

III Cicero Institute

Why is PG&E Failing California? All the Wrong Incentives

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INTRODUCTION

The Pacific Gas & Electric Company (PG&E), California's largest electric utility, is in bankruptcy for the second time in 20 years. It filed this time in January of 2019, after its flagging power lines sparked over a dozen wildfires and over a hundred deaths, as well as hundreds of thousands of home evacuations and billions of dollars in damages. This year, its power lines caused more fires and more deaths, and the company began rolling blackouts to prevent continued casualties and costs. The blackouts have kept millions of Bay Area customers in the dark, often for days at a time. Thus a once-stodgy utility company, one that provides power to one out of every twenty Americans, has become a high-risk, low-reward business, with dire consequences for people of California.

Why has PG&E gone so wrong? Specifically, why has the backbone of PG&E's electric grid, its transmission and distribution lines, become a literal live-wire threat to the state, one which often has been turned off? There is plenty of blame to go around, including poor forestry practices by state and federal agencies,¹ higher temperatures caused by climate change,² and simple bad practices by PG&E itself.³

Yet a major reason for PG&E's debacle is that state and federal electric regulators have not incentivized PG&E to improve safety or efficiency. Regulators have demanded billions of dollars in new transmission investment, but they

have not focused on delivering cheap and effective electricity to California's citizens. Even worse, they have ignored alternative models in other countries that have allowed utilities to absorb both the upsides and downsides to investment, and which could have created safe and affordable electricity for customers.

At the same time as regulators have de-incentivized needed repairs, they have increased liabilities for the simple act of delivering power, whether or not a company maintains its wires properly. Instead of finding other means to prevent and limit fire damage from live wires, regulators and PG&E have settled for the unnecessary default of just cutting off power entirely.

PG&E's odd responses to criticism of its electric grid reveal why the system needs to change. When the *Wall Street Journal* wrote an article on collapsing, century-old electric lines and towers, PG&E argued that one of those towers "was not slated for work" and that work on another "was not maintenance related."⁴ In other words, the *Journal* was wrong to even imply that PG&E planned to repair these lines. Why is this considered a defense? Because electric utility regulators, and not PG&E, decide what maintenance "plans" PG&E should carry out, and these power-line repairs were not among them. There is a better, incentives-driven model, one that forces utilities like PG&E to respond to customer demands for safe electricity, and that imposes appropriate liabilities for failure to do so.

¹ Doug Lamalfa, "California wildfires show we need common-sense forest policies." USA Today. Gannett Satellite Information Network, LLC, Nov. 14, 2018. <https://www.usatoday.com/story/opinion/2018/11/14/california-wildfires-show-we-need-common-sense-forest-policies/1994124002/>.

² Alejandra Borunda, "Climate change is contributing to California's fires." National Geographic. National Geographic Partners, LLC, October 25, 2019. <https://www.nationalgeographic.com/science/2019/10/climate-change-california-power-outage/>.

³ Ivan Penn et al, "How PG&E Ignored Fire Risks in Favor of Profits." The New York Times. The New York Times Company, March 18, 2019. <https://www.nytimes.com/interactive/2019/03/18/business/pg-e-california-wildfires.html>.

⁴ Katherine Blunt and Russell Gold, "PG&E Delayed Safety Work on Power Line That Is Prime Suspect in California Wildfire." The Wall Street Journal. Dow Jones & Company, Inc, Feb. 27, 2019.

<https://www.wsj.com/articles/pg-e-delayed-safety-work-on-power-line-that-is-prime-suspect-in-california-wildfire-11551292977>. Robert Walton, "PG&E disputes allegations it deferred maintenance on transmission line tied to deadly Camp Fire." UtilityDive. Industry Dive, Feb. 28, 2019. <https://www.utilitydive.com/news/pg-e-disputes-allegations-it-deferred-maintenance-on-transmission-line-tied/549423/>.

But first we have to explain why we ended up with our current, failing model.

CALIFORNIA'S GRID: GOLD-PLATED AND COLLAPSING

Regulation of California's electric grid is divided and confusing, and this is part of the problem. The Federal Electric Regulatory Commission (FERC) supervises the highest-voltage "transmission lines," which for PG&E means long-distance lines over 60 kilovolts. The California Public Utilities Commission (CPUC) supervises the lower-voltage "distribution lines," which means lines from electrical substations to the homes and lower-power commercial customers. The California Independent Systems Operator (CAISO), a non-profit organized by the state of California, runs the market that allows purchases and sales of electric power on these lines.⁵

PG&E, meanwhile, owns the transmission and distribution lines. It tries to buy power as cheaply as possible, and then sell it at the electric "tariff rate" set by the FERC and CPUC. PG&E generates about half of the electric power it sells, from its Diablo Canyon Nuclear Plant and a handful of natural gas plants, and purchases the other half, most of it renewable energy from solar and wind farms, but also gas plants and electricity from out-state.

When FERC and CPUC set the tariff rate at which PG&E can sell electricity to its customers, they

take into account the "rate base," or how much regulator-approved investment PG&E has made in its electric lines. The more approved investments, the higher rate PG&E can charge. As its annual report states, the company "capitalizes" many "costs that that would otherwise be chargeable to expense if it is probable that the incurred costs will be recovered in future rates" approved by FERC and CPUC.⁶

FERC, which controls the long-distance and most dangerous lines, has not been skimpy about approving transmission investment. **PG&E's FERC approved transmission investments increased from about \$600 million in 2010 to about \$1.6 billion in 2018.** Meanwhile, CPUC has also expanded distribution investment substantially. **State utilities' CPUC approved distribution investments increased from \$8 billion in 2010 to almost \$11 billion in 2018, with PG&E's being the largest component.**⁷ **In other words, PG&E and other state utilities pay billions of dollars more a year for power lines than just a few years ago, and somehow their customers get less for it.**⁸

These large and increasing investments are reflected in PG&E's rates to final customers. **While nationally electricity costs about 13 cents a kilowatt hour, California and PG&Es ratepayers pay about 20 cents, the highest in the continental US, or over 50% more than average, for power that is also more likely to fail.**⁹

⁵ For background of these divisions, see David Hirsch, Power Loss.

⁶ "2018 Annual Report." PG&E. p. 123.5. https://www.pge.com/pge_global/common/pdfs/about-pge/company-information/regulation/FERCForm1.pdf

⁷ "California Electric and Gas Utility Cost Report." California Public Utilities Commission Energy Division. April 2019. Pp. 23, 15. https://www.cpuc.ca.gov/uploadedFiles/CPUCWebsite/Content/About_Us/Organization/Divisions/Office_of_Governmental_Affairs/Legislation/2019/2018%20AB%2067%20Report.pdf. PG&Es distribution costs over time is not broken out of total statewide distribution costs in this report, but in 2018 it composed about 40% of the costs

⁸ "Fact Sheet." FERC, Aug. 8, 2006. <https://www.ferc.gov/legal/fed-sta/epact-fact-sheet.pdf>. Since the Energy Act of 2005, the federal government has also provided millions in tax breaks and incentives to expand transmission capacity, which has helped spur PG&Es spending.

"Major utilities continue to increase spending on U.S. electric distribution systems." USEIA, Jul. 20, 2018. <https://www.eia.gov/todayinenergy/detail.php?id=36675>. Electric distribution has increased from \$31 billion to \$51 billion nationally in the past 20 years, with the Western US growing the quickest. Most of these costs have not been upgrading older lines. According to a 2015 U.S. Department of Energy report, 70% of power transformers are 25 years of age or older, 60% of circuit breakers are 30 years or older, and 70% of transmission lines are 25 years or older.

⁹ "Electricity Rates by State." Electric Choice. Eisenbach Consulting, LLC, Aug. 2019. <https://www.electricchoice.com/electricity-prices-by-state/>.

The bigger question is, where has all this investment gone if not into safe electric transmission? California's own electricity investment report argues that much of it has gone to mandated connections to new renewable sources, which tend to be located at great distance from traditional generators and power lines.¹⁰ There is nothing inherently wrong with such mandates, but the costs must be acknowledged.

Often, however, regulators disapproved simple maintenance spending and then blamed PG&E for failing to do more. When PG&E suggested inspecting 300,000 poles a year to ensure safety in 2012, CPUC cut the total to 235,000.¹¹ In 2011 and 2012, when PG&E spent almost \$100 million more on replacing poles than allowed by CPUC, the regulator took that as a reason to deny future claims for pole replacement spending. It said "PG&E demonstrated the capacity and willingness to spend more than previously authorized...to meet service obligations," thus they would not include extra required pole replacements in the "rate base." These sorts of decisions created exactly the wrong incentives, penalizing PG&E for doing more than was required.¹²

WORKABLE GRID MODELS

When both California and the United States began electricity market deregulation in 1996, they were focused on one thing: allowing competition between power generators. The basic model was

that while the electric grid itself was a natural monopoly, and thus all its spending needed to be regulated, electric generation wasn't, and thus could be competitive.

California forced old integrated utilities like PG&E to sell off half of their generating capacity, and then buy the rest of their power in an open market supervised by CAISO. CPUC and FERC, meanwhile, would still supervise every one of PG&E proposed expenditures. The disaster of the 2000 California brownouts, caused by insufficient competition in the generating market, price limits on retail sales, and the inability for utilities like PG&E to buy electricity on a "forward" market, meant reform stalled.¹³ Although California soon removed these remaining generations restrictions, and began policing for market manipulation, the electric grid itself remained under classic, early-20th century regulation.

Other countries, however, have helped make the provision of grid and transmission services a dynamic industry. **Since reform in 1989, Great Britain's national grid company is regulated on a "price cap" model. The regulator still sets a cap on what the company can charge its customers, but the cap is left in place for at least five years, and any energy or distribution efficiencies the grid company puts in place in the meantime it can keep. Thus the price can stay temporarily higher, and the utility can keep profits from more efficiency, without having to go through tedious "rate base" investment requests to regulator.** In California,

¹⁰ "California Electric, 22. When PG&E proposed a \$4.8 billion long-term investment strategy in 2012, the CPUC cut it in half. Alyssia Finley, "Stakeholder Capitalism in Action." The Wall Street Journal. Dow Jones & Company, Inc, Oct. 21, 2019. <https://www.wsj.com/articles/stakeholder-capitalism-in-action-11571696787>. One estimate is that almost 30% of all transmission investment in the pipeline is towards connection to new generation resources, largely renewable. "Transmission & Distribution Infrastructure." Harris Williams & Co. Summer 2014. https://www.harriswilliams.com/sites/default/files/industry_reports/ep_td_white_paper_06_10_14_final.pdf

¹¹ "Decision Authorizing Pacific Gas and Electric Company's General Rate Case Revenue Requirement for 2014–2016." California Public Utilities Commission. Aug. 20, 2014. p. 189. <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M102/K361/102361873.PDF>.

¹² "Decision Authorizing Pacific Gas..." CPUC, Aug. 20, 2014. p. 197. <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M102/K361/102361873.PDF>. In this case, as in the last one, CPUC claimed the extra spending merely made up for deferred maintenance that PG&E previously failed to perform, and they should not get the benefits of such deferral. PG&E argued that it had to delay earlier implementation due to other mandates from the regulator. In any case, safety seemed of at best secondary focus for both. An advocacy group recommended including up to \$200 million extra capital costs for pole replacement, which PG&E did not oppose, but CPUC denied this proposal as well. Ibid, 194.

¹³ Paul Joskow & Edward Kahn. "A Quantitative Analysis of Pricing Behavior in California's Wholesale Electricity Market During Summer 2000: The Final Word." Feb. 4, 2002. <https://economics.mit.edu/files/1151>.

by contrast, the more efficient the utility is, the lower its “rate base” and the lower the prices the regulator allows them to charge. California’s system incentivizes inefficiency.¹⁴

Similar market and price-cap reforms in Argentina brought down power prices there by half.¹⁵ In Argentina they also differentiate final electricity prices by location, which is known as “nodal pricing.” Thus when congestion on transmission lines leads to insufficient power and higher prices in some areas of the country than in others, the differences in price incentivizes the grid company to construct more transmission and deliver the extra electricity.¹⁶

California still needs to regulate access to the grid, and it should still require power companies to adopt clean power and reliability mandates, but it needs to do these things with the right incentives. Instead of just telling companies what to spend, customers need to tell PG&E what they actually want, and regulators need to allow PG&E to invest to meet those demands. PG&E should not be going to CPUC and FERC for any possible investment in a “mother may I” attitude. The current model leads to inefficient investments in some areas, as well as inefficient under-investments in others, such as power line maintenance.

WHO IS LIABLE AND WHY IT MATTERS

The proximate cause of PG&E’s most recent bankruptcy is an estimated \$30 billion liability for wildfire damages. The fear of more liabilities, and not just fear for the public’s safety, is a motivating factor in the recent power shutoffs, or, to use PG&E’s clunky phrasing, the “de-energization” of parts of the Bay Area.

The problem is that current liability policies lead PG&E to cut-off power even when it is not necessary to prevent wildfires, and thus subjects the public to unnecessary pain and suffering.

One reason for PG&E’s “de-energization” is a California rule known as “inverse condemnation.” Under this rule, utilities are subject to strict liability for any damages caused by their wires or equipment.¹⁷ This means that plaintiffs in lawsuits against PG&E, unlike plaintiffs against most private companies, do not have to show that the company was negligent in maintaining its wires in order to get damage awards from them. As long as the company’s equipment was one cause of a fire, it is fully liable for all of the damages of that fire. This is true even if there were several other causes for the fire, and even if the utility did everything in its power to prevent it.¹⁸

States impose inverse condemnation rules when something is beneficial to the whole public, such as transmission wires and any unavoidable costs of operating them, with the understanding that the

¹⁴ A. Al-Sunaidy & R. Green. “Electricity Deregulation in OECD Countries.” N.d. <http://spiral.imperial.ac.uk:8080/bitstream/10044/1/10436/2/OECD%20deregulation%20paper.pdf>. [PS clarity needed on mechanics of UK system, and this part.]

¹⁵ Gomez-Ibanez, Regulating Infrastructure.

¹⁶ For the past four years, California’s CPUC has operated a “congestion charge” market, but this is still incipient, and should be expanded. It’s nodal pricing is also not used to determine investment, and is not as “fine-grained” as other countries’ nodal models.

“Congestion Revenue Rights Auction Efficiency.” California ISO, Feb. 8, 2018. <https://www.caiso.com/Documents/DraftFinalProposal-CongestionRevenueRightsAuctionEfficiency-Track1.pdf>. For entirely new transmission wires, the regulators still need to supervise spending and eminent domain authority, but they should be led by differences in prices between nodes, which show wing insufficient transfers and power in some areas relative to others.

¹⁷ The principle of inverse condemnation, although generally applied to government actions, was first applied to privately-owned “public utilities” in *Barham v. Southern Cal. Edison Co.*, 74 Cal. App. 4th 744, 751–52.

¹⁸ *Marshall v. Department of Water and Power of the City of Los Angeles*, 219 Cal. App. 3d 1124, 1138–39 (1990)

entire public, and not just one group, should help pay for any consequences of them. Yet in 2017 CPUC decided that San Diego Gas and Electric could not raise its rates to recover \$379 million in inverse condemnation liabilities due to a 2007 wildfire. These wildfire liabilities would be pure losses to the company. CPUC made this decision though the inverse condemnation rules meant courts had never actually found the company at fault for the fire.¹⁹ Basically, instead of imposing costs on the whole public, CPUC's decision imposed costs on every utility operating inside a fire zone.

The CPUC ruling preventing higher rates for wildfire liabilities sent shockwaves through the utility world, and meant that basically any working low-voltage electric wire was a time bomb, which could subject utilities to uncapped billions in damages, no matter what they did to prevent it.

As the Vice President of Moody's said, "California's application of inverse condemnation effectively turns the state's investor-owned and publicly owned electric utilities into an insurance backstop," which explained Moody's downgrading of public utility debt.²⁰ Another California utility, Southern California Edison, claimed that under the new risk system, they required a rate of return of 17%, or almost double what was once required, to attract the risky capital

to maintain and expand transmission wires. These new rates of return will have to be passed to the ratepayers eventually, even if the direct consequences of fire are not.²¹ The costs of making utilities general insurers for the public against all fire is that the public, somehow or another, will have to pay for it.

PG&E, however, can avoid these excess liabilities and insurance risks by another route: just cutting off power, the bluntest and most painful way to deal with wildfire risks. In 2018, the year after the CPUC ruling, PG&E decided to adopt blanket blackouts. This despite the fact that fire risks did not suddenly increase in 2018, and the fact many fires since have apparently started even in areas where PG&E has cut off power, and that only about 5% of wildfires, or about 10% of acres burned, involved electric line malfunctions.²²

The blackouts accelerated this year, after PG&E's bankruptcy, and the reason for this is again liability law. All new claims incurred during a bankruptcy proceeding are "senior" to previous claims, meaning they have a particular impact on previous bond and stockholders, and further delay exit from the bankruptcy itself.²³ In other words, PG&E right now is particularly sensitive to claims and therefore it is more likely to shut down power, even if the likelihood of fire damage is small.

¹⁹ Rob Nikolewski, "CPUC Rules Against SDG&E in 2007 Wildfire Case." The San Diego Union-Tribune. Nov. 30, 2017. <https://www.sandiegouniontribune.com/business/energy-green/sd-fi-sdge-wildfirecaseruling-20171130-story.html>.

²⁰ "Regulators and Legislators Explore Credit-Supportive Fire Risk Solutions for PG&E and Other California Utilities." Moody's Investors Service. April 3, 2019. https://www.moody.com/research/Moodys-Regulators-and-legislators-explore-credit-supportive-fire-risk-solutions-PBC_1169106?WT.mc_id=AM~RmluYW56ZW4ubmV0X1JTQ9SYXRpbmdzO5ld3NFtm9fVHJhbnNsYXRpb25z~20190403_PBC_1169106.

²¹ Robert Walton, "Southern California Edison Requests Higher ROE, Citing Wildfire Risks." Utility Dive. Industry Dive, April 12, 2019, <https://www.utilitydive.com/news/southern-california-edison-requests-higher-roe-citing-wildfire-risks/552577/>.

²² Carolyn Kousky, Katherin Greig, and Brett Lingle, "Financing Third Party Wildfire Damages," Wharton Risk Management and Decision Processes Center, February 2019, p. 26 <https://riskcenter.wharton.upenn.edu/wp-content/uploads/2019/02/Financing-Third-Party-Wildfire-Damages-Options-for-Californias-Electric-Utilities.pdf> Tara Law, "California's Power Shutoffs Might Prevent Wildfires. But Are They Worth the Risks?" Time Magazine. Time USA, LLC, Oct. 25, 2019, <https://time.com/5710169/california-power-wildfires-pge/>. At least in 2015, however, these malfunctions burned about 50% of all wildfire acreage. Ivan Penn, "Power Lines and Electrical Equipment are a Leading Cause of California Wildfires." The Los Angeles Times. Oct. 17, 2017. <https://www.latimes.com/business/la-fi-utility-wildfires-20171017-story.html>.

"Facts + Statistics: Wildfires." Insurance Information Institute. <https://www.iii.org/fact-statistic/facts-statistics-wildfires>

²³ Adam Rogers, "California's Power Outages Are About Wildfires — But Also Money." Wired Magazine. Condé Nast, Oct. 10, 2019. <https://www.wired.com/story/californias-power-outages-are-about-wildfires-but-also-money/>.

PG&E has made many inexplicable decisions about when and where to “de-energize,” but one explanation for their decisions comes from the division between state and federal regulation of recovery of liability costs. Although the CPUC disallowed San Diego Gas and Electric from recovering the costs of wildfire liability from ratepayers, the federal regulator, FERC, which focuses on high-voltage transmission wires, did allow recovery, through higher customer rates, of almost \$100 million relating to damages caused by these transmission wires.²⁴

The division of state and federal responsibility means that state-supervised low-voltage lines are, ironically, much more likely to cause liability for PG&E than high-voltage lines. When PG&E began power cut-offs last year, consequently, they only cut-off lines of less than 70 kilovolts.²⁵ This was only 1 kilovolt above the San Diego Gas and Electric line that sparked the 2007 San Diego fire and caused billions in liabilities. Unless the company thought there was no way a higher-voltage line than San Diego’s could start a fire, this was an odd cut-off point. Yet it makes sense in that almost all the cutoff lines were subject to CPUC no-recovery through higher rates rules, while the lines that kept running were likely to get ratepayer recoveries under FERC.

The 70 kilovolt cut-off proved ineffective in preventing wildfires, however, because later that

year a 115 kilowatt helped spark the devastating Camp Fire. PG&E had earlier debated and decided against shutting off that particular line.²⁶ The likely recovery rules are one explanation for the failure to cut-off power even in a legitimately dangerous area. Yet CPUC has now found that another low-voltage distribution line went down in the same area, which under California rules could make the company entirely subject to state liability with no possibility of recovery through rates. This failure explains PG&E billions in liability for the Camp Fire and its subsequent bankruptcy.²⁷

In 2019, PG&E began shutting down some high voltage lines as well as lower voltage ones. **Yet most shutdowns continued to be on lower voltage distribution lines subject to CPUC authority and no-recovery rules.²⁸ In reality, this means most small homeowners are subject to blackouts, while large businesses and industries are exempt.** As one Stanford professor explained, “What PG&E is doing is blacking out the kind of low-voltage wires that deliver power to homes. But, typically, big commercial customers, like a tech headquarters ... tend to be located closer to the bulk transmission system

²⁴ San Diego Gas & Electric Company v. Public Utilities Commission of the State of California, 18–1368 (Supreme Court, 2018). https://www.supremecourt.gov/DocketPDF/18/18-1368/98044/20190430151930791_18-___PetitionForAWritOfCertiorari.pdf.

²⁵ Jeff St. John, “Why PG&E Didn’t Cut the Power to Possibly Prevent California’s Deadliest Wildfire.” Green Tech Media. Nov. 28, 2018. <https://www.greentechmedia.com/articles/read/why-pge-didnt-cut-power-to-possibly-prevent-californias-deadliest-wildfire>.

²⁶ Dan Brekke, “Report: PG&E Knew High-Voltage Lines Posed Fire Danger, But Put Off Repairs.” KQED News. Jul. 10, 2019. <https://www.kqed.org/news/11760156/report-pge-knew-about-extensive-power-line-problems-but-delayed-repairs-for-years>; J. D. Morris, “PG&E Considers Shutting Off More Lines During Times of Wildfire Risk.” San Francisco Chronicle. Hearst Communications, Inc. Dec. 14, 2018. <https://www.sfchronicle.com/california-wildfires/article/PG-E-considers-shutting-off-transmission-lines-13467311.php>.

²⁷ Besides the 115 kilovolt line, one pole holding up a 12 kilovolt line also failed at the time of the fire, apparently with “bullets and bullet holes at the break point.” Although the shooting of the pole is not PG&E’s fault, and although it may not be the main cause of the fire, the inverse condemnation rules mean it may all be charged to state CPUC authority. “PG&E Publicly Releases Supplemental Report on Electric Incidents Near the Camp Fire.” PG&E. Dec. 11, 2018. https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20181211_pge_publicly_releases_supplemental_report_on_electric_incidents_near_the_camp_fire.

²⁸ Almost all shutdowns are away from the high-power lines. See transmission lines at California energy map here: https://ww2.energy.ca.gov/maps/infrastructure/3P_Enlg.pdf and a representative daily shutdown map here. <https://www.sfgate.com/california-wildfires/article/pge-potential-power-outage-map-wind-fire-14501332.php#> Large lines such as on the East Side of the Peninsula and along the Crystal Springs Reservoir are still under power, while transmission-line free areas are not.

[and] the high-voltage lines, which are much less impacted by this outage.”²⁹

PG&E claims that they focus on low-voltage lines is because the higher-voltage lines are better maintained, and in less fire prone areas, but recent analyses of failing high-voltage transmission wires and towers casts doubt on this explanation.³⁰

PG&E’s new CEO Bill Johnson claims “we have a tremendous amount of 60 to 70 Kv transmission that you cannot really put underground,” so their recent shut-off and repair work “is really limited to distribution.”³¹ Yet the amount of PG&E’s transmission or inability to “underground” it is no explanation for why shutoffs will not affect transmission wires. The PG&E CEO’s implicit 60 KV cut-off means that PG&E is only concerned with shutting down lines subject to CPUC. Again, the inability to recover in higher rates from CPUC as opposed to FERC helps explain their decision.

The types of rates PG&E charges also impact how and when they blackout regions. Under state regulations, PG&E gets to charge customers for the transmission, distribution, and generation of electricity. But all of those charges get bundled into the cost of a kilowatt hour, and are therefore dependent on the amount of power consumed per customer.

The problem is that the costs of transmission and distribution are largely fixed, but the charges the regulators allows are not. In other

words, most of the costs of bringing wires to an area, as well as maintaining and insuring them against liability, have nothing to do with how much power is consumed on them on any given day. This means that large commercial and industrial customers, who consume a lot of power, but use little extra distribution, give the utilities most of their profits, and few of their costs. Previous utility attempts to impose a flat “customer charge” just for hooking up to the system, which more closely match the real fixed costs, have been opposed and beaten back by regulators.³² Currently, utilities shed most of their projected liabilities from disconnecting scattered homes, but lose almost none of their revenue, further incentivizing them to keep power running only to large business customers. **By forcing PG&E to “subsidize” small and distant homes through per-watt transmission charges, the regulators have actually encouraged PG&E to shut off power to them as well.** As usual, such hidden cross-subsidies have unintended consequences.

Competition in supplying last-mile power could alleviate these cross-subsidies, as well as other problems in transmission. In places like New England and the United Kingdom, different companies compete to sell rate plans for both residential and commercial customers, and they lease the distribution wires from the main utility in order to do so. People can thus choose the rate plans that work best for them, including plans that allow more spending on green or clean energy, or plans offering discounts for moving electricity consumption from peak hours.³³ **These**

²⁹ Paris Martineau, “Why the PG&E Blackouts Spared California’s Big Tech HQs.” Wired Magazine. Condé Nast, Oct. 9, 2019. <https://www.wired.com/story/why-the-pgande-blackouts-spared-californias-big-tech-hqs/>.

³⁰ Katherine Blunt & Russell Gold, “PG&E Knew for Years Its Lines Could Spark Wildfires, and Didn’t Fix Them.” The Wall Street Journal. Dow Jones & Company, Inc, Jul. 10, 2019. <https://www.wsj.com/articles/pg-e-knew-for-years-its-lines-could-spark-wildfires-and-didnt-fix-them-11562768885>.

³¹ David Louie, “PG&E Power Outage: State Lawmakers Press Utility on Reducing Public Safety Power Shutoff Events.” ABC7 News. ABC, Inc, , Nov. 18, 2019. <https://abc7news.com/politics/state-lawmakers-press-pg-e-on-reducing-power-shutdown-events/5706011/>.

³² “PG&E 2019 SB695 Compliance Report.” PG&E. N.d. <https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442461195>.

³³ Erik Derosiers, “Competitive Electricity Retailing: Why Restructuring Must Go On.” Utility Dive. Industry Dive, Jul. 11, 2017. <https://www.utilitydive.com/news/competitive-electricity-retailing-why-restructuri.ng-must-go-on/446830/>

competitive plans involve fewer cross-subsidies to favored groups. Customers thus bear the costs and get the benefits of the most efficient use of energy.

If CPUC also allows higher prices for transmission during high-liability times, retail competition can also help internalize the costs of fire and other damages from energy use.

Thus consumers would have to pay more for energy during fire-prone times, and perhaps their retailers would even negotiate to cut-off power if the danger was sufficient. In other words, retail competition would force customers to pay for all of the costs of generation and transmission.

CONCLUSION

The failures of PG&E's electrical system are plain to see. Instead of getting cheaper and safer, like goods in most industries, PG&E's power is more expensive, more dangerous, and more irregular than ever. Its system would be an embarrassment even in a much poorer country, let alone the richest area on Earth.

The solution is not a complete deregulation, but regulation to incentivize the best results. There are several reforms that can help get us out of our current morass.

CPUC (and FERC) should change to a “price cap” utility regulation model, with rates set for at least five years, so utilities can keep the gains of increased efficiency. Under a price cap model, utilities don't have to go to regulators to justify every investment and have such investments added to their “rate base.” Instead, they can fund investments that improve efficiency and safety, and ignore those that don't, even while prices to consumers stay capped in the short-term, and gradually drop over time as efficiency increase.

CPUC should allow retail competition in selling electric power to customers. Retail competition would allow customers to choose appropriate rate plans from different companies, including plans which incentivize use at low-demand times, and plans that charge more for using wires during times when liability risks are greater, and which don't cross-subsidize small and distant homeowners.

CPUC should allow a basic customer charge on all utility hook-ups. Since most of the costs of transmission and distribution come from hooking up a home and a business, not the amount of energy used by them, this basic cost should be included in rates. This would prevent cross-subsidies from large electric consumers to low electric consumers, and the resulting shut-offs to those lower-energy users.

If we don't switch to a price-cap regime, CPUC should allow utilities to raise rates to meet the costs of “inverse condemnation” on all power lines. This would overturn CPUC's 2017 decision, and mean companies would not be so frightened of liability that they would shut off even working and well-maintained power lines.

Even better, California legislators should rescind “inverse condemnation” for utilities, and make them liable only for negligence in maintaining their lines. Under the current regime, utilities get charged for wildfires even if they acted perfectly. Instead, utilities should be charged only when they fail to maintain or fix lines, which again gives them the right incentives to improve them.

There is no reason California cannot have cheap, green, and regular electric power. We just need to show our electric companies how to get there. We need to force PG&E and its ilk to earn their money, instead of just rewarding them for spending it.