participation, non-solar owners have to compensate NEM customers at increasingly high levels. Chart 12 helps visualize the impact of this cost shift on customer bills in 2023.[88]

Chart 11: Generation Amount by Energy Source



Source: U.S. Energy Information Administration

Chart 12: Impact of the NEM Cost Shift on Average Bill



Source: California Public Utilities Commission

And NEM costs have continued to rise. The Public Advocates Office estimates that, in 2024 alone, NEM shifted approximately $8.5 billion in costs to non-solar customers, representing between 21 and 27 percent of their total bill. This total has been debated, however.[89] The CPUC states that funding the NEM 1.0 and 2.0 cost shift through non-ratepayer sources would reduce average rates by 15 percent.[90]

To help limit costs, California introduced the Net Billing Tariff (NBT), also known as NEM 3.0, beginning in April 2023. Under the NBT program, solar owners receive credit only for the wholesale cost of producing energy, typically cited as a 75 percent reduction compared to credits received under NEM 1.0 and 2.0.[91] And, more recently, the CPUC has suggested several additional mechanisms for reducing expenses associated with the NEM cost shift:[92]

- Fund NEM costs through non-ratepayer sources
- Reduce legacy periods
- Determine compensation based on interconnection date
- Add a charge to solar customers to offset shifted costs
- End legacy NEM benefits at sale of home

A recent review of these cost-saving solutions has raised concerns about their effectiveness and the unintended consequences of implementing them.[93] For example, ending a NEM contract when a home is sold represents a significant loss of value and could make a challenging housing market even more challenging for all involved.

There may also be legal obstacles to modifying NEM benefits after the fact. Indeed, even as the CPUC has proposed drastic reductions in previously agreed-upon Net Energy Metering benefits, the California Supreme Court recently ordered a lower court to reconsider whether it erred in allowing the reduction of solar payments by replacing NEM 2.0 with the NBT program.[94] Litigants argued that the court was overly deferential to the CPUC and failed to properly account for the public benefits of rooftop solar. As a result, policy around solar and Net Energy Metering remains in a state of flux.

The Commission recognizes that, while the Net Energy Metering program is a major driver of electricity costs for non-solar customers, home solar is good for grid stability and the environment.

It also acknowledges that home solar adoption is a major investment driven by a desire to pay less for electricity and to contribute to clean-energy generation.

Furthermore, solar adoption is not solely the domain of the privileged, but has become more equitable in recent years. While rooftop solar adopters remain a minority of the total population, trends suggest growing accessibility. The Lawrence Berkeley National Laboratory (LBL) has tracked these changes in its annual reports on solar demographics (Chart 13).[95]

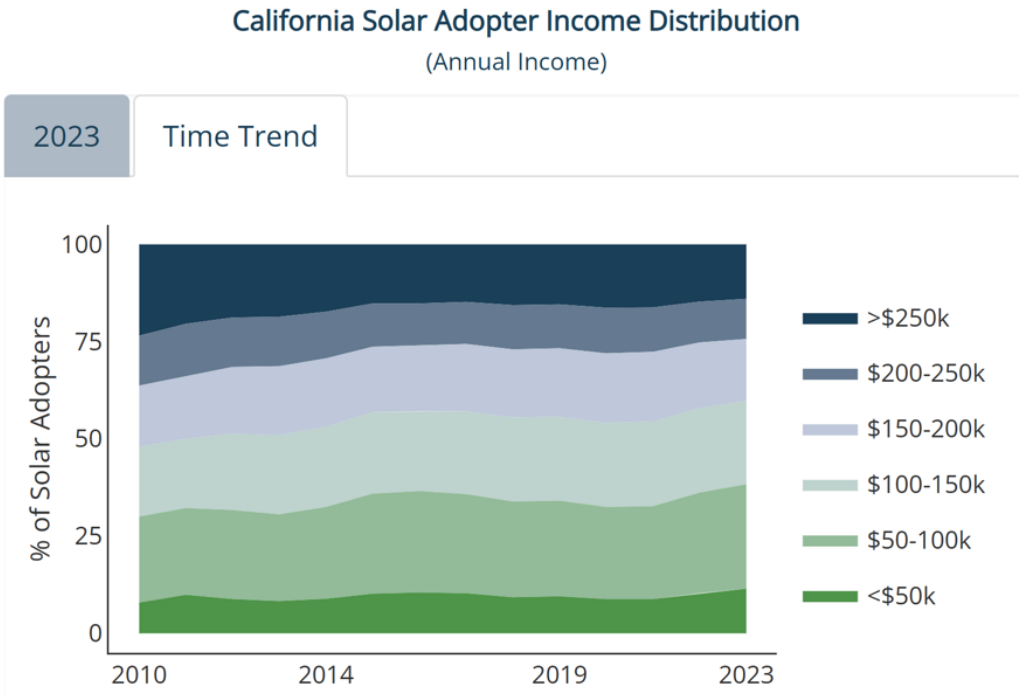
In 2023, California's median household income was $95,521, according to the U.S. Census Bureau.[96] LBL data indicates that households earning under $100,000 per year accounted for 40 percent of total solar installations, while the remaining 60 percent had incomes above this threshold. Among these, the largest group of adopters falls within the $50,000–$100,000 income range, suggesting that low-to-middle-income households are increasingly embracing solar.

It should also be noted that the transition to the Net Billing Tariff (NBT) has significantly impacted the solar industry, leading to a major decline in installations.[97] According to a California Solar and Storage Association report, solar installations dropped by approximately 66 percent from 2023 to 2024—and higher figures are cited elsewhere. The report also states that "at least" 17,000 high-quality California jobs in the solar industry were lost as a result of the shift to NBT.[98]

The Commission believes that California should seek to find a balance between reductions to NEM benefits and fairness to those who have invested in home solar systems. Thus, legacy NEM participants should retain their compensation structure until they have recovered their system installation costs plus a reasonable return on their investment.

This threshold should be defined based on the installed cost of the system—minus rebates and tax credits—and should account for both self-consumption savings and export earnings. Once a system reaches a certain threshold—such as 110 to 120 percent of net cost—export compensation

Chart 13: Income Trends of Home Solar Owners (2010-2023)



Source: Lawrence Berkeley National Laboratory

should change to a more sustainable rate design. This approach preserves solar customers' expectations of a return while ensuring that ratepayers are not excessively burdened.

RECOMMENDATION 7: To balance fairness for home solar investors with the need to reduce the cost shift due to Net Energy Metering, the state should limit NEM program duration and/or benefits while ensuring participants can recover their investments in a timely fashion.

MAKE THE CALIFORNIA CLIMATE CREDIT MORE EFFECTIVE

The California Air Resources Board (CARB)—a unit within the California Environmental Protection Agency—shapes energy policy through its regulation of airborne pollutants, particularly greenhouse gas emissions.[99] CARB has established a declining cap on total emissions from electricity providers and other "covered entities," compelling them to reduce their climate impact over time.[100]

To support compliance, CARB collects emissions data and operates the state's Cap-and-Trade auction—recently renamed Cap-and-Invest—which allows companies to buy and sell emissions allowances and offsets. Proceeds from the auction fund various environmental programs and are also returned directly to ratepayers through the California Climate Credit.

All residential customers of California's investor-owned utilities currently receive the state's Climate Credit twice a year. In 2025, depending on their provider, households will see between $56 and $81 credited to their bills in April and again in October, drawn from a total pool of $1.39 billion.[101]

In his executive order, Governor Newsom directed CARB and the CPUC to collaboratively identify ways to increase the effectiveness of the Climate Credit, "particularly for low-income Californians."[102] In response, the CPUC has calculated various scenarios for how this credit to be allocated and its impact on customer bills (Table 3).[103]

Of these scenarios, the Commission supports redirecting the Climate Credit to all customers who receive low-income subsidies and customers in hot climate zones provided they are not enrolled in a Net Energy Metering program.[104] It also recommends distributing this credit during summer months when bills are highest to provide maximum relief.[105]

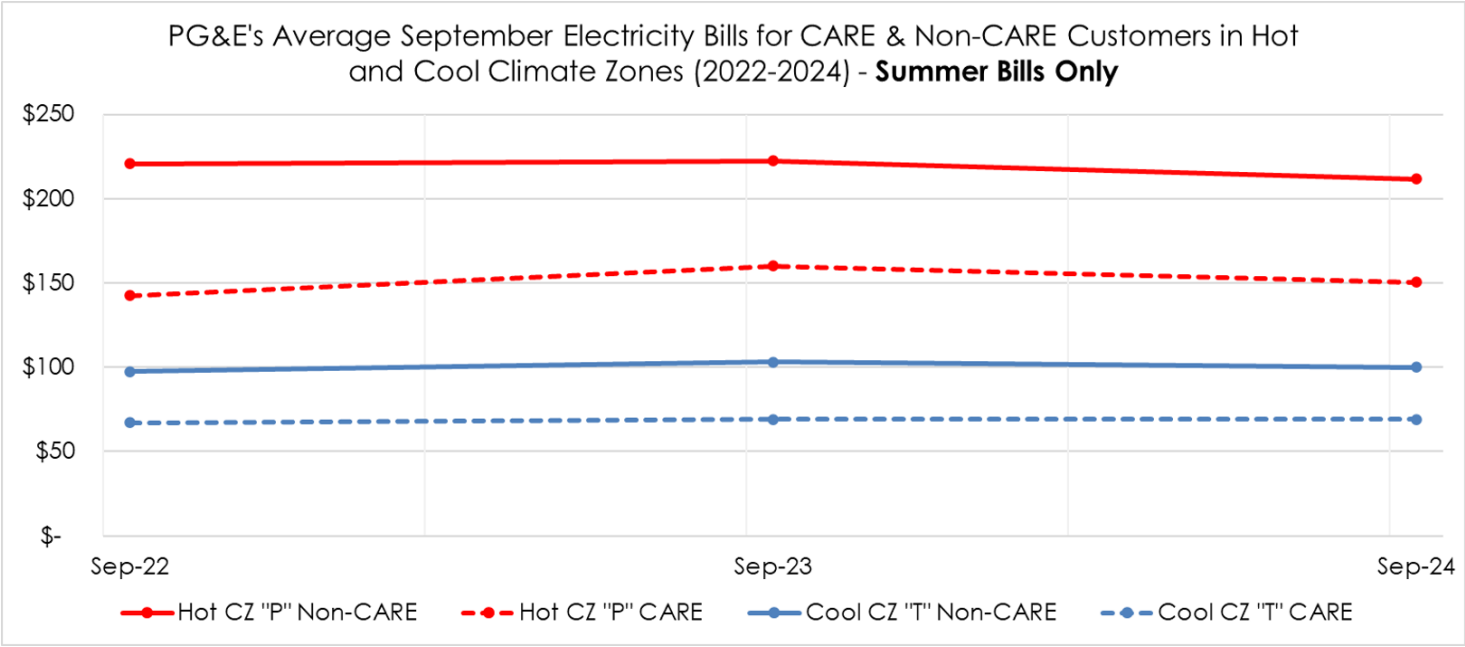
As Chart 14—created by the Public Advocates Office—illustrates, during summer months, electricity bills in these areas have historically been more than twice those in cooler zones.[106] This disparity is not the result of waste but of necessity. As climate change drives hotter summers, households must rely more heavily on air conditioning, driving up bills.

Table 3: Climate Credit Reallocation Scenarios

Allocation	Total Residential Climate Credit, 2025	Estimated Total Benefiting Accounts	Resulting Bill Credit
All Customer Accounts (status quo)	$1.39 Billion	11.6 million	$120
CARE and FERA Customer Accounts only	$1.39 Billion	3.1 million	$454
Non-NEM 1.0, 2.0, or NBT Customer Accounts	$1.39 Billion	9.9 million	$142
Non-NEM/NBT CARE, FERA, and Customers in Hottest Climate Zones	—	—	$445

Source: California Public Utilities Commission

Chart 14: Hot and Cool Climate Zone Summer Bill Amounts



Source: Public Advocates Office

This is a matter of equity. In many—though not all—instances, the hottest parts of the state correspond with lower-income populations. This is evident when the map detailing PG&E's "baseline territories" are compared with the income maps for California's counties.[107]

A utility's baseline allowance determines the amount of electricity a household in a given location can consume at a relatively low rate based on average usage in that area. Once the baseline is exceeded, the rate goes up.

High summer baseline allowances are provided in the state's hottest regions—for example, Central Valley counties stretching from Redding to Bakersfield in PG&E's service area—to account for the substantial energy required for air conditioning. These territories, located up and down California's Central Valley, also correspond with some of the lowest median household incomes in the state (see Figs. 1 and 2).[108] Research has shown that households in lower-income census tracts tend to resist using energy for heating and cooling as compared to wealthier households.

This suggests that low-income houses are putting their comfort and potentially their health at risk in seeking to save money on electricity.[109]

The Commission recognizes that poverty is not confined to hot climate zones and that middle- and high-income households are also present in hot regions of the state. Even so, directing the Climate Credit to these zones will provide a climate-focused benefit that is broad in scope yet still weighted toward lower-income populations, who are disproportionately represented in hotter areas. This approach offers the most effective way to deliver meaningful bill support through a credit designed for climate purposes.

RECOMMENDATION 8: Direct California Climate Credits to all low-income subsidy customers and all customers regardless of income in hot climate zones who do not participate in Net Energy Metering. These credits should be distributed during summer months when usage is high. Doing so will increase the efficacy of the credit and, in particular, will provide bill relief in economically burdened regions of the state.

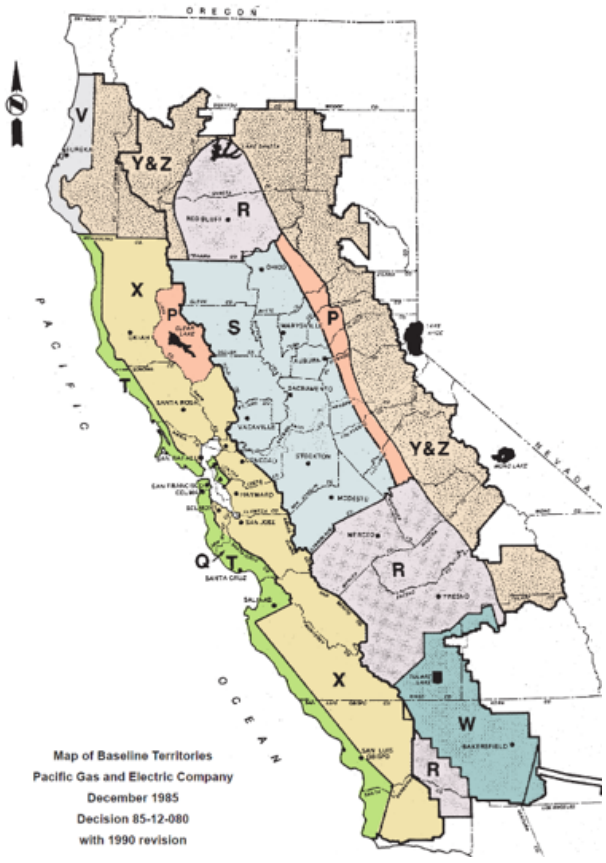
INCREASE LOW-MIDDLE INCOME SUPPORT

California utilities administer two ratepayer-funded subsidies that provide energy bill assistance to low-income households: the California Alternate Rates for Energy (CARE) and the Family Electric Rate Assistance (FERA) programs.[110] Eligibility is based on household size and overall income. CARE provides a 30 to 35 percent discount on electricity bills to households making up to 200 percent of the federal poverty level. FERA provides an 18 percent discount on electricity bills to households making between 200 and 250 percent of the federal poverty level. CARE is much larger than FERA, disbursing over $2.23 billion in subsidies in 2023 compared to just under $34 million for FERA.[111]

The CPUC has acknowledged that energy costs will remain high for the "foreseeable future" and has recommended using "stable non-ratepayer funds to increase the CARE and FERA discount."[112] This could take the form of a larger discount for current participants, as the CPUC suggests, or an expansion of eligibility to include households with slightly higher incomes.

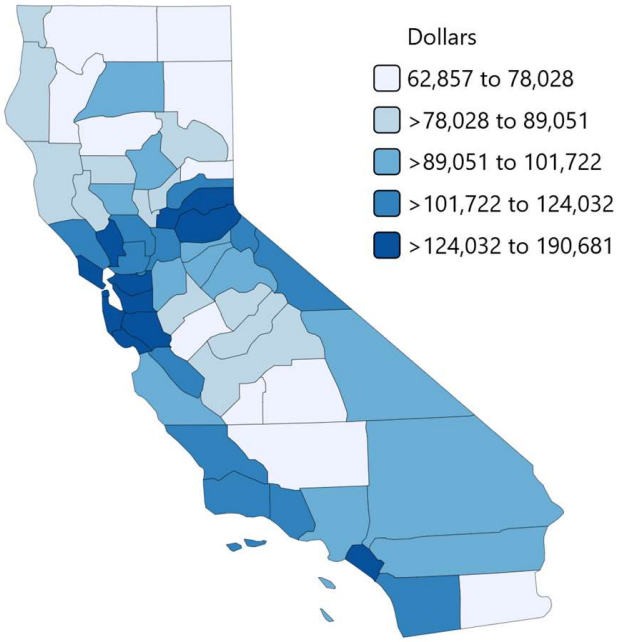
In an April 2025 filing, the three large IOUs plus Southern California Gas conducted a county-by-county comparison of the number of CARE-enrolled households relative to the estimated number of CARE-eligible households and found that the enrollment rate was between 97 and 110 percent. By contrast, FERA enrollments were between 12 and 16 percent of eligible households, falling far short of enrollment targets.[113] And, indeed, in its July 2025 filing, Southern California Edison reported that just 15 percent of its budgeted subsidy dollars had been spent—around $7.7 million out of a total pool of $51.5 million.

Figure 1: PG&E Baseline Territories



Source: Pacific Gas & Electric

Figure 2: Median Household Income by County



Source: National Institute on Minority Health and Health Disparities

The state's efforts to support low-middle income utility customers through the FERA program are laudable. However, the program is not achieving its goal of mitigating energy bills for low-income households that do not qualify for CARE. Some progress has been made—for example, Senate Bill 1130 (Bradford—2024) expands FERA eligibility to one- and two-person households and requires investor-owned utilities to strengthen enrollment and reporting efforts. Still, structural challenges hinder participation. The narrow income eligibility band (200–250 percent of the federal poverty level) makes it difficult for customers to know if they qualify, especially given income fluctuations. As a result, many mis-enroll in CARE or fail to enroll altogether.[114]

Even as utilities continue efforts to boost FERA enrollment, the Commission recommends that policymakers pursue more aggressive and creative strategies to improve electricity affordability for households that do not qualify for CARE yet still struggle to pay their energy bills. Such actions could take a variety of forms:

- Raise FERA's upper limit to 300 percent of the Federal Poverty Level
- Merge CARE and FERA into a single program with graduated discounts
- Automate enrollment or outreach through tax filings
- Use unspent FERA dollars to establish bill assistance grants distributed through community-based organizations.

The Commission could also envision repurposing unspent FERA subsidy funding to reduce electricity costs for public-serving institutions. There is precedent for this approach: the CPUC's California Teleconnect Fund "provides a 50% discount on advanced communication services (including internet and broadband) to qualifying schools, libraries, annexes, community colleges, government-owned hospitals and health clinics, and community-based organizations".[115] While it may not be fiscally prudent to offer the same level of discount on electricity bills to all such institutions, the underlying idea is sound—using budgeted but unspent funds to ease electricity costs for organizations that directly serve the public. As FERA enrollment levels shift, the scale of these grants could be adjusted accordingly.

RECOMMENDATION 9: California should expand assistance for households above the CARE income threshold who still struggle with high energy costs. This could be achieved by raising FERA's eligibility ceiling, merging CARE and FERA into a graduated program, or automating enrollment through tax and benefits systems. Policymakers might also consider repurposing unspent FERA funds to provide bill relief through community-based organizations or public-serving institutions that support low- and middle-income Californians.

SIMPLIFY ACCESS TO ENERGY GRANTS

The California Energy Commission administers numerous programs supporting its energy goals. One of these is the ratepayer-funded Electric Program Investment Charge (EPIC). In its response to the Governor's executive order, the CEC describes the EPIC program as "the leading state energy research and development program in the United States".[116] The CEC, along with the three major IOUs, administers about $148 million in EPIC funding per year to support three "investment areas": applied research and development, technology demonstration and deployment, and market facilitation. The CPUC has approved funding for the EPIC program through 2030.

Within the larger context of ratepayer-funded expenses, costs associated with the EPIC program are fairly small—about 1 cent per resident per day as reported by the CEC. And the benefits of the program appear significant, incubating promising new technologies in California IOU territories.[117]

For example, highlighted EPIC projects for 2023 included a fully renewable microgrid in Humboldt County to provide backup power for community infrastructure; virtual power plant programs in Richmond and Lancaster; and a dynamic energy use project by the Lawrence Berkeley Laboratory.

The benefits of these programs are, moreover, not limited to new technologies—new energy regulatory policy is developed simultaneously, helping pave the way for broader societal adoption.

Recipients of EPIC funding value the program but believe it could be improved. They point to delays between identifying problems and getting projects funded and to market. They also note that the EPIC program managers should have more flexibility, including discretion to allocate a portion of funds outside the competitive bidding process and authority to provide small amounts of initial funding to launch projects quickly, as was possible under the earlier Public Interest Energy Research (PIER) program.

Cost-sharing requirements have also grown increasingly onerous, with a large proportion expected from private industry, which discourages smaller firms and nonprofits. Finally, the heavy reliance on full RFPs makes participation expensive and difficult. A two-stage process that begins with brief concept proposals could reduce upfront costs and open the program to a broader set of applicants.

RECOMMENDATION 10: Streamline the application and funding processes for EPIC and similar clean energy grant programs to reduce administrative burden and accelerate the distribution of funds. These improvements will enhance program effectiveness and support timely project implementation.

Data Centers and Electricity Policy

California's Silicon Valley and university systems have made the state a global leader in artificial intelligence research and development.[118] Policymakers—recognizing the potential benefits to the state's economy and the welfare of its residents—have worked to support artificial intelligence in the tech, education, and government sectors, while also proposing progressive regulations to protect against AI-related harms.[119]

AI applications have already had significant impact in sectors such as medicine, education, and government, with more adoption on the horizon.[120] McKinsey estimates that artificial intelligence could contribute $4.4 trillion in long-term productivity gains.[121] California has already put the technology to work, for example, integrating AI into customer service and wildfire-fighting operations.[122] In late 2024, the Little Hoover Commission released two reports on AI use in government operations and social services, and remains enthusiastic about its expanded role in the public sector.[123]

However, the proliferation of new data centers—designed to support artificial intelligence applications—has become a major energy policy concern in California and beyond.[124] Built at a rapid pace to meet the fast-growing compute requirements of AI, these facilities will offer opportunities along with significant challenges for the state's already costly electricity system, which must absorb their immense power requirements.[125] As California considers regulatory policy for new data centers, the Commission has flagged the following questions as especially important:

- **Electricity impacts:** How will AI data centers affect electricity rates in California? Can the presence of data centers lower electricity costs for ratepayers?
- **Water impacts:** How much water will AI data centers use, and what will this mean for costs passed on to ratepayers?
- **Stranded asset risks:** What are the risks of stranded assets with AI data centers, and how can they be reduced? For example, what happens if technology lowers workloads, or if a company shuts down or moves operations out of state or overseas?
- **Rate design options:** What are the pros and cons of creating separate electricity rates for AI data centers, and how have other states and countries approached this?
- **Capital costs and siting:** What will it cost to build new AI data centers, where will they be located, and which utilities will develop them?

Utility revenues generated by data centers could help pay for expensive electricity-related costs. But these centers also come with extraordinary energy demands that will necessitate costly new infrastructure and could reduce grid reliability. If these costs are not allocated appropriately, ratepayers could face higher bills. With electricity demand from data centers projected to rise sharply, California must balance economic benefits against risks to affordability, reliability, and the state's clean energy goals.

Over the next decade, data centers are projected to drive dramatic increases in electricity use. A 2024 Lawrence Berkeley Lab study forecasts that, by 2028, data centers could represent between 6.7 percent and 12.0 percent of all U.S. electricity consumption (Chart 15).[126] At the regional level, the Western Electricity Coordinating Council predicts a 20.4 percent growth in demand over the next decade, with data centers and crypto-currency mining cited as primary drivers. In response, regulators are planning for an unprecedented expansion of generation resources.[127]

Chart 15: Past and Future Data Center Electricity Consumption

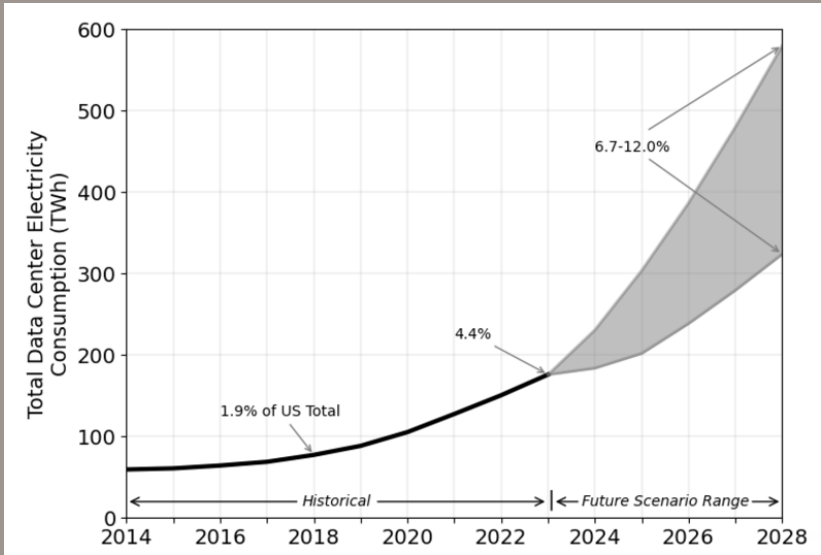


Figure ES-1. Total U.S. data center electricity use from 2014 through 2028.

Source: Lawrence Berkeley National Laboratory

RELIABILITY AND INFRASTRUCTURE MISMATCH

Additions of new data centers could threaten California's delicate energy balance. Regulators must already account for both daily and seasonal peaks while managing rising temperatures and wildfire-related risks.[128] Data centers can come online relatively quickly, whereas generation and grid projects typically require years of planning and construction. This discrepancy heightens concerns about energy availability to support these projects as well as residents, potentially leading to interruptions in the power supply.[129]

LOCAL ENVIRONMENTAL AND INFRASTRUCTURE IMPACTS

Data centers are drawn to areas with abundant power, water, space, and low electricity rates.[130] In California, this has concentrated development in Santa Clara and Los Angeles. These facilities are resource intensive. In Santa Clara, data centers account for the majority of local electricity use and consume vast amounts of water.[131] They also rely on backup generators, which, together with server operations, can create noise, pollution, and potential health risks.[132]

While California data centers are largely clustered in Santa Clara and Los Angeles—both served by municipal utilities that offer power at significantly cheaper rates—Pacific Gas & Electric has received a large number of requests for service to new data centers. According to reporting by Melody Petersen, PG&E claims the data center boom will benefit the utility, industry, and customers.[133] It regards the grid as largely underutilized and anticipates monthly customer bill savings of between one and two percent per additional 1000 MW of load. That said, billions of dollars of new infrastructure will be required, and PG&E is already behind on connecting new customers.

LOCAL ECONOMIC EFFECTS

For communities, data centers present a mixed picture. They provide substantial tax revenue while creating little additional traffic, which can appeal to smaller jurisdictions seeking income without population growth.[134] Yet they create relatively few jobs once construction is complete. And municipally owned utilities that host these centers often have power mixes that are more polluting than those of investor-owned utilities or community choice aggregators.[135] The need to provide power to data centers may likewise compel investor-owned utilities to draw on non-renewable energy sources.

RATES, FIXED COSTS, AND STRANDED ASSETS

The effect of data centers on electricity rates remains uncertain.[136] New facilities require transmission lines, substations, and interconnections, all of which add to the rate base. While additional demand might help spread costs, the benefits are not guaranteed. Rate design is critical: if data centers help mitigate fixed costs relating to wildfire or the Net Energy Metering, they could provide a valuable funding source and potentially lower rates for all. But if they are granted discounted pricing, the burden will fall on other customers.[137]

Energy demand projections for data centers remain highly volatile. The Western Electricity Coordinating Council's forecast doubled between 2022 and 2024—the period when tools like ChatGPT drove a frenzy of interest in developing and deploying AI. If data centers are overbuilt, relocate, or if usage declines, remaining customers could be saddled with stranded costs for infrastructure.[138] Technological advances also complicate forecasts: some newer AI models like DeepSeek require less compute, raising the possibility that today's infrastructure investments could become stranded assets—that is, obsolete long-term funding obligations.[139]

MORE STUDY NEEDED

California must proceed cautiously. Data centers can provide revenue, lower electricity rates, and support innovation. But, if not properly regulated, they could pose risks to reliability, energy and water resources, and could raise electricity costs. Given the long-term commitments involved in energy planning, policymakers should pursue opportunities while guarding against the potential for stranded costs, increased ratepayer burdens, and threats to California's clean energy and sustainability goals.

For this reason, the Little Hoover Commission recently agreed to conduct a separate study on AI data centers and energy and environmental policy. It will incorporate perspectives from the technology, academic, environmental, energy, and public sectors. The Commission's report and recommendations, intended to help guide policymakers, are expected to appear in 2026.

The Cost of Fighting Climate Change

Through the passage of SB 100 (De León, 2018), California committed to supplying 60 percent of its retail electricity sales from renewable sources by 2030 and 100 percent from renewable or other zero-carbon resources by 2045.[140] This electricity-sector target complements AB 1279 (Muratsuchi, 2022), which requires statewide greenhouse gas emissions to be reduced at least 85 percent below 1990 levels by 2045 and mandates that any remaining emissions be balanced with removals to achieve overall carbon neutrality.[141]

California's path toward meeting its emissions reduction goals is outlined in the California Air Resources Board's *2022 Scoping Plan for Achieving Carbon Neutrality*. The plan outlines a multi-pronged strategy that includes accelerating electrification across all sectors, powering the state with clean, renewable energy, and offsetting remaining emissions through natural solutions and emerging technologies.[142]

Achieving electrification on the scale envisioned will require a fundamental shift in how Californians live and power their lives. It means replacing carbon-emitting power plants, industrial processes, gas appliances, and gasoline vehicles. As demand rises from electrification—for example, charging cars instead of fueling them—the grid will need to expand dramatically with new clean power plants, transmission lines, substations, and related infrastructure.

The *2021 SB 100 Joint Agency Report* states that, to achieve the goals of SB 100, California must add 145 gigawatts of utility-scale generation capacity—more or less tripling its current capacity of 87.8 gigawatts.[143] A 2024 Stanford study found that California will need to expand grid capacity by 1.5 to 6 times its current size—equivalent to adding 4 to 15 times more capacity than has been built since 2000.[144]

This transition will be expensive in two key ways. First, upgrading the grid to meet rising demand will be a major cost passed on to customers. For investor-owned utilities, those costs will also include profits and interest owed to investors and lenders. Second, electrifying homes, businesses, and factories will carry high upfront costs for consumers, such as purchasing heat pumps, adopting new power sources for industry, or redesigning processes to be less carbon intensive—all against the backdrop of California's already high electricity rates.

Cost control will be critical. The *2021 SB 100 Report* estimates that, under its preferred scenario, achieving these goals would cost an additional $4.5 billion per year beyond the added costs of meeting the 2030 60 percent RPS requirement.[145] This translates to only a modest increase in rates per kilowatt hour. Although beyond the strict scope of this report's focus on current electricity rates, this issue deserves to be closely monitored by state policymakers, especially given the state's history of rapidly rising rates.

Appendix A: California Energy Agencies[146]

	California Public Utilities Commission (CPUC)	Public Advocates Office (PAO)	California Energy Commission (CEC)
Mission	Regulates private utilities to ensure safe, reliable, and affordable services; sets rates; implements programs relating to clean energy and affordability.	Advocates for the lowest reasonable utility rates for residential and small business customers while ensuring safety and reliability.	Develops energy policy, sets efficiency standards, permits power plants, and supports clean energy and climate goals through planning and research.
Year Established	1911 (as Railroad Commission); renamed in 1946	1984; became independent in 1996	1974
Budget & Funding (2025–26)	$1.91 billion; primarily from special funds	$58 million; primarily special funds	$1.126 billion; special funds, federal funding
Parent Agency	Independent Commission	Independent Office within CPUC	California Natural Resources Agency
Staffing Levels	1,566	185	787
Regulatory or Advisory Role	Regulatory	Advisory; party in CPUC proceedings	Advisory with regulatory authority over power plant siting and setting energy efficiency standards
Leadership & Appointments	5 commissioners appointed by the Governor and confirmed by the Senate for staggered 6-year terms	Independent office within CPUC with its own director and staff	5 commissioners appointed by the Governor and confirmed by the Senate for staggered 5-year terms
Oversight Authority / Jurisdiction	Oversees IOUs; registers CCAs	Participates in CPUC proceedings	Oversees some reporting compliance by publicly-owned utilities; supports energy planning for all sectors
Legal Duties / Mandates	Approves utility rates and various planning documents; monitors ratepayer-funded programs; ensures grid safety and reliability	Advocates on behalf of ratepayer interests	Leads long-term energy planning; sets standards; oversees facility permitting and program implementation; administers grants
Flagship Reports	Annual Report; AB 67 (Energy Cost); SB 695 (Cost Limiting); Padilla Report (RPS)	Annual Report; policy papers and filings in CPUC dockets	Integrated Energy Policy Report (IEPR); numerous reports relating to climate and energy.

Appendix B: Types of Energy Providers[147]

	Investor-Owned Utilities (IOUs)	Publicly Owned Utilities (POUs)	Community Choice Aggregators (CCAs)
Ownership & Governance	Privately owned; governed by shareholders and corporate boards.	Publicly owned; governed by elected or appointed boards or commissions.	Publicly owned; governed by local city/county boards.
Regulatory Oversight	"Natural" monopoly regulated by CPUC to ensure fair rates and reliability.	Regulatory adherence overseen by CEC; local control over rates and policies.	Regulatory adherence overseen by CPUC. Negotiates own rates to be as competitive as possible with IOUs.
Profit Structure	For-profit, earning returns for shareholders.	Not-for-profit; revenue is reinvested in infrastructure and rate stabilization.	Not-for-profit; surplus reinvested in local energy programs or rate stabilization.
Service Area	Large service areas covering multiple cities and counties.	Defined service areas, e.g. cities, rural districts.	Typically operate within city or county boundaries.
Rate Structure	Rates set by CPUC; adjusted based on costs and profits.	Sets own rates; focus on affordability.	Negotiates own rates; designed to be competitive with IOUs while increasing renewable content.
Energy Procurement	Procure power through contracts and some owned generation.	Both own and procure power, often emphasizing local renewable projects.	Primarily purchase power through contracts from renewable sources.
Financial Priorities	Maximizing shareholder value while balancing regulations and policy.	Prioritize competitive pricing and, depending on policy, clean energy.	Prioritize investment in clean energy projects and competitive pricing.
Accountability	Accountable to investors and regulatory agencies (CPUC, FERC).	Accountable to local oversight as well as state regulatory agency.	Accountable to local oversight, regulatory agency, and residents; customers can revert to primary utility.
Renewable Energy Approach	Mandated to meet state renewable goals.	Can be aggressive in use of renewables depending on local policy goals.	Typically exceed state renewable mandates.

Appendix C: How to Move Costs Off Customer Bills[148]

As an example of a criteria-based method for evaluating opportunities for shifting costs off ratepayer bills, the following score-based method could be used. Each cost would receive a 0–2 score based on each of the following criteria, with higher scores favoring moving costs off customer bills. The sum out of a total of 20 is used to identify the default funding source (see scoring/funding guide below):

SCORING RUBRIC (SCORE EACH 0-2)

1. Who benefits?
0 = Mainly private bill payers.
1 = Benefits are mixed (some private, some broader public).
2 = Broad, statewide, or general public benefit.

2. What causes the cost?
0 = Directly caused by electricity use or grid connection.
2 = Caused by factors outside electricity use (e.g., public policy goals, external events).

3. Impact on fairness
0 = Moving off bills is regressive (hurts low-income more).
2 = Moving off bills would clearly make costs more progressive (fairer).

4. Impact on greenhouse gas emissions
0 = No significant change in emissions
2 = Clear, measurable greenhouse gas reductions per dollar (eligible for GGRF).

5. Effect on energy-use incentives
0 = Moving off bills would weaken helpful price signals (e.g., conservation, shifting usage away from peak hours).
2 = Moving off bills would strengthen helpful price signals (e.g., making electrification or efficiency more attractive).

6. Budget stability risk
0 = Needs steady, multi-year funding certainty.
2 = Can handle normal ups and downs in budget cycles.

7. Ease of administration
0 = Expensive or difficult to move, track, or report
2 = Easy to shift using existing systems and processes.

8. Legal or constitutional constraints
0 = Likely to face legal or constitutional barriers.
2 = Clearly allowed under existing law.

9. Time frame of cost
0 = Ongoing operations and maintenance.
2 = One-time, finite, or legacy costs.

10. How the program works best
0 = The program only works well if charges stay on the bill (customers need to see the cost in their bill to respond).
2 = The program would work better as a separate, budget-funded program—especially if it can be targeted to specific groups (e.g., low-income assistance).

SAMPLE SCORING AND FUNDING GUIDE (OUT OF 20 TOTAL)

- 15–20 with high greenhouse gas score - Greenhouse Gas Reduction Fund
- 15–20 with high beneficiary/equity score but low greenhouse gas score - General Fund
- ≥12 with finite horizon - Securitization/Federal Funding
- <12 or high causation/incentive risk - Keep on bills (but optimize rate design)

Notes

1. Based on the average residential, commercial, and industrial rate as reported in the U.S. Energy Information Administration (U.S. EIA), Electricity Data Browser (report generated Aug. 27, 2025). Electricity costs related to transportation are not taken into account. These customer classes do not correspond exactly to those used by California's investor-owned utilities.

2. Figures in Table 1 generated using the U.S. EIA, Data Dashboard: California. Accessed Aug. 7, 2025.

3. U.S. EIA, "Retail Electricity Prices Closely Tracked Inflation Over the Last 10 Years" (Sep. 11, 2024).

4. Chart 1 from Public Advocates Office, *Q1 2025 Electric Rates Report* (May 20, 2025), p. 9.

5. U.S. EIA, "Residential Electric Bills in Hawaii and Connecticut are Twice Those in New Mexico, Utah" (May 12, 2025). Cf. A. Durrani, "Monthly Utility Costs in the U.S. By State", *Forbes Home* (Jul. 26, 2024). This study drew on information provided by the Bureau of Labor Statistics, Energy Information Agency, and the Energy Department.

6. Public Advocates Office, *Q1 2025 Electric Rates Report* (May 20, 2025), p. 4.

7. See, for example, SB 598 (Hueso, 2017), which outlines the magnitude of the problem and the groups impacted, and directs the CPUC to take several corrective measures.

8. M. Baldassare, D. Bonner, L. Mora, and D. Thomas, *PPIC Statewide Survey: Californians and Their Economic Well-Being*, Public Policy Institute of California (Dec. 2024).

9. Cf. T. Thorman, P. Malagon, and P. Cha, "Low-Income Households Struggle with the Cost of Electricity Bills", Public Policy Institute of California (Aug. 12, 2025).

10. M. Baldassare, D. Bonner, L. Mora, and D. Thomas, *PPIC Statewide Survey: Californians and Their Government*, Public Policy Institute of California (Jun. 2025).

11. M. Baldassare and T. Cantil-Sakauye, *Californians and the Energy Transition*, Public Policy Institute of California (Aug. 2025).

12. R. Sabalow and S. Kamal, "California Democrats Vowed to Tackle Affordability—But the Agenda Isn't Clear", *CalMatters* (Feb. 27, 2025). The number of bills mentioning "electricity" has markedly increased over the past decade: 145 (2015-16), 145 (2017-18), 190 (2019-20), 176 (2021-22), 207 (2023-24), 132 (2025 only, i.e., half session).

13. Gov. Gavin Newsom, Executive Order N-5-24 (Oct. 30, 2024).

14. For a more detailed but still accessible summary of costs charged to customers, see B. Sieren-Smith et al., *2024 Senate Bill 695 Report*, California Public Utilities Commission (July 2024), pp. 15-18.

15. Chart 2 is from the California Energy Commission "California Energy Consumption" dashboard. Charts 3 and 4 are from the California Public Utilities Commission, "Historical Electric Cost Data" website.

16. California Public Utilities Commission, *CPUC Response to Executive Order N-5-24* (Feb. 18, 2025), p. 9.

17. Relatively modest rate increases in the 2000s and 2010s have been attributed to various causes: flat demand, meeting the requirements of the then-nascent Renewable Portfolio Standard, and the closure of the San Onofre Nuclear Generating Station in 2013. E. McGhee, "A Closer Look at California's Surging Electricity Rates", Public Policy Institute of California (Apr. 1, 2025). J. Clemente, "Hey EPA: 'The California Model' Doesn't Work, and We'll Need More Electricity", *Forbes* (Oct. 27, 2014). L. Davis and C. Hausman, "Market Impacts of Nuclear Power

Plant Closure", *American Economic Journal: Applied Economics* 8.2 (1016): 92-122.

18. Chart 5 is from B. Sieren-Smith et al., *2024 Senate Bill 695 Report* (July 2024), p. 8. It does not include estimated generation costs charged by community choice aggregators. With this addition, the total revenue requirement for 2024 is approximately $54 billion. Analysis is complicated by delays in PG&E's 2023 General Rate Case, reflected in the inflated 2024 distribution figures.

19. California Public Utilities Commission, *CPUC Response to Executive Order N-5-24* (Feb. 18, 2025), p. 14. CARE/FERA costs as a percentage of a total average bill can be found on p. 31.

20. See the CAL FIRE statistics website for lists of the top 20 fires in the various categories. For a brief, interesting overview of the wildland urban interface and fire, see the U.S. Fire Administration "What is the WUI" website.

21. For a history of California utilities and wildfire, see K. Blunt, *California Burning: The Fall of Pacific Gas and Electric–and What It Means for America's Power Grid* (2022). For a more succinct account of how wildfires have prompted action by both the state and California's utilities, see California State Assembly, Utilities and Energy Committee Oversight Hearing, *Energy Affordability: Wildfire Spending* (Mar. 5, 2025), pp. 2-4.

22. I. Penn, "PG&E, Troubled California Utility, Emerges From Bankruptcy", *New York Times* (Jul. 1, 2020).

23. The Public Advocates Office has recommended reforming utility liability so that it is based on whether the utility exercised "prudent and responsible conduct," rather than the strict standards of inverse condemnation. Public Advocates Office, *Ratepayer Impacts of Strict Liability and Inverse Condemnation* (Apr. 7, 2023).

24. A. Lazo and S. Olmos, "As LA County Sues Edison Over Deadly Fire, Is the State's Wildfire Fund in Jeopardy?", *CalMatters* (Mar. 7, 2025).

25. Pacific Gas & Electric "Community Wildfire Safety Program" website.

26. The data and analysis that follows is from B. Sieren-Smith et al., *2024 Senate Bill 695 Report* (July 2024), p. 47-55. The PAO has estimated that wildfire costs now accounted for between 10 percent to 24 percent of total utility revenue requirements in 2024. Public Advocates Office, "2023-2024 Wildfire-Related Cost Increases of California's Three Major Investor-Owned Electric Utilities" (Jun. 14, 2024), p. 1.

27. B. Sieren-Smith et al., *2024 Senate Bill 695 Report* (July 2024), p. 51-52.

28. Pacific Gas & Electric, *PG&E Wildfire Mitigation Plan R0 2026-2028 Vol. 1* (Apr. 4, 2025), p. 23. Moreover, PG&E estimates the cost of undergrounding power lines at $3 million per mile and states that the average cost of installing covered conductors is around $1 million per mile (p. 129).

29. Chart 6 is from CPUC, *2023 California Electric and Gas Utility Costs Report: AB 67 Annual Report to the Governor and Legislature* (Apr. 2024), p. 15.

30. Chart 7 is from M. Ellis, *Rate of Return Equals Cost of Capital* (Jan. 2025), American Economic Liberties Project, p. 4 (Fig. 1).

31. S. Borenstein, "Rebalancing Rates for Electrification and Equity" *Energy Institute Blog, UC Berkeley* (May 1, 2023).

32. There are, in fact, many kinds of actions that result in cost shifts. These range from small improvements in home energy efficiency to the wholesale departure of communities from an IOU's customer base when they opt to form a municipal utility. For further discussion, see S. Borenstein, "Every Electricity Demand Reduction is a Cost Shift", *Energy Institute Blog, UC Berkeley* (Jul. 14, 2025).

33. The NEM cost shift will be discussed in detail later in this report. Important introductory articles include: S. Borenstein, "*California's Exploding Rooftop Solar Cost Shift*", *Energy Institute Blog, UC Berkeley* (Apr. 22, 2024);

R. McCann, B. Heavner, B. Del Chiaro, *Rooftop Solar Reduces Costs for All Ratepayers*, M.Cubed Consulting and the California Solar + Storage Association (Feb. 2025); S. Borenstein, "How To Fix the Solar Cost Shift", *Energy Institute Blog, UC Berkeley* (May 19, 2025).

34. Public Advocates Office, *2024 NEM Cost Shift Fact Sheet* (Aug. 22, 2024). See above for articles that debate the amount, or even the veracity, of the NEM cost shift.

35. The concept of "flattening the curve" was raised during LHC staff conversation with leadership from The Utility Reform Network (TURN).

36. This clause was stripped from the bill prior to passage. For a link to the original text, see SB 254 (Becker) sec. 739.14.

37. For an introduction to the fixed charge, see California Public Utilities Commission, *CPUC Decision Cuts Price of Electricity Under New Billing Structure and Accelerates California's Clean Energy Transition*, Energy Division Fact Sheet (May 9, 2024).

38. S. Borenstein, Severin and J. Bushnell, "Do Two Electricity Pricing Wrongs Make a Right? Cost Recovery, Externalities, and Efficiency", *American Economic Journal: Economic Policy* 14.4 (2022).

39. Cf. S. Borenstein, "Energy Hogs and Energy Angels: What Does Residential Electricity Use Really Tell Us about Profligate Consumption?", *American Economic Association Papers and Proceedings* 115 (May 2025): pp. 357-62.

40. For a discussion of these benefits, see the CPUC Fact Sheet cited above as well as S. Borenstein, M. Fowlie, and J. Sallee, *Paying for Electricity in California: How Residential Rate Design Impacts Equity and Electrification*, Next10 (Sep. 2022). This assumes that consumers engage in rational, long-term economic decision making. For an alternate view, see J. Sallee, "The Supply-Side Economics of Residential Electrification", *Energy Institute Blog, UC Berkeley* (Aug. 30, 2021).

41. CPUC, "Net Energy Metering and Net Billing" website. NEM 2.0 and NBT customers also pay a $94 to $145 one-time interconnection fee.

42. S. Borenstein, "Reality Checking California's Income-Graduated Fixed Charge", *Haas Energy Institute Blog, UC Berkeley* (May 13, 2024).

43. See S. Borenstein, M. Fowlie, and J. Sallee, Paying for Electricity in California (Sep. 2022), pp. 28-30. Public Advocates Office, *Opening Brief of the Public Advocates Office Regarding Track A of the Order Instituting Rulemaking to Advance Demand Flexibility Through Electric Rates* [R.22-07-005] (Oct. 6, 2023), esp. p. 21.

44. Chart 8 is from California Public Utilities Commission, *CPUC Decision Cuts Price of Electricity Under New Billing Structure and Accelerates California's Clean Energy Transition*, Energy Division Fact Sheet (May 9, 2024), p. 2.

45. Joint IOUs, *Opening Comments of the Joint IOUs on Proposed Decision Addressing Assembly Bill 205 Requirements for Electric Utilities* [R.22-07-005], pp. 3-4. For a discussion of methodology, see Public Advocates Office, Opening Brief (Oct. 6, 2023), p. 20.

46. Table 2 is from Joint IOUs, *Joint Testimony of Southern California Edison Company, Pacific Gas and Electric Company, and San Diego Gas & Electric Company (the Joint IOUs) Describing Income-Graduated Fixed Charge Proposals* [R. 22-07-005] (May 3, 2023), p. 38.

47. S. Borenstein, "Reality Checking California's Income-Graduated Fixed Charge" (May 13, 2024).

48. Joint IOUs, *Opening Comments of the Joint IOUs on Proposed Decision Addressing Assembly Bill 2015 Requirements for Electric Utilities* [R.22-07-005] (Apr. 16, 2024), p. iii.

49. Gov. Gavin Newsom, Executive Order N-5-24 (Oct. 30, 2024), Secs. 1-2, 6. California Public Utilities Commission, *CPUC Response* (Feb. 18, 2025), pp. 16-17, 23, 31-34.

50. J. Sallee, "Equitable Decarbonization Requires Rate Reform," *Energy Institute Blog, UC Berkeley* (Sep. 26, 2022).

51. California has six investor-owned utilities. The three largest—Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric—serve the majority of Californians.

52. For a good introduction to this concept, see M. Ellis, *Rate of Return Equals Cost of Capital*, American Economic Liberties Project, pp. 2-3.

53. G. Bakke, *The Grid: The Fraying Wires Between Americans and Our Energy Future* (2016), pp. 41-43.

54. California Public Utilities Commission "Electrical Energy" website.

55. As example, here are links to PG&E 2023 GRC application and post-test year ratemaking proposal: *2023 General Rate Case Application of Pacific Gas and Electric Company (U 39 M)* [A.21-06-021] (Jun. 30, 2021). *Pacific Gas and Electric Company 2023 General Rate Case Exhibit (PG&E-11) Post Test-Year Ratemaking* [A.21-06-021] (Feb. 28, 2022).

56. L. Tesfai, "Understanding How the CPUC Processes a General Rate Case", California Public Utilities Commission (Jul. 29, 2025).

57. L. Tesfai, "Understanding How the CPUC Processes a General Rate Case" (Jul. 29, 2025).

58. Chart 9 was created using information from historical General Rate Case docket filings.

59. Southern California Gas Co. and SDG&E, *Joint Motion of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 M) to Amend the Assigned Commissioner's Scoping Memorandum and Ruling* [A.22-05-015/016] (Oct. 27, 2022).

60. Alaska Stat. § 42.05.175.

61. Ohio Public Utilities Commission "Rate Case Process" website.

62. For a month-by-month timeline of the process, see the New York State Department of Public Service "Major Rate Case Process Overview" website.

63. For a helpful overview including definitions of technical terms and some relevant recent figures, see the CPUC's "What is Cost of Capital (CoC)?" website.

64. CPUC, "CPUC Undergrounding Programs Description" website. Cf. PG&E's "Undergrounding & System Upgrades" website, which also contains a link to a helpful underground fact sheet. Also E. Randolph, *What is Driving Up Electric Rates in California? Options to Address the Issues*, Caliber (Jan. 2025), p. 10. For a critical economic analysis of undergrounding vs. its alternatives, see M. Fowlie, "Fighting Fires in the Power Sector", *Haas Energy Institute Blog, UC Berkeley* (Feb. 20, 2024).

65. Links to the utilities' Cost of Capital applications can be found on the CPUC "What is Cost of Capital (CoC)?" website.

66. M. Ellis, *Rate of Return* (Jan. 2025), p. 5. Ellis discusses the methods used—by utilities and others—to estimate ROE on pp. 5-8.

67. K. Dunkle Werner and S. Jarvis, "Rate of Return Regulation Revisited", *Energy Institute at Haas (UC Berkeley) Working Paper* [329 R] (Revised Mar. 2025), p. 15 (Fig. 1).

68. Dr. Villadsen's testimony and other documents filed in support of SCE's 2026 cost of capital application can be found here. Methods used include the Capital Asset Pricing Model, the Empirical Capital Asset Pricing Model, and the Discounted Cash Flow Model.

69. John P. Perkins III, *Application of Pacific Gas and Electric Company (U 39 M) for Test Year 2026 Cost of Capital* (Mar. 30, 2025).

70. K. Dunkle Werner and S. Jarvis, "Rate of Return" (Revised Mar. 2025). Cf. S. Borenstein, "What Does Capital Really Cost a Utility?", *Energy Institute Blog, UC Berkeley* (Oct. 3, 2022).

71. Dunkle Werner and Jarvis also note that while utilities are quick to request higher ROEs when capital costs rise, those profit levels don't drop when capital costs fall. This suggests that utility

commissions may be reluctant to lower profits, even when market conditions justify it.

72. M. Ellis, *Rate of Return* (Jan. 2025), pp. 10-15.

73. California Office of the State Treasurer, "Responsibilities and Functions" website.

74. M. Ellis, *Rate of Return Equals Cost of Capital* (Jan. 2025), American Economic Liberties Project, pp. 11-15.

75. Links to the 2023 PG&E General Rate Case docket and 2023-25 Wildfire mitigation plan can be found here and here, respectively.

76. Office of Accounting & Finance, New York State Department of Public Service, "Analysis of Rate Elements in a Regulatory Price Review" (Nov. 2011). D. Tietjen, "Tarriff Development: Review of the Basic Ratemaking Process", Public Utility Commission of Texas (n.d.).

77. Little Hoover Commission "Hearing on California Electricity Costs (Part 1)" (Feb. 27, 2025).

78. These figures are taken from CPUC final budget and staffing allotments found on the California Department of Finance "E-Budget" website.

79. POUs are overseen at the local level and not subject to the CPUC. That said, they must adhere to statewide clean energy mandates and, in this respect, are subject to oversight by the California Energy Commission and California Air Resources Board.

80. Chart 10 is from M. Fowlie, Meredith and D. Callaway, "Not All of California's Electricity Prices Are High", *Energy Institute Blog, UC Berkeley* (Jul. 10, 2023). Cf. S. Borenstein, "Challenges to Energy Affordability" (Feb. 27, 2025), Slide 10.

81. For a clear introduction to tax-exempt bonds, their benefits, and related policy, see A. Lautz, "The 2025 Tax Debate: Tax-Exempt Municipal Bonds", Bipartisan Policy Center (May 6, 2025).

82. S. Borenstein, *Challenges to Affordability in California's Energy Sector*, Little Hoover Commission Hearing on California Electricity Costs (Feb. 28, 2025), Slide 11.

83. Based on historical data found in the California Municipal Utilities Association *2025 Membership Directory* (Apr. 2025).

84. Cal. Const. art. XI, § 9; Cal. Pub. Util. Code § 11561-11562.

85. See the Our City Our Power "Document Library" website for numerous examples.

86. 47.25 percent of voters supported Proposition 16, 52.75 percent opposed it. For an overview with analysis, see the Legislative Analyst's Office, "New Two-Thirds Vote Requirement for Local Public Electricity Providers. Initiative Constitutional Amendment" (Feb. 17, 2010). For a clearheaded overview of municipalization and its pros and cons, see R. Lazenby, S. Ashford, and M. Chhabra, *Power Struggle: California's Electric Utility Ownership Dilemma*, Pritzker Environmental Law and Policy Brief [UCLA School of Law] (Jun. 2025).

87. Chart 11 was created using the U.S. Energy Information Administration, Electricity Data Dashboard (California) (generated Aug. 27, 2025). It is estimated that small-scale solar generated ~3,500 thousand megawatt hours of electricity in June 2025.

88. Chart 12 is from B. Sieren-Smith et al., 2024 Senate Bill 695 Report, California Public Utilities Commission (July 2024), p. 40.

89. Public Advocates Office (PAO), 2024 NEM Cost Shift Fact Sheet (Aug. 22, 2024) and California Public Utilities Commission, *CPUC Response to Executive Order N-5-24* (Feb. 18, 2021), p.12. See also S. Borenstein, "California's Exploding Rooftop Solar Cost Shift", *Haas Energy Institute Blog, UC Berkeley* (Apr. 22, 2024).

90. California Public Utilities Commission, *CPUC Response to Executive Order N-5-24* (Feb. 18, 2025), pp. 12, 31.

91. See the CPUC "Net Energy Metering and Net Billing" website for a detailed comparison of NEM 1.0, 2.0, and NBT. On the reduction in compensation and impact on the solar industry, see J. Cart, "What's Happened Since California Cut Home Solar Payments? Demand Has Plunged 80%", *CalMatters* (Jan. 26, 2024).

92. California Public Utilities Commission, *CPUC Response to Executive Order N-5-24* (Feb. 18, 2025), pp. 16-17.

93. S. Borenstein, "How To Fix the Solar Cost Shift", *Energy Institute Blog, UC Berkeley* (May 19, 2025).

94. M. Carollo, "California Supreme Court Hands Victory to Rooftop Solar Owners", *CalMatters* (Aug. 7, 2025).

95. S. Forrester et al., *Residential Solar-Adopter Income and Demographic Trends: 2024 Update*, Lawrence Berkeley National Laboratory (Dec. 2024). Chart 13 is from the Lawrence Berkeley Lab Energy Markets & Policy "Solar-Adopter Income Trends: Data Visualization Tool" website.

96. U.S. Census Bureau, California State Profile (accessed Aug. 26, 2025).

97. G. Barbose, *One Year In: Tracking the Impacts of NEM 3.0 on California's Residential Solar Market*, Lawrence Berkeley National Laboratory (May 2024). S. Borenstein, "Guess What Didn't Kill Rooftop Solar?", *Energy Institute Blog, UC Berkeley* (Jan. 27, 2025).

98. R. McCann, B. Heavner, B. Del Chiaro, *Rooftop Solar Reduces Costs for All Ratepayers*, M.Cubed Consulting and the California Solar + Storage Association (Feb. 2025), pp. 30-31.

99. CARB conducts research, data collection, monitoring, and program implementation in areas such as public health, zero-emission vehicles, and environmental justice. Finally, it produces the periodic Scoping Plan for Achieving Carbon Neutrality, which charts a statewide path toward meeting AB 32's greenhouse gas reduction targets and provides guidance on electricity generation, electrification, and clean transportation infrastructure. For links to the various Scoping Plan documents, see the CARB "AB 32 Climate Change Scoping Plan" website.

100. See the CARB "Cap-and-Trade Program: About" website, which contains a wealth of background and technical information about the program and the association auction.

101. PG&E customers received a $58.23 credit, SCE customers received $56.00, and SDG&E customers received $81.38. The same amounts will be credited again in October. Pacific Power's much smaller customer base receives approximately $250 twice annually. See the CPUC "California Climate Credit" website for more details.

102. Gov. Gavin Newsom, Executive Order N-5-24 (Oct. 30, 2024), sec. 4.

103. Table 3 is from California Public Utilities Commission, *CPUC Response* (Feb. 18, 2025), p. 20.

104. This recommendation is similar to the CredHBBTNoNEM scenario outlined in L. Smith, E. Macomber, M. Mastrandrea, M. Wara, "Improving Electricity Bill Affordability for Low-Income Customers Using the California Climate Credit", Climate & Energy Policy Program White Paper, Woods Institute for the Environment, Stanford University (forthcoming). Policymakers are already thinking along these lines. AB 1207 (Irwin), which extends California's Cap-and-Trade Program through 2045, also mandates that the Climate Credit be disbursed during the four highest billed months of the year (Sec. 13 (a)(3)). This bill was signed into law by Governor Newsom in September 2025. "Governor Newsom, Legislative Leaders Announce Major Deal to Save Money on Electric Bills, Stabilize Gas Market, Cut Pollution" [press release] (Sep. 10, 2025).

105. The "summer months" portion of this recommendation was adopted through the passage of AB 1207 (Irwin), which was signed into law on Sep. 19, 2025.

106. Chart 14 was graciously created by Public Advocates Office staff in response to a data request.

107. Figure 1 is from the PG&E "Baseline Allowances" website (map here). The highest baseline allowances belong to Territories P, R, S, and W.

108. The county-level income map (Fig. 2) was created using the data visualizer available at the National Institute on Minority Health and Health Disparities, "HD Pulse Data Portal" website (generated Aug. 25, 2025).

109. L. Smith, E. Macomber, M. Mastrandrea, M. Wara, "Improving Electricity Bill Affordability for Low-Income Customers Using the California Climate Credit", Climate & Energy Policy Program White Paper, Woods Institute for the Environment, Stanford University (forthcoming), pp. 5-6.

110. CPUC "CARE/FERA Program" website, which also provides a table of household-size-to-income thresholds for participating in either program.

111. CPUC, *2023 California Electric and Gas Utility Costs Report: AB 67 Annual Report to the Governor and Legislature* (Apr. 2024), pp. 56, 60.

112. California Public Utilities Commission, *CPUC Response* (Feb. 18, 2025), p. 17.

113. PG&E, Southern California Gas Co., SDG&E, and SCE, *Compliance Filing of Pacific Gas and Electric Company (U 39-M), Southern California Gas Company (U 904-G), San Diego Gas & Electric Company (U 902-M), and Southern California Edison Company (U 338-E) Regarding Annual Estimates of CARE Eligible Customers and Related Information* [A.19-11-003-7] (Apr. 14, 2025), Attachments B and C. On PG&E's FERA enrollments vs. targets, see Evergreen Economics, *FERA Study: An Assessment of Achievable Enrollment and Program Efforts* (Jun. 6, 2025), p. 1. See also Southern California Edison, *Monthly Report of Southern California Edison Company (U 338-E) on Low income Assistance Programs for July 2025* [A.19-11-003] (Aug. 21, 2025), p. 55.

114. Evergreen Economics, *FERA Study* (Jun. 6, 2025), pp. 2-3.

115. CPUC, "California Teleconnect Fund" website.

116. California Energy Commission, *California Energy Commission Response to Executive Order N-5-24* (Jan. 1, 2025) [published Feb. 18, 2025], p. 9. Funding amounts and investment target areas appear on the same page. For more information, see the CEC, "Electric Program Investment Charge Program – EPIC" website.

117. California Energy Commission, *California Energy Commission Response* (Jan. 1, 2025), p. 9. Projects described in this section are from California Energy Commission, *2023 EPIC Highlights* (Aug. 2024), p. 2.

118. This is clearly shown in Gov. Gavin Newsom's executive order on Generative AI: Cal. Exec. Order N-12-23 (Sep. 6, 2023).

119. For an overview of executive action in this space, see the state's "GenAI for California" website. A search for bills relating to "artificial intelligence" using the CalMatters Digital Democracy website gives a sense of the quantity and range of California AI legislation.

120. M. Bankhwal et al., *AI for Social Good: Improving Lives and Protecting the Planet*, McKinsey & Co. (May, 2024).

121. M. Chui et al., *The Economic Potential of Generative AI*, McKinsey & Co. (Jun. 2023), p. 9.

122. California Dept. of Tax and Fee Administration, "California Moving Forward with Generative Artificial Intelligence in State Call Center" [press release] (May 5, 2025). UC San Diego, "ALERTCalifornia and CAL FIRE's Fire Detection AI Program Named One of TIME's Best Inventions of 2023" [press release] (Oct. 24, 2023).

123. Little Hoover Commission, *Artificial intelligence and California State Government* [Report #284] (Dec. 2024) and *Artificial Intelligence, Food Insecurity, and California's Vulnerable Populations* [Report #285] (Dec. 2024).

124. For a survey of policy responses in California and other states, see K. Johnson, "Crackdown on Power-Guzzling Data Centers May Soon Come Online in California", *CalMatters* (Feb. 18, 2025).

125. T. Spencer and S. Singh, *Energy and AI*, International Energy Agency [World Energy Outlook Special Report] (Apr. 2025).

126. A. Shehabi, A. Newkirk, and S.J. Smith, *2024 United States Data Center Energy Usage Report*, Lawrence Berkeley National Laboratory (Dec. 20, 2024). Chart 15 is from p. 12 of this report.

127. Western Energy Coordinating Council, *Western Assessment of Resource Adequacy 2024* [n.d.]. Manufacturing is cited as a third driver of increased load. Page numbers are not provided in the report, which is entirely web based. On planned infrastructure growth, see also the California Energy Commission quarterly report cited below.

128. California Energy Commission, *Joint Agency Reliability Planning Assessment: SB 846 Third Quarterly Report 2025* (Aug. 2025), p. 12.

129. This point is emphasized in the Western Energy Coordinating Council report cited above. Cf. Z. Hale, "Experts See 'Mismatch' Between US Utility Planning Cycles and Data Center Builds", S&P Global (Jul. 17, 2024).

130. F. Barringer, *Thirsty for Water and Power, AI-Crunching Data Centers Sprout Across the West*, Bill Lane Center for the American West [Stanford University] (Apr. 8, 2025). B. Srivasthan, M. Sorel, and P. Sachdeva, *AI Power: Expanding Data Center Capacity to Meet Growing Demand*, McKinsey & Company (Oct. 2024), pp. 5-7.

131. B. Sakura Cannestra, "Santa Clara Data Centers Hit Max Energy Capacity", *San Jose Spotlight* (May 30, 2025). See the M. Petersen article cited below for information about the proportion of electricity usage in Santa Clara.

132. S. Cooper, "Noisy, Hungry Data Centers Are Catching Communities by Surprise", *New York Times* (Sep. 15, 2024). Y. Tao and P. Gao, "Global Data Center Expansion and Human Health: A Call for Empirical Research", *Eco-Environment & Health* 4.3 (Sep. 2025).

133. M. Petersen, "Power-Hungry AI Data Centers are Raising Electric Bills and Blackout Risk", *Los Angeles Times* (Aug. 12, 2024).

134. See, for example, comments from Mark Morgan as quoted in F. Barringer, *Thirsty for Water and Power*, Bill Lane Center for the American West [Stanford University] (Apr. 8, 2025).

135. M. Petersen, "Power-Hungry AI Data Centers", *Los Angeles Times* (Aug. 12, 2024). According to the McKinsey report cited above, data center construction can add up to 1500 jobs, but the average facility employs only 50 permanent workers.

136. I. Penn and K. Weise, "Big Tech's A.I. Data Centers are Driving Up Electricity Bills for Everyone", *New York Times* (Aug. 14, 2025).

137. This was the intent behind the original version of SB 57 (Padilla), which would have required the CPUC to create a new rate for "large load" customers—i.e., data centers—that would minimize cost shifts due to transmission and distribution expenses. This has since been stricken from the bill.

138. C. Chen, "China Built Hundreds of AI Data Centers to Catch the AI Boom. Now Many Stand Unused", *MIT Technology Review* (Mar. 26, 2025).

139. J. Quigley, "Load Growth Irrational Exuberance Crashes into DeepSeek", *Kleinman Center for Energy Policy Blog* [University of Pennsylvania] (Jan.31, 2025).

140. Click here for a link to the text of SB 100. For a helpful overview of the bill and the actions needed to fulfill its mandate, see the California Energy Commission "SB 100 Joint Agency Report" website.

141. Click here for a link to the text of AB 1279. For a succinct overview of the bill and its rationale, see Asm. A. Muratsuchi, "Governor Newsom Signs Assemblymember Muratsuchi's AB 1279, the California Climate Crisis Act" [press release] (Sep. 16, 2022).

142. California Air Resources Board, *2022 Scoping Plan for Achieving Carbon Neutrality* (Dec. 2022).

143. CEC, CPUC, and CARB, *2021 SB 100 Joint Agency Report* (Mar. 15, 2021), p. 75. Information about current grid capacity is from the California Energy Commission "2023 Total System Electric Generation" website.

144. J. Neutel et al., *Pathways to Carbon Neutrality in California: What Will It Take to Get to Net-Zero Emissions in California?*, Stanford Center for Carbon Storage and Stanford Carbon Removal Initiative (Jul. 2024), p. 1.

145. CEC, CPUC, and CARB, *2021 SB 100 Joint Agency Report* (Mar. 15, 2021), p. 10.

146. This chart is a composite of several sources. In addition to the agency websites themselves, the budgets for the CPUC, PAO, and CEC provide detailed accounts of funding, personnel and agency activities. See also N. Zanjani, *A Brief History of the California Public Utilities Commission: Examining the Past to Help Shape the Future*, CPUC (Aug. 15, 2014), Public Advocates Office "Our History" website, and the video "45 Years of Leadership: A Look Back at the CEC". Budget and staffing figures are from the 2025-26 approved budget. Budget and staffing numbers for the Public Advocates Office are subtracted from CPUC totals. The official name of the CEC is the Energy Resources Conservation and Development Commission.

147. This chart represents an aggregate of several sources. See, in particular, StudyElectrical.com "Types of Electric Utilities in the United States" website; California Municipal Utilities Association "What is a Publicly Owned Utility?" website; Bloom Energy "New Challenges and Market Dynamics for CA Electric Utilities" website; E. Pelegri-Llopart "Comparing PGE&E to CCAs and POUs", *Musings from California* blog (Jun. 26, 2024); California Community Choice Association "Making California Electricity More Affordable" website. CPUC "Community Choice Aggregation—Consumer Information" website.

148. Created in collaboration with ChatGPT-5. As a scoring-based method for guiding energy policy, this framework is similar to J. Wilcox, N. Deich, and H.J. Buck, *Elevating Carbon Management: A Policy Decision-Making Framework and Rubric for the 21st Century*, UPenn Kleinman Center for Energy Policy (Jul. 2025).

Little Hoover Commission Members

PEDRO NAVA |SANTA BARBARA
Appointed to the Commission by Speaker of the Assembly John Pérez in April 2013 and reappointed by Speakers Rendon in 2017 and 2021 and Rivas in 2024. Government relations advisor. Former State Assemblymember from 2004 to 2010, civil litigator, deputy district attorney and member of the state Coastal Commission. Elected chair of the Commission in March 2014.

ANTHONY CANNELLA | Ceres
Appointed by the Senate Rules Committee in March 2022. Elected Vice Chair in July 2023. Civil engineer and principal with Northstar Engineering Group. Former State Senator from 2010 to 2018. Previously served on the Ceres City Council and was twice elected mayor of that city.

DION ARONER |BERKELY
Appointed by the Senate Rules Committee in April 2019. Partner for Aroner, Jewel, and Ellis. Former State Assemblymember from 1996 to 2002, chief of staff for Assemblymember Tom Bates, social worker for Alameda County, and the first female president of Service Employees International Union 535.

DAVID BEIER | San Francisco
Appointed by Governor Edmund G. Brown Jr. in June 2014 and reappointed in January 2018. Managing director of Bay City Capital. Former senior officer of Genentech and Amgen, and counsel to the U.S. House of Representatives Committee on the Judiciary.

SENATOR CHRISTOPHER CABALDON | West Sacramento
Appointed by the Senate Rules Committee in February 2025. Elected in 2024 to represent Senate District 3, which encompasses portions of Contra Costa, Napa, Solano, Sonoma, Yolo, and Sacramento Counties.

AASSEMBLYMEMBER PHILLIP CHEN | Yorba Linda
Appointed by Speaker of the Assembly Anthony Rendon in October 2021. Elected in November 2016 to represent District 55. Represents portions of Los Angeles, Orange and San Bernardino counties and the cities of Brea, Chino Hills, Diamond Bar, La Habra, Industry, Placentia, Rowland Heights, Walnut, West Covina and Yorba Linda.

GIL GARCETTI | Los Angeles
Appointed by Governor Gavin Newsom in November 2021. Professional photographer and author of ten books. Former Los Angeles County District Attorney, teaching Fellow at Harvard University's Kennedy School, and president of the California Science Center Foundation's Board of Trustees.

JOSÉ ATILIO HERNÁNDEZ | Burbank
Appointed by Speaker of the Assembly Anthony Rendon in April 2023. Founder and CEO of IDEATE California, a public relations and policy management firm. Also, founder and Board Chairman of ideateLABS. Former Director for External Affairs and Community Relations for ConnectEd: The California Center for College and Career.

JASON JOHNSON | Napa
Appointed by Governor Newsom in June 2023. Member of the Land Trust of Napa County Board of Trustees and Horary Commander of Travis Air Force Base. Former Managing Partner at Founders Den. Founder and former CEO at August Home Inc.

GAYLE MILLER | Sacramento
Managing Director of Transition, Institutional Relationships and Investments for Brookfield Asset Management and Vice-Chair of the Delta Stewardship Council. Previously served as Senior Counselor on Infrastructure and Clean Energy Finance for Governor Newsom and Chief Deputy of Policy at the California Department of Finance. Appointed to the Commission by Governor Gavin Newsom in January 2025.

SENATOR ROGER NIELLO | Fair Oaks
Elected in 2022 to represent the 6th Senate District. Appointed by the Senate Rules Committee in February 2025. Elected in 2022 to represent Senate District 6, which encompasses portions of Placer County, including cities such as Auburn, Granite Bay, and Lincoln, as well as parts of Sacramento County, including cities such as Antelope, Folsom, Orangevale, and Rancho Cordova.

ASSEMBLYMEMBER LIZ ORTEGA | San Leandro
Appointed by Speaker of the Assembly Anthony Rendon in March 2023. Elected in November 2022 to represent Assembly District 20. Represents Hayward, San Leandro, most of Union City, portions of Dublin and Pleasanton, and several unincorporated communities.

JANNA SIDLEY | Los Angeles
Appointed by Governor Edmund G. Brown Jr. in April 2016 and reappointed in February 2020. Partner at Ichor Strategies and appointed to the Board of the Los Angeles City Employee Retirement System ("LACERS"). Former general counsel at the Port of Los Angeles and city attorney at the Los Angeles City Attorney's Office.

Full biographies are available on the Commission's website at www.lhc.ca.gov

“DEMOCRACY ITSELF IS A PROCESS OF CHANGE, AND SATISFACTION AND COMPLACENCY ARE ENEMIES OF GOOD GOVERNMENT.”

By Governor Edmund G. “Pat” Brown,
addressing the inaugural meeting of the Little Hoover Commission,
April 24,1962, Sacramento, California

Milton Marks Commission on California State Government Organization and Economy

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