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ADVANCING THE IMPERATIVE TO STOP CATASTROPHIC FIRE

WHILE OPTIMIZING RELIABILITY AND RATEPAYER PROTECTION

In Pacific Gas and Electric Service Territory

SUMMARY

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Introduction

Electric utility equipment too often ignites catastrophic wildfires in California or is shut down to prevent them, while the investment required to effectively address the risk threatens to overburden vulnerable households and small businesses.[1]

The scale of the problem is outsizing fire suppression capacity, costing the public and utilities billions of dollars, disrupting the insurance industry, and damaging public health with stress, toxic air and degraded water far beyond the fire footprint.

Achieving the non-negotiable necessity to stop catastrophic wildfires takes a coordinated, society-wide effort. Electric utilities play central roles, both as sources of ignition and as key leaders in advancing long-term risk reduction and resilience.

Fulfilling this role requires electric utilities in high fire prone areas to invest at unprecedented scale and speed over many years. At the same time, the utilities must ensure that wildfire mitigation costs do not drive vulnerable households to lose access to essential energy service – a risk with its own serious public health consequences.

Although the simplest and least expensive way to achieve safety and affordability is to turn off the power during fire conditions, minimizing disruptions to customers and fulfilling regulatory demands to phase out preventive power shutoffs require utilities to simultaneously reduce preventive outages and eventually eliminate them.

[1] For consistency with regulatory guidelines, this report assumes the Office and Energy Infrastructure Safety (Energy Safety) definition of "catastrophic fire," which is fires that caused at least one death, damaged over 500 structures, or burned over 5,000 acres. See: Energy Safety, Wildfire Mitigation Plan Guidelines @ p. 25; February 2025

This presents a complex, interdependent *trilemma*: Utilities must stop their equipment from igniting catastrophic wildfires, end related outages, and preserve affordability for the customers least able to bear rising costs. In effect, this is like rebuilding the plane while flying– and ensuring that everyone can still afford a seat.

In August 2025, an in depth research study was completed at UC Berkeley Goldman School of Public Policy that examined this trilemma using PG&E as a case study. As California's largest electric utility serving many high wildfire risk communities, the utility is at the forefront of navigating this challenge. Following disastrous fires sparked by their equipment in 2017-18, which cost dozens of lives and billions of dollars that drove the utility into bankruptcy, PG&E took a public stand that catastrophic wildfires shall stop.[2] In 2021, the utility announced it would underground 10,000 miles of distributed power lines in fire prone areas. They project this to permanently reduce system-wide risk by 76-77% [3], with the residual risk addressed by other mitigations, such as insulating overhead lines with covered conductors, managing vegetation, deploying advanced sensor, visibility, and modeling technologies, targeting transmission lines for risk reduction, and shutting off power as a last resort.

The study evaluated four alternative approaches to address the trilemma:

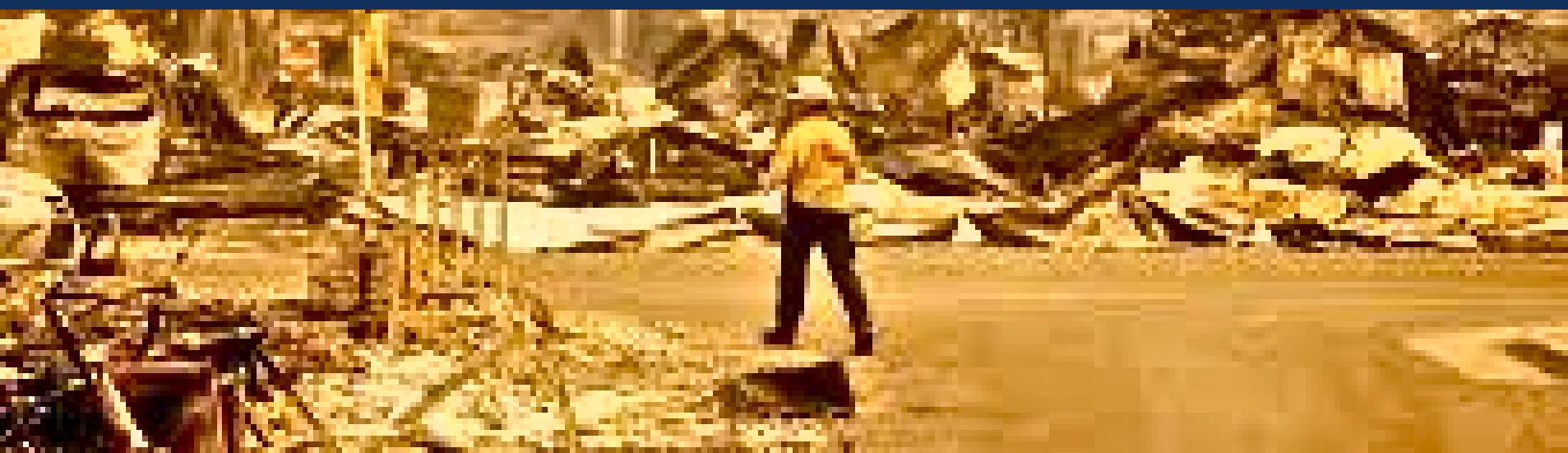
1. **Continue Present Trends –** Maintain PG&E's current wildfire mitigation, outage reduction, and affordability plans.

2. **Accelerate Undergrounding with Added Consumer Protections –** Speed progress toward PG&E's 10,000-mile undergrounding target while expanding protections for vulnerable households and businesses.

3. **Reduce Undergrounding, Expand Mitigations With Lower Capital Costs –** Rely more heavily on EPSS and covered conductors in place of future undergrounding.

4. **Expand Resilience Partnerships –** Complement PG&E's existing mitigation strategy with broader partnerships to reduce catastrophic flame spread risk beyond utility rights-of-way.

{2] PG&E, 2023–2025 Wildfire Mitigation Plan (WMP) @ p. 2; February 13, 2025
[3]Ibid. @ p. 419



Weighing the Criteria - Summary of Outcomes

To evaluate the alternatives, each was assessed using **five criteria: 1) effectiveness at reducing catastrophic fire risk (short and long term), 2) cost effectiveness – i.e., cost of implementation vs. avoided cost of catastrophic fire and obsolete prevention measures, 3) system reliability 4) feasibility, and 5) co-benefits.**

These criteria provide high-level estimates and were not intended to duplicate or replace the in-depth, modeling-driven analyses used in PG&E's formal wildfire mitigation planning. Given limitations in available data, the evaluation relies on a directional approach to compare the expected impact of each alternative.

Each alternative was scored across the criteria based on its estimated potential to deliver meaningful impact, rather than solely in relation to the status quo.

Each alternative was rated against this set of criteria using a simple 1–5 scoring, with each criterion weighted according to its relative importance and expected impact going forward.

For each criterion:

- A score of **1** is assigned to the alternative that is estimated to be the least impactful among the four.
- A score of **5** is assigned to the alternative that is estimated to be the most impactful among the four.
- Scores of **2–4** reflect gradations between those two ends.

Summary of score meanings:

1 – Least likely to be impactful
2 – Modestly likely to be impactful
3 – Moderately likely to be impactful
4 – Highly likely to be impactful
5 – Most likely to be impactful

Importantly, a score of 1 does not mean an alternative has no value—only that it is estimated to have the least relative impact compared to the others. Similarly, a score of 5 does not imply an alternative is flawless, but rather that is expected to be the most impactful relative to the others.

Summary of Outcomes: 1-5 Scores + Weighted Scores for Alternatives

ALTERNATIVE	Let Present Trends Continue		Accelerate Undergrounding Interim Targets + Add Ratepayer Protections		Decrease Undergrounding Target + Increase Less Expensive Mitigations (EPSS and/or Covered Conductor)		Add More Resilience Partnerships to Current Plan	
CRITERIA	1-5	Weighted	1-5	Weighted	1-5	Weighted	1-5	Weighted
Effectiveness at Reducing Catastrophic Wildfire risk (30%)								
Short-term (10%)	2	**20**	2	**20**	1	**10**	5	**50**
Long-term (20%)	3	**60**	5	**100**	1	**20**	4	**80**
Cost Effectiveness - Cost of Implementation Relative to Potential to Avoid Catastrophic Wildfire (30%)	2	**60**	1	**30**	3	**60**	5	**150**
System Reliability (15%)	2	**30**	5	**75**	1	**15**	2	**30**
Feasibility (20%)								
Technical (5%)	4	**20**	1	**5**	5	**25**	3	**15**
Policy/Regulatory (5%)	3	**15**	1	**5**	3	**15**	2	**10**
Financial (5%)	3	**15**	5	**25**	1	**5**	2	**10**
Social (5%)	4	**20**	1	**5**	3	**45**	5	**25**
Co Benefits (5%)	3	**15**	4	**20**	1	**5**	5	**25**
TOTAL WEIGHTED SCORE	**255**		**285**		**200**		**395**	

Recommendation: A Hybrid Approach

Based on the five criteria described, the following hybrid approach is recommended to build on PG&E's existing wildfire mitigation efforts, in order to further optimize catastrophic fire prevention and outage reduction, while protecting vulnerable ratepayers from undue burden resulting from the expense.

1 Accelerate Interim Prioritized Undergrounding Targets

Because burying distribution lines is the most effective and only permanent way to reduce risk of catastrophic fire sparked by utility distribution equipment, particularly in high wind conditions that tend to drive massive wildfires, and because a phased in approach can help reduce rate shocks, aim to complete at least 600 miles per year by 2029, prioritizing areas where safety is most at risk, high consequence conflagrations are most likely, and other ignition-reducing mitigations (EPSS and covered conductors) are less effective, due to factors such as high wind conditions or trees that risk falling on overhead lines.

2 Expand Resilience partnerships

Recognizing that catastrophic wildfires require both an ignition source and conditions for flame spread – and that undergrounding is a long-term solution – expand resilience partnerships that pool shared resources between utilities, community groups, and nonprofits , such as partnering on targeted vegetation management to reduce ember spread and building local firefighting capacity. Such partnerships appear to be readily promising, cost-effective complement to address unmitigated risk on the distribution and transmission systems without relying on outages (Guidehouse, 2025). As an added bonus, these partnerships can help limit flame spread from any ignition source, including non-utility fires that still threaten PG&E's system, financial standing, and customers, while undergrounding progresses over time.

3 Add More Ratepayer Protections to Offset Mitigation Costs

Offset the cost impacts of accelerated undergrounding on vulnerable ratepayers through measures, such as:

- continuing to increase operational efficiencies, which have already reduced costs by more than 22% from 2021-2025.
- collaborating with the insurance industry on integrating undergrounding and other mitigation into their risk models to reduce premium-setting and lower overall costs to households and businesses.
- deploying cost-lowering plowing and trenching technologies where possible.
- expediting and streamlining the Caltrans permitting process for emergency undergrounding, which was identified in interviews as a major time and cost barrier.
- leveraging or adding state and federal land agencies' exemption processes where possible that apply to undergrounding in high risk areas.
- securitizing authorized funding for accelerated undergrounding over the maximum period.
- bolstering Family Electric Rate Assistance (FERA) enrollment, which has lagged among IOUs.
- advancing strategically located microgrids and remote grids as targeted, complementary resilience measures that enhance reliability, protect vulnerable customers, and reduce reliance on costly undergrounding, especially in low load areas.
- phasing in the accelerated undergrounding pace, to avoid price shocks, but starting no later than 2029 to minimize safety risk
- enabling an opt-in "express lane" for high consequence fire prone communities which marshals added resources through local-cost share.
- monitoring the outcome of CPUC proceedings on income-graduated fixed charges.
- updating the Underground Benchmarking Report.

4 Increase Transmission System Safety

Since transmission equipment-sparked catastrophic fires have ignited within a 50 foot perimeter of poles, selectively and proactively accelerate and expand vegetation clearing around poles to 50+ feet, coupled with monitoring and re-clearing to catch regrowth and drying out throughout the year as needed. Additionally pursue hardening, repair, and replacement efforts as needed—such as real-time monitoring, critical span undergrounding or fire weather automation, at the most high-risk transmission system locations, in order to reduce tail risk exposure and minimize the potential for high-consequence fire events that could materially impact PG&E's financial stability and long-term wildfire risk profile. Consider also implementing scheduled replacement of transmission lines in such locations after a reasonable timeframe of useful life (e.g. 40 years) to avoid risks that have been associated with older equipment.

5 Improve Modeling to Capture All Critical Risks

To better ensure mitigation investments succeed in stopping catastrophic fire, prioritize improving modeling to more precisely inform mitigation locations and types, including fully capturing risks of structures as fuel into wildfire spread modeling, which is critical to help prevent conflagrations in densely populated areas bordering the wildland urban interface.