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NEW REPORT SHOWS HOW HIGH RETAIL ELECTRICITY PRICES ARE SLOWING CALIFORNIA'S PROGRESS TOWARDS AN EQUITABLE CLEAN ENERGY FUTURE

California Families Burdened by Prices that Cover Costs Unrelated to Usage

Half to two-thirds of the electricity rates paid by California residents are, in effect, a “tax” on electricity that disproportionately burdens lower-income households and discourages adoption of electric vehicles, heat pumps, and other clean technologies, according to a new report commissioned by Next 10, a nonpartisan research nonprofit organization.

The new study, [*Paying for Electricity in California: How Residential Rate Design Impacts Equity and Electrification*](#), authored by researchers at UC Berkeley’s Energy Institute at the Haas School of Business, takes a detailed look at the utility bills of more than 11 million California households served by the state’s three largest investor-owned utilities (IOUs): San Diego Gas & Electric (SDG&E), Pacific Gas & Electric (PG&E), and Southern California Edison (SCE).

The report finds that in 2019, IOU residential customers were paying an effective electricity tax that averaged \$678 per year. During the period covered by the study, the effective electricity tax was \$809 for typical PG&E customers, \$512 for SCE customers, and \$786 for SDG&E customers.

“The time has come for the state legislature, the governor and the public utilities commission to take an urgent look at reforming how California allocates electricity system and related costs. Working together, the utilities and the state government can eliminate a growing disincentive to clean power conversion, and lift an economic burden that falls heavily on those least able to pay,” said F. Noel Perry, Founder of Next 10.

News media and interested parties are invited to a Next 10 and the Energy Institute at Haas webinar discussing the report and its findings on Tuesday, October 4th at 11am PT. [Click here to register for the webinar.](#)

A REGRESSIVE ELECTRICITY TAX

The researchers—Professors Severin Borenstein, Meredith Fowlie, and James Sallee—conclude that utilities in California are covering many costs beyond the direct cost of supplying electricity through higher electricity prices. These additions to the price of each kilowatt-hour, effectively a tax on grid electricity, pay for the costs of climate change mitigation, wildfire adaptation, legacy infrastructure, and subsidies for new technology R&D, energy efficiency investments, low-income customers, and rooftop solar, among other fixed costs and policy expenses. The report finds that these costs, many of which are escalating rapidly, are borne inequitably.

The Energy Institute researchers find that because electricity bills account for a larger share of income among lower-income households, this invisible electricity tax is far more regressive than



the state income tax and somewhat more regressive than the state sales tax, which is widely understood to be regressive. For low-income households in the PG&E and SDG&E areas, this cost recovery burden amounts to three percent of annual income on average. That's more than three times the share of income for wealthier households. The regressive effects are magnified during times of increased energy demand, such as Californians experienced during this month's record-breaking heat wave.

Because monthly electricity bills do not separate the incremental cost of consuming electricity from other cost recovery, the impact of this revenue raising approach is not apparent to customers. But these residual costs are now the main driver of retail electricity price increases, which have risen 16 percent on average since 2019.

"Every time an SDG&E, PG&E, or SCE residential ratepayer plugs in their computer, their refrigerator or their electric car, at least half of the price for that power goes to pay for utilities' system costs and related public policies that we could pay for in other ways," said Severin Bornstein, a professor of Business Administration and Public Policy at Haas. "Rising consumer electric bills are one of the biggest economic barriers to the success of energy decarbonization in California."

ROOFTOP SOLAR'S REGRESSIVE EFFECT ON RATES

Households that consume more grid electricity end up bearing a larger share of the cost recovery burden. A growing number of households are reducing their grid electricity consumption by adopting rooftop solar systems. The authors show that these adopters are disproportionately high income. As the cost burden shifts from the rooftop solar haves to the have-nots, the current electricity rate structure becomes even more regressive.

"While rooftop solar is a win for decarbonization when you look at it in isolation, the trend has made this 'electricity tax' even more regressive and inequitable for everyone else," said James Sallee, Associate Professor in the Agricultural & Resource Economics department. "Households are billed on net consumption, which means rooftop solar owners are now able to evade a significant share of the residual costs, even though these households benefit from what the fixed costs pay for, such as wildfire mitigation and the capital costs of a reliable backup system."

BARRIERS TO CLEAN ENERGY CONVERSION

The California Air Resources Board (CARB) just adopted a rule that requires the share of new vehicle sales that are zero-emission vehicle (ZEV) to gradually ramp up over the next 13 years, hitting 100 percent in 2035. However, as the report states, California's strategy for rapidly accelerating consumer ZEV purchases is at risk if potential buyers continue to face high prices for the electricity to operate them.

"When we use retail electricity rates to raise revenues for wildfire adaptation, infrastructure investments, and public programs, we make it more expensive for Californians to switch from gasoline-powered cars to electric cars," said Meredith Fowlie, a Professor in Berkeley's Agricultural & Resource Economics department. "For those California households considering the switch, the average cost to charge an EV is around \$600 per year more than the actual cost of providing the electricity. Based on previous research on EV demand in California, we find that this electrification cost premium has likely reduced EV adoption by somewhere between 13 and 33 percent."



In similar analysis of residential space heating, the authors find that adjusting retail electricity prices to reflect the actual cost of supply (including emissions costs) would likely increase electric heat pump adoption by about one-third.

ELECTRICITY RATE REFORM

The new study is a follow-up to the authors' 2021 study, [*Designing Electricity Rates for An Equitable Energy Transition*](#). As they did in the prior study, the authors recommend that lawmakers and the California Public Utilities Commission explore two electricity rate reform alternatives that could deliver both efficiency and equity gains:

- Remove a portion of fixed utility costs from what consumers pay, and instead fund them through the state budget, which is financed primarily with more-progressive income and sales taxes.
- Require utilities to develop an income-based monthly customer fixed charge that allocates the residual cost burden in a more progressive way.

Both reform concepts would ensure higher-income households would pay their fair share of utility fixed costs, while enabling all households, regardless of income, to experience the economic benefit from converting to EVs and other cleaner technologies.

“As we assess the future of electricity in California, and the critical role utilities and their customers will be expected to play in making our state safer and more sustainable, it’s clear we need to apply equitable options that already exist to cover electric utilities’ rising costs,” Perry said. “The recommendations of this study would boost electrification and allow California consumers at every income level to participate in the energy transition.”

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About Next 10

Next 10 is an independent, nonpartisan, nonprofit organization that educates, engages and empowers Californians to improve the state’s future. With a focus on the intersection of the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

The Energy Institute at Haas helps create a more economically and environmentally sustainable energy future through research, teaching and policy engagement. The Energy Institute produces research and analysis backed by rigorous empirical evidence and the frontiers of economic research so that energy and environmental policy and business decisions are based on sound economic and business principles.