

---

# THE WALL STREET JOURNAL.

This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers visit <https://www.djreprints.com>.

<https://www.wsj.com/articles/steps-to-reduce-the-risk-of-wildfires-in-california-11574209097>

BUSINESS | ENERGY | JOURNAL REPORTS: ENERGY

## Steps to Reduce the Risk of Wildfires in California

Three experts share their views on what policy makers can do




California's devastating wildfires of the past two years have policy makers searching for answers. PHOTO: PHILIP PACHECO/AGENCE FRANCE-PRESSE/GETTY IMAGES

*By Ken Wells*

Nov. 19, 2019 7:18 pm ET

California's devastating 2019 wildfires have slowly been brought under control. But they could be just a taste of what's to come, and not just in California, if forecasts for increasing heat and dryness continue, and as homes and other new construction continue their spread into formerly undeveloped areas.

San Francisco-based PG&E Corp. [PCG 4.53%](#)  is struggling to ensure its electrical systems' safety. It angered customers earlier this fall by shutting off power to millions in an attempt to prevent further wildfires. Yet despite the shut-offs, it says its lines may have sparked several of the recent fires.

Is there any way for policy makers to prevent the next wildfire crisis? We asked three experts how the state and federal governments could address the problem: James L. Sweeney, professor, management science and engineering, Stanford University, and senior fellow of the Hoover Institution; Alexandra “Sascha” von Meier, director, Electric Grid Research, California Institute for Energy and Environment at the University of California at Berkeley; and Michael Wara, director, Climate and Energy Policy Program, Woods Institute for the Environment, Stanford University. Edited excerpts of their conversation follow:

**WSJ:** *Critics complain that California’s forest management is a mess and that controlled, or prescribed, burns that could help are underused for a variety of reasons—air quality, health concerns and green resistance, among them. Do controlled burns work?*

**MR. WARA:** I view the fire problem in California as really two problems—a wildland fire problem where prescribed fire is a critical piece of the solution, and a home-ignition problem, where it may be less helpful. [Experts recommend a 150-foot fire-resistant perimeter around the area known as the home-ignition zone.] We need to remember that the wildfire “crisis” in California is not really due to acres burned. It’s due to structures destroyed and lives lost. Treating the causes of wildfires in sparsely populated areas may or may not contribute to a reduction in the loss of lives and the destruction of communities.

It’s important to realize that there are big trade-offs here. We currently spend \$200 million in California to get through about 33,000 acres per year for prescribed fire and forest thinning. CalFire says it wants to treat 500,000 acres. Would it make more sense to spend the money on that or on home-hardening? [Making homes more fire-resistant by, say, replacing flammable wooden-shingle roofs with metal ones.] Or a mix? We need analysis to figure that out.

I’d add that barriers to the use of prescribed fire have been reduced over the past several years due to policy change in California. That makes it a much more available tool for managing forest lands.

**WSJ:** *Wildfires have always been part of the natural cycle. What’s different now is the huge number of commercial and residential structures in the wilderness-urban interface that didn’t exist 50 or 60 years ago. Is there anything the state could or should*

*do in terms of planning and zoning to mitigate fire risks?*

**MS. VON MEIER:** I don't have a good answer for this, but it does raise another difficult issue about equity. This is something to deal with as we face other climate impacts, like hurricanes and flooding. To what extent should society subsidize living in certain areas?

**MR. WARA:** We need to work toward a situation where the economics of development don't favor building in the wilderness-urban interface. That is the case today for multiple reasons that have to do with local government and developer incentives. One solution is reducing the economic benefits of that land-use choice by requiring any new wilderness-urban interface construction be much safer. But we also need to address the barriers to building in safe locations in already developed areas near jobs.

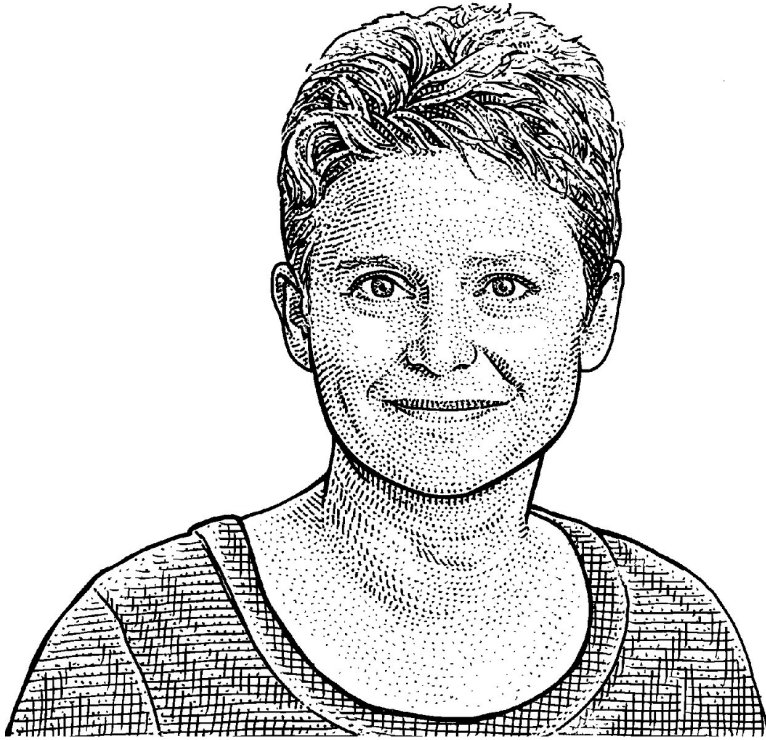
**MR. SWEENEY:** Local and statewide building codes should require truly fire-defensible spaces around buildings. At wilderness-urban interfaces, all roofs should be made of fireproof, or at least fire-resistant, materials. Ventilation must be redesigned so as to *not* draw burning embers into the home. Disclosures of fire risk need to be part of any sale, rental or lease to provide motivation for avoiding risky areas and for hardening buildings.

Local authorities need to plan communities with multiple roads in and out, so as to reduce risk of trapping people. Community shelters need to be built in areas and of materials to make them truly safe places to which people can flee. And emergency-warning systems need to be enhanced.

**MR. WARA:** I agree with everything Jim says but many communities—close to 2.5 million homes in California—have already been built without these things. What we do about these homes and towns in wildfire country? Who pays for the extra access road that will be needed once in five decades? Who pays to harden homes and install attic vents for low-income residents?

**WSJ:** *The grid is an obvious culprit in fires in recent years. Critics say maintenance has lagged, and some blame pressure on utilities to spend more on renewables and long-term climate goals at the expense of maintenance that might prevent fires.*

**MS. VON MEIER:** We can do a number of things to reduce wildfire risk around high voltage, but none of them is perfect. Obviously, vegetation management is a top priority. But that still doesn't help when the wind is ripping wires off the poles. PG&E may have made many mistakes, but high voltage, dry grass, and high winds are just an inherently dangerous combination.



Alexandra von Meier

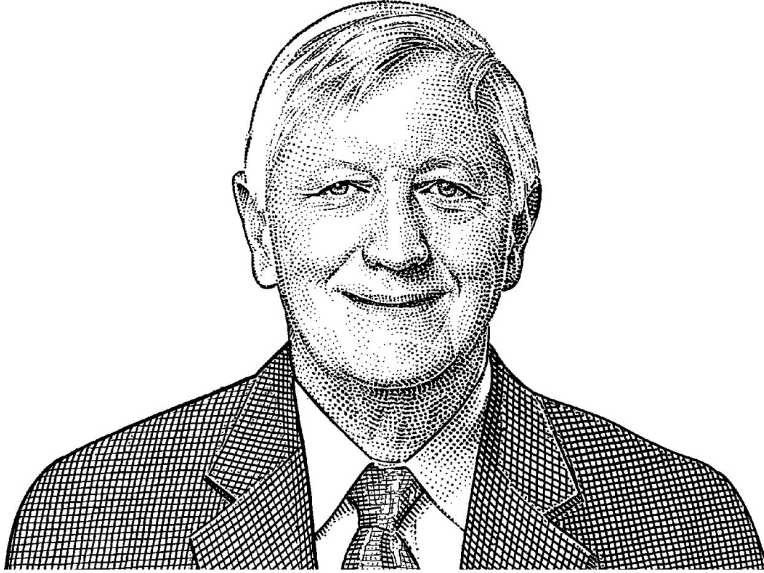
**MR. WARA:** I don't buy the argument that we've spent on renewables and cut costs on maintenance. I don't think the evidence on contributing factors to rate increases supports this thesis. On the other hand, it is definitely true that electricity in the presence of this risk is going to get more expensive. The way we built and maintained the grid over the past century is just not working anymore in California, and we are going to have to manage it for a much lower tolerance for failure. That's where the sensors and the

hardening come in. So future spending is going to have to go up as we focus on ensuring higher-quality performance from this enormous, distributed machine.

We need to start to talk seriously about how to pay for this outside of rates. It seems feasible to pay in rates for the required grid hardening. But much more than that is going to drive widespread grid defection by high-income and moderate-income homeowners given where California electricity bills already are. We need to look to taxpayers, not just ratepayers, to handle a substantial portion of these costs.

**MS. VON MEIER:** Agreed, Michael. I don't see how putting any utility on the defensive will help solve the problem of guiding smart long-term investments. A litigious approach isn't going to bring us closer to consensus about a coherent strategy for minimizing harm under big uncertainty in the face of climate change. And that applies not just to the electricity sector.

**WSJ:** *Power shutdowns help guard against grid-caused fires. But areas often far from fire danger suffer unnecessary and prolonged outages. Breaking the grid into much*



James L. Sweeney

*smaller parts, small-scale power systems that operate independently from the grid, could make sense. Is there a downside?*

**MR. WARA:** Deployment of microgrids at scale will take time, both because of the scale of the industry in California and because of regulatory and market barriers that must be overcome. It can be hard to finance a microgrid for a downtown business district because the different businesses are not all owned by the same entity and also have varying credit

quality. Interconnection has been challenging for reasons that have partly to do with safety and partly to do with incumbent utilities protecting their business. We need to lower these barriers as quickly as possible while the industry scales in California.

**MR. SWEENEY:** There is a high-risk cost of moving electricity long distances to points of use. And those costs are increasing with the longer dry season and the increased numbers of buildings in fire-vulnerable areas. So costs are increasing *and* becoming more apparent.

A rational response is to 1) reduce electricity transmitted long distances, by generating more locally and creating microgrids; 2) reduce the likelihood of fires caused by electricity by hardening transmission and distribution lines, including undergrounding in some places; 3) reduce the likelihood of fires caused by electricity by de-energizing power lines when high winds are probable; and 4) reduce the costs of blackouts through more backup generation and other very local alternative sources of emergency electricity services.



Michael Wara

**MS. VON MEIER:**

Technically, it's very difficult to operate a section of an existing utility distribution system separately as a power island; it just wasn't designed for that. The problem is that you have to regulate frequency and voltage, but you don't have any control over the demand side of the equation. It would be easier if the utility had a way to throttle the power to each customer, but they generally don't. For example, smart meters in California can't be remotely shut off. This goes back to the trust problem. It's basically

illegal, in all 50 states, to run a wire across the fence or across the street to your neighbor's house and sell them electricity. There are good reasons for this historically—protecting the monopoly utility's turf, as well as public safety.

With technology available today, there is a great opportunity to revisit these restrictions—and in light of the recent events, there may be some political appetite. Multicustomer microgrids could either use the utility-owned infrastructure, augmented with appropriate equipment for electrical protection and control, and some appropriate legal arrangement that protects each party. Alternatively—the easier approach—you'd build a separate microgrid that connects multiple customers behind a single point of interconnection.

**WSJ:** *Would public ownership of PG&E be better for providing safe and reliable power service?*

**MS. VON MEIER:** I don't see PG&E's travails in managing wildfire risk as a direct consequence of investor ownership. Whoever owns that infrastructure in that terrain

under the given weather conditions is going to face a huge challenge and will have to pass on the costs somehow.

**MR. WARA:** There are well-run investor-owned utilities and poorly run ones. And there are well-run municipal-owned utilities and poorly run ones. Who owns a utility is not determinative of its quality. There are potential savings from municipalization both because of tax advantages and because of the avoided return to equity. But there are also risks to public balance sheets and the other things they pay for (schools, safety, roads) that are created by moving the wildfire risk to a government entity.

**MR. SWEENEY:** I don't believe that the state will be as competent as PG&E in running a utility system. It will be more dependent on political decisions. The best evidence goes back to the so-called California electricity crisis of 2000 and 2001. It was really an electricity crisis for the entire western third of the U.S. and a financial crisis for California. The financial crisis came about primarily because of bad regulatory decisions by the state of California. Political motivations were dominant in the bad regulatory decisions. Thus I believe that bringing PG&E under state control would be a recipe for making things worse.

**WSJ:** *What immediate steps could California, and/or the federal government, take to reduce wildfire risk?*

**MS. VON MEIER:** First of all, don't leave the Paris climate agreement. Second, support distribution-infrastructure upgrades that support both resilience and renewables. Technically, I think the most urgent step is making sure people's essential needs are taken care of next time the grid goes down.

In California, we heard from medical patients who feared for their lives when the power went out (for example, people who depend on a dialysis machine), and from families for whom a week's worth of spoiled food in the fridge is a major financial blow. To a lot of us, a power outage might be a business loss or a minor personal inconvenience, but nobody should have to fear a power outage as an existential threat.

Neighborhood emergency support centers should have solar photovoltaic generation with storage, not just diesel generators, because we need to be prepared for possible scenarios where you can't get fuel. With how cheap PV and batteries are today, and with how quickly they can be installed, there's no excuse for not making sure the most vulnerable members of society are taken care of.

**MR. SWEENEY:** Absent serious attention to global climate change, we can expect the trend to continue—longer dry seasons in California and other parts of the U.S. and thus continuing threats of wildfires.

Second, California needs to get more serious about wilderness-urban interfaces. Some areas have had and will continue to have wildfires, and some areas should never be built up. These involve state and local building codes, for new and existing buildings.

Utilities need to start processes of hardening their transmission and distribution lines. In some places undergrounding will be crucial. Insulating transmission lines can be helpful. And an improved process for deciding when to de-energize power lines is important.

*Mr. Wells is a former Wall Street Journal reporter in Chicago. Email him at [reports@wsj.com](mailto:reports@wsj.com).*

---

SHARE YOUR THOUGHTS

---

*What do you think should be done to reduce the risk of wildfires in California? Join the conversation below.*



Copyright © 2019 Dow Jones & Company, Inc. All Rights Reserved

This copy is for your personal, non-commercial use only. To order presentation-ready copies for distribution to your colleagues, clients or customers visit <https://www.djreprints.com>.