

# W(h)ither Pacific Gas & Electric? The Future of Electricity in California

By the staff of the Sustainable Systems Research Foundation

## Part I. Why PG&E no longer works

If you live in Northern California, Pacific Gas & Electric's policies and practices are almost certainly affecting you. This publicly traded (i.e., private) utility has been responsible for numerous wildfires over the past decade. It regularly shuts off power to protect itself, in anticipation of wind, fire and heat, and suffers frequent blackouts during inclement weather. PG&E's grid is proving to be exceptionally vulnerable to extreme weather events. Climate change will only increase the number and intensity of such events, and the utilities liabilities for lost lives and destruction. And now, PG&E is raising your rates to prop up its broken system, expecting you to pay for decades of underinvestment and poor maintenance. PG&E no longer works!

To understand why this is so, we must look backward more than 100 years. When private utilities were first created in the early 1900s, they generated electricity in their own power plants and distributed it to customers via wires strung over city streets. To avoid ruinous competition between companies, electric utilities were granted monopolies over designated service areas. To ensure that customers would not be charged extortionate rates, states established public utility commissions which reviewed tariffs and rate increases to make sure they were justified and reasonable. Investor-owned utilities (IOUs) were usually allowed a 10% guaranteed return on their operations, which made their "blue chip" stocks very attractive to investors seeking a reliable source of dividend income.

By the 1980s, Wall Street thought 10% was not enough and "deregulation" became all the rage. Economists and others argued that IOUs should be subject to competition in power generation markets, which would lead to lower electricity prices. California IOUs were ordered to sell off most of their generating plants—except for those that no one wanted, such as the Diablo Canyon nuclear plant—and buy wholesale power from "independent power producers" (IPPS)—companies that generated electricity for competitive sale to utilities.

Electricity deregulation was legislated and implemented in California around 2000, with high hopes. But it was a dismal failure, driving the cost of wholesale and retail electricity to unimagined heights as generators and speculators found that they could charge extortionate prices for wholesale electricity during heatwaves and other periods of high demand. Some utilities tried to pass on these high costs to customers, who raised a ruckus and forced the power companies to eat the loss. As a result, PG&E was forced into its first bankruptcy.

Twenty years later, the IOUs make their money from long-distance transmission and local distribution of electricity. They are still be regulated by public utility commissions, but their profits come from the resale of electricity to customers and rents charged for moving electricity through their wires. These use fees are called “rents” because they don’t go toward paying off debt. Just like a rental property, the rent for transmission and distribution stays the same or rises whether or not the building’s owner has already paid off the mortgage. In the case of PG&E’s wires, the cost of the transmission and distribution (T&D) system was paid off long ago.

Today, the retail price of PG&E-supplied electricity today is the second highest in the country, after Hawai’i but that’s not because electricity is expensive to generate. If you look closely at your utility bill, you will see that the “cost of energy” is only one-fourth, while fully one-half is due to transmission and distribution charges. Most of the rest is due to various state programs and past investments that have gone bad, such as Diablo Canyon.

Whatever the utility gets for T&D is almost pure profit. Some of that is supposed to pay for maintaining and upgrading the grid to make sure it is resilient, reliable and safe. Instead, for decades PG&E has used those revenues to pump up share price and shareholder profits. But not until the deadly San Bruno gas line explosion in 2010 killed eight people and destroyed 38 homes did poor system maintenance come to light with PG&E found guilty of deliberate malfeasance. There was no inkling at the time that the same pattern of criminal neglect might extend to transmission lines in high-risk wildfire zones. And even though PG&E is still regulated by the California Public Utilities Commission (CPUC), there are almost never serious consequences for any mistakes or bad investments, such as burning whole towns. Shareholders continue to receive their 10% annual return on their shares of stock and, if the share prices rise, they can sell shares for a profit.

The regulated monopoly utility system is broken and so is PG&E. What is to be done? In the following parts of this series, we will address vulnerability, reliability, resilience and a potential solution to the broken system.

## Part II. Risk, Reliability, Resilience and Robbery ( words)

PG&E has done a terrible job of ensuring the reliability of its wires, transformers, and switches, many of which are decades old and in fragile condition. Having diverted money from maintaining their system to maintaining shareholder profit for decades, PG&E now says it will need even more money to repair, maintain and improve the grid. Over the next five years, the utility is expected to request upwards of \$30 billion for system repairs, and to make back the money it lost killing nearly 100 people and burning entire cities to the ground, and another \$10 billion to put vulnerable wires underground. If approved by the California Public Utilities Commission (CPUC), these requests will increase retail electricity rates by as much as 40%. California already has the most expensive electricity in the continental United States and this record is unlikely to be challenged unless the state's entire power system is radically transformed.

It's easy to blame climate and weather for California's wildfires, but *The Wall Street Journal* found that the company was responsible for as many as 1,500 between 2014 and 2017.<sup>1</sup> Equipment failures ignited at least 24 major fires over the last five years, including 2021's massive Dixie fire.<sup>2</sup> In 2019, potential lawsuits and liabilities from victims of these fires were projected to be so large that the utility declared bankruptcy again, calling its future as a private and leading to calls for a public takeover of an essential service.

Following the deadly Camp Fire that destroyed Paradise in 2019, and in order to reduce the chances of further failures across its system, PG&E took to simply shutting down parts of its system whenever it feared that weather conditions might cause more fires (these are the so-called PSPS—Public Safety Power Shutoffs). While these are sold as protecting the public, these blackouts are primarily *utility* safety power shutoffs, meant to protect PG&E from future responsibility for and consequent liabilities from wildfires. However, given the interconnected nature of the state's power grid, even customers far from the fires have experienced blackouts, leading to millions of dollars in business, tourism and food losses.

PG&E has become so dangerous and unreliable that it and its supporters talk endlessly about customer "resiliency," which is essentially a euphemism for coping with our broken energy system. Resiliency means maintaining power at "essential facilities" with on-site, mostly-diesel generators that can provide energy when the grid is down (you may have seen generators in the parking lots of supermarkets and restaurants).

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<sup>1</sup>Russell Gold, Katherine Blunt & Rebecca Smith, "PG&E Sparked at Least 1,500 California Fires. Now the Utility Faces Collapse," *Wall Street Journal*, January 13, 2019, at: <https://www.wsj.com/articles/pg-e-sparked-at-least-1,500-california-fires-now-the-utility-faces-collapse-11547410768> (accessed 10/18/21).

<sup>2</sup> Scott Cohn, 'We don't know how much money we have'—California fire victims are at the mercy of Wall Street," CNBC, July 2, 2021, at <https://www.cnbc.com/2021/07/02/why-california-fire-victims-are-at-the-mercy-of-wall-street.html> (accessed 10/18/21).

The rest of us, who are not deemed “essential,” are told to prepare emergency supplies, keep flashlights, food, and water on hand, and test our generators (if you can afford it). You’re on your own. Don’t rely on your cellphone, by the way: it will only work until the backup batteries at the cell towers run down.

To protect wires in the forest, PG&E proposes to spend over \$20 billion to underground 10,000 miles of wires in areas where future wildfires seem most likely. This sum, however, represents only a fraction of the utility’s 125,000 miles of transmission lines, many of which run through wildland areas where fire risks are greatest. Unless the utility undergrounds all of its grid infrastructure, at a cost of hundreds of billions of dollars, no amount of spending is likely to significantly reduce the risk from wildfires. Moreover, undergrounding wires simply props up an obsolete model for delivering electricity that will lock in PG&E’s monopoly and corporate wealth concentration, for generations to come, instead of building a new, future-oriented, far more open and resilient energy system with solutions providers that actually have decent safety records.

So, what are we to do? There is an answer to risks posed by PG&E: distributed, community-based energy generation under the jurisdiction of municipal and community-first entities. If towns, cities, and counties were allowed to generate and distribute electricity from locally developed microgrids, reliance on the increasingly vulnerable grid would decrease, as would rents for the wires. But in California, the system is rigged in favor of the private utilities, specifically to prevent local control of our energy future. At the moment, local access to the grid is only allowed if PG&E and its fellow private utilities are in control. PG&E wants to maintain its monopoly dominance of the power supply and delivery at all costs, even if it costs its customers a fortune. That’s the only way to keep Wall Street and shareholders happy. But in the specific case of PG&E, as we shall see in the third part of this series, that may prove difficult to accomplish.

### III. Wall Street Hedge Funds are Abandoning PG&E—Should We Do the Same? (738 words)

According to a recent investigation by KQED’s Lily Jamali,<sup>3</sup> Wall Street hedge funds have been dumping PG&E shares they were handed, for free, as part of the 2020 bankruptcy settlement. As a result, PG&E has essentially devolved to an ongoing insider/hedge fund arbitrage play, in which customer welfare takes a back seat to corporate prosperity. In essence, PG&E is no longer a regulated public service utility. Instead, it has become the very thing public regulation was meant to prevent: a predatory, profit-maximizing monopoly.

How could this happen? PG&E is held responsible for starting 24 fires that we know of for which it could be sued since 2015, including the 2015 Butte Fire, 2017 Northern California Wildfires, the 2018 Camp Fire and the 2021 Dixie Fire. To avoid a flood of future individual lawsuits that could strip the utility of its assets, PG&E agreed to create a victims’ settlement fund whose administrators control one-quarter of the utility’s two billion shares of stock. The plan is to sell these shares and fill the fund with the proceeds, but, so far, low share value has made it all but impossible for the fund’s managers to do this. Indeed, it now appears that the fund is \$2.5 billion short of the full \$13.5 billion meant to reimburse victims for their losses.<sup>4</sup>

As of this writing (mid-November 2021), PG&E stock is selling for around \$12.40 a share, up from around \$9 in late August. To fully fill the victims’ compensation fund will require a price of \$27 a share. Maybe \$12.40 is all that PG&E is worth, although inside shareholders are hoping it’s more. But there is more here than meets the eye. In effect, some shareholders are wary about PG&E’s prospects, including the hedge funds which received 169 million *free* shares as part of the bankruptcy settlement. The hope was that stock price would rise and they would then buy more shares, making the price increase even more. Instead, according to Jamali, those self-same hedge funds have made around \$2 billion by dumping their stock back into the market.

These sales suggest skepticism about the utility’s future prospects and is not a good sign for PG&E or its customers. That doubt will impact PG&E’s ability to raise the capital in needs to maintain and repair the grid and will lead to even higher rates and poorer service for customers. A low share price also means that fire victims will be left high and dry, to twist in the wind.

That’s not the end of the story: In order to ensure PG&E’s successful exit from bankruptcy and to protect it from future liability, the California Legislature handed billions of dollars of state funds to the utility specifically to shield shareholders from

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<sup>3</sup> “Hedge Funds Cash Out Billions in PG&E Stock. Fire Survivors Summer and Wait.” *KQED California Newsroom*, October 11, 2021, at: <https://www.kqed.org/news/11891626/hedge-funds-cash-out-billions-in-pge-stock-fire-survivors-suffer-and-wait> (accessed 10/12/21).

<sup>4</sup> Cohn, op cit.

future wildfire fire costs. Not a good deal: In 2019, the state could have purchased PG&E lock, stock and barrel for \$2 billion. Instead of protecting customers by turning privatized power into a public good, legislators missed a once-in-a-generation opportunity to take control of California's energy future and dramatically reduce long-term risk and cost to its citizens.

This state of affairs is not the result of the workings of a "free market." What has become evident is that the bankruptcy settlement was designed to keep insider, corporate, and pension fund shareholders fully protected and in full control of the utility, while shifting liabilities and future risk to fire victims and the State of California.

This is what power—in both senses of the term—gets a big corporation in 21<sup>st</sup> century America. As a closely held insider/hedge fund enterprise controlling critical infrastructure and deemed too big to fail, PG&E seeks unchallenged dominance of the critical resources, system planning and capital infusions that should be subject to ongoing, transparent public control by state agencies. Instead, the utility is able to short the public and dictate terms on what constitutes a "reasonable" zero-risk, zero-consequence, high-yield return on investment to its insider/hedge fund/pension fund shareholders.

The regulated monopoly arrangements under which PG&E operates were created over 100 years ago in order to protect customers, but those arrangements are becoming more and more dysfunctional, with PG&E the poster child, and abusive to the ratepayer. The utility wants more and more from customers for less and less reliable service and to reward insiders, institutional investors and the rich with easy money. There is a lot to be said for electricity grids and electrical utilities, but betting on PG&E is a fool's game. Maybe it's time to pull the plug.

#### IV. The Struggle for Solar in California (790 words)

The State of California is committed to a 100% renewable, carbon neutral, all-electric future by 2045. To reach this goal, we will need to eliminate fossil fuels from our current energy mix, build millions of new, solar powered houses, strip natural gas from existing buildings and replace all fossil fueled vehicles with electric ones. The challenge before us now is to develop an ambitious, feasible strategy that will allow us to reach this critical goal.

To fully grasp this challenge fully, it's worth considering how much renewable power will be required. Today, total in-state electrical generating capacity is around 60 gigawatts (million kilowatts). More than half of that generating capacity burns natural gas. To fully electrify the state will require at least 200 gigawatts of solar, wind and other renewable generating capacity, plus batteries. So, a key question is: how will California do this by 2045?

Many solar advocates across the state support decentralized energy resources (DERs), on rooftops and in community-based microgrid systems. These will be locally operated, governed by community representatives, reduce reliance on vulnerable long-distance transmission systems and avoid destruction of California's farmlands, plains, deserts and species habitats. The cost of generating electricity by these systems is around 8 to 10 cents per kilowatt hour. The potential cost advantage arises because long-distance transmission is no longer necessary, which now comprises more than half of the retail price of electricity.

Community-based systems could be built to serve distinct blocks and neighborhoods, avoiding the need to use the larger grid, and if cities and towns created their own municipal utilities to contract with community-based energy systems, the utilities would escape state regulation as well as the cost of transmission. If half of the 200 GW were community energy systems, it would require 10,000 ten-megawatt microgrids, or 500 per year, to reach the state's 2045 goal. Building these systems would provide well-paying, local jobs, low-cost electricity and they could even fund local basic income programs. While the cost would not be negligible, green bond financing could be paid off within 10 or 15 years. This model allows for real energy equity and community wealth building opportunities long term.

The state's investor-owned utilities—PG&E, Southern California Edison and San Diego Gas & Electric—give lip service to DERs but would prefer to procure renewable electricity through long-term supply contracts from large, centralized solar and wind farms, built on agricultural and desert lands and offshore. It is what keeps them at the center of the electrical universe and their shareholders fat and happy.

A decentralized electricity system with many distributed energy resources (DER) appears to them to be a direct threat to wires on which most of their revenues depend. The utilities will lose their arbitrage between the wholesale cost of renewable power and what they can sell it for. Most threatening is the possibility

that rising retail prices of electricity, driven by the costs of maintaining and expanding the state's transmission system, will motivate community and rooftop solar generators to leave the grid and no longer rely on the utilities at all. At some point, it will simply make greater economic sense to generate locally and rely on battery storage for the times when the sun is not shining than to stay connected.

There are others who look on DERs with disfavor. Recently, some critics have claimed that well-off homeowners, who are compensated for the surplus electricity they generate, are being subsidized by low-income customers who cannot afford rooftop solar. Moreover, if individual and community DERs leave the grid, operating costs of the grid will be paid by those without solar. Indeed, some even think solar generators should pay the private utilities for the privilege of generating their own power. There are good reasons to doubt these arguments, but how costs might be distributed is a political and not an economic matter.

The struggle for solar is being played out in two political arenas, the California Legislature and the California Public Utilities Commission. The CPUC, and many legislators, are behaving as close friends of the private utilities, supporting them in the effort to prevent widespread development of small, community based DERs. For the time being money matters. The utilities are large corporations. They make major campaign contributions to most legislators, employ armies of lobbyists in Sacramento, more armies of lawyers and analysts in San Francisco, provide jobs and pensions to tens of thousands of rank and file workers and more-or-less control the system of utility regulation. What they want is usually what they get. By contrast, local solar advocates are fragmented, short on financial resources and lobbying power, and disregarding line workers, unions and pensions. Nevertheless, what they offer is an alternative vision of California's energy future, one that is locally controlled, democratic and equitable. It is visionary but not impossible. Politics will decide.

And who will win this struggle? As several historical figures were reputed to respond when asked what they thought of the French Revolution, "It is too soon to tell."

*This four-part series on the Future of Electricity in California was researched and written by the staff of the Sustainable Systems Research Foundation, a non-profit green think tank and project incubator in Santa Cruz, California. The authors are fully responsible for what appears here but wish to thank everyone who offered comments and suggestions.*