Up in Flames: Containing Wildfire Liability for Utilities in the West

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I. INTRODUCTION

On the evening of October 8, 2017, dry winds in Northern California were gusting at a speed of over fifty miles per hour.[1] At 11:34 PM, a local resident near the city of Santa Rosa placed a 911 call to report a forest fire,[2] claiming to have seen a "tree illuminate when the conductors arced" on a nearby power line.[3] Within hours, the region's strong winds had consolidated this fire with two other newly started fires into a complex blaze that became known as the Redwood Fire.[4] The Redwood Fire tore through Mendocino County, California, engulfing more than 35,000 acres of land and claiming the lives of nine nearby residents.[5] CAL FIRE, California's state fire-fighting agency, investigated the causes of Redwood Fire and eventually discovered two points of ignition resulting from contact between vegetation and electric power lines.[6]

Among the Redwood Fire's victims were Kai and Kressa Shepherd.[7] Just after midnight on October 8, the Shepherd family tried to evacuate the area when their car caught fire.[8] Kai Shepherd, age fourteen, attempted to flee on foot but could not escape the flames. Kai's parents and sister, Kressa, were eventually found near their car with severe burns.[9] Kressa

1. Clifford F. Mass & David Owens, *The Northern California Wildfires of October 8-9, 2017: The Role of a Major Downslope Wind Event*, 100 BULL. AM. METEOROLOGICAL SOC'Y 235 (2019), https://journals.ametsoc.org/doi/pdf/10.1175/BAMS-D-18-0037.1.

2. CAL. DEP'T OF FORESTRY & FIRE PROT., INVESTIGATION REPORT: REDWOOD INCIDENT (Oct. 8, 2017), https://www.tellusventure.com/downloads/safety/calfire_investigation_report_redwood_fire_4jun2018.pdf.

3. *Id.* at 17.

4. *Id.* at 3.

5. Press Release, Cal. Dep't of Forestry & Fire Prot., CAL FIRE Investigators Determine Causes of 12 Wildfires in Mendocino, Humboldt, Butte, Sonoma, Lake, and Napa Counties 1 (June 8, 2018), https://www.fire.ca.gov/media/5100/2017_wildfiresiege_cause.pdf.

6. CAL. DEP'T OF FORESTRY & FIRE PROT., s*upra* note 2, at 13.

7. Michael Cabanatuan, *Kai Shephard, 14, Dies Trying to Outrun Redwood Valley Fire*, S.F. CHRON. (Oct. 16, 2017, 2:45 PM), https://www.sfgate.com/bayarea/article/Kai-Shepherd-14-died-trying-to-outrun-Redwood-12277350.php.

8. *Id.*

9. *Id.*

passed away several weeks later as a result of her injuries. John and Sara Shepherd survived only to face the pain of burying their two children.

The circumstances surrounding the Redwood fire are not unique to Mendocino County. Between October 8 and 9, 2017, twelve wildfires originating in Northern California were eventually blamed on utility equipment failure or vegetation contacting power lines.[10] The Tubbs fire, which also started on October 8, became the second deadliest fire in California's history, claiming twenty-two lives and damaging over 5600 homes. It is estimated that insurance companies paid $12.5 billion for property damages stemming from these fires.[11] Later dubbed the "Fire Siege," these October fires scorched a total of 245,000 acres, requiring 11,000 firefighters from numerous states and countries.[12]

Public outcry and controversy have followed in the aftermath of California's Fire Siege. Nearly one year after the disaster, CAL FIRE released its report on the Tubbs fire showing that a private homeowner's electrical system—and not utility equipment—caused that fire, which ultimately caused at least $11 billion in property damage.[13] Nonetheless, the large California utility, Pacific Gas & Electric (PG&E), determined that its liabilities from other Fire Siege fires were insurmountable.[14] In early 2019, the massive utility company filed for bankruptcy, initiating what is likely to be the largest utility bankruptcy proceeding in U.S. history.

Wildfires have long had significant economic, environmental, and political impacts throughout the West, but those impacts have grown substantially in recent years. Although countless factors are contributing to the growing costs of western wildfires, much of the financial burden is falling on electric utilities. As PG&E's recent bankruptcy filing shows, a strategy of largely relying on electric utilities to spread wildfire-related costs could have major adverse impacts on electricity markets in the West. However, ensuring that electric utilities internalize the costs of actions they

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10. CAL. DEP'T OF FORESTRY & FIRE PROT., s*upra* note 2.

11. Nichola Gordon & Sharon Bernstein, *PG&E Cleared of Liability in 2017 California Wildfire, Bankruptcy Still Seen*, INS. J. (Jan. 28, 2019), https://www.insurancejournal.com/news/west/2019/01/28/515910.htm; *see* CAL. DEP'T OF FORESTRY & FIRE PROT., INVESTIGATION REPORT: TUBBS INCIDENT 15 (Oct. 8, 2017), http://www.documentcloud.org/documents/5693976-Cal-Fire-Tubbs-Fire-Investigation-Report-20190124.html.

12. CAL. DEP'T OF FORESTRY & FIRE PROT., s*upra* note 2.

13. Press Release, Cal. Dep't of Forestry & Fire Prot., CAL FIRE Investigators Determine the Cause of the Tubbs Fire (Jan. 24, 2017), https://www.fire.ca.gov/media/5124/tubbscause1v.pdf.

14. Ivan Penn, *PG&E's Bankruptcy Filing Creates 'a Real Mess' for Rival Interests*, N.Y. TIMES (Jan. 29, 2019), https://www.nytimes.com/2019/01/29/business/energy-environment/pge-file-bankruptcy.html.

take that contribute to forest fires is also crucial to addressing the West's growing wildfire problem.

This Article highlights the growing connection between wildfire liabilities and electricity transmission and distribution in the West. It uses this data to suggest ways governments could more fairly and efficiently spread wildfire-related costs among contributors to the problem. Through bold and innovative policymaking, it is possible to compel those contributors to internalize more of the costs of their activities and to thereby slow the growth of wildfire liabilities and preserve the solvency of electric utilities in the West.

Part II of this Article describes the general growth of wildfire costs in the western United States over recent years and how electric utilities are increasingly becoming overburdened by their share of these costs. Part III describes potential means of reducing wildfire costs in the West through a collaborative prevention system that relies on increased cooperation among private, state, and federal stakeholders. Part IV of this Article addresses how costs could be fairly apportioned after fires have occurred. If adopted, these proposals could provide significant relief to western utilities, reduce the overall impact of wildfires, limit property damage, and save lives.

II. GETTING FIRED UP

Wildfires are increasingly common and costly throughout the western United States and are imposing unprecedented liability risks on the region's electric utilities. The U.S. Forest Service (USFS) reported that at least 345 fires were started between 2012 and 2013 by power lines contacting trees on land it oversees. Between 2012 and 2016, wildfires burned almost 2 million acres of federal land in California alone.[15] And the U.S. Department of Agriculture (USDA) reported that the USFS spent over $2 billion, or 55% of its annual budget, on wildfire-related expenses in 2017.[16] PG&E's financial dilemma is the most extreme illustration of how wildfires are crippling the private sector. For the first fiscal quarter of 2019, PG&E posted a profit of $132 million.[17] Meanwhile, PG&E paid

15. Every year, CAL FIRE releases details of intrastate fire incidents. *See Incidents Overview*, CAL FIRE, https://www.fire.ca.gov/incidents/ (last visited Aug. 12, 2019).

16. Press Release, U.S. Dep't of Agric., Release No. 0112.17, Forest Service Wildland Fire Suppression Costs Exceed $2 Billion (Sept. 14, 2017), https://www.usda.gov/media/press-releases/2017/09/14/forest-service-wildland-fire-suppression-costs-exceed-2-billion.

17. J.D. Morris, *PG&E Profits Drop Drastically Because of Camp Fire, Bankruptcy*, S.F. CHRON. (May 2, 2019, 3:12 PM), https://www.sfchronicle.com/business/article/PG-E-profits-drop-drastically-because-of-Camp-13813427.php?psid=hmgfQ.

approximately $192 million towards Camp Fire damages during the same quarter. Indeed, wildfire-related costs and liabilities are increasingly consuming budgets and threatening the solvency of electric utilities throughout much of the West.

A. Electricity Infrastructure in the West

Western utilities bear liability risks related to wildfires because their equipment is often responsible for igniting these fires.[18] Electrical infrastructure is continually expanding into remote corners of the West's vast wilderness. Pushing electrical equipment into these areas adds to the risk of igniting a catastrophic fire.

Expanding electricity access into remote areas has long been an American priority. Prior to 1936, only 11% of rural areas received electrical service.[19] But then, as part of President Roosevelt's New Deal, Congress sought to aggressively expand electricity in rural America by enacting the Rural Electrification Act of 1936 (REA).[20] The REA authorized the federal government to provide low cost loans for rural communities to organize nonprofit electric cooperatives and to take other steps to create a robust web of electrical systems throughout the nation.[21] Today, the REA lives on through the USDA's Rural Development

18. The expansion of development into the Wildland User Interface increases the frequency of human caused fires (including powerlines). Additionally, the frequency at which powerlines are responsible for igniting wildfires has led to the California Public Utility Commission to designate many of these rural areas as "high fire threat areas." *See* Volker C. Radeloff et al., *Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk*, PNAS (Mar. 27, 2018), https://www.pnas.org/content/pnas/115/13/3314.full.pdf (citing Jennifer K. Balch et al., *Human-Started Wildfires Expand the Fire Niche Across the United States*, PNAS (Mar. 14, 2017), https://www.pnas.org/content/pnas/115/13/3314.full.pdf)); *see also* Cal. Pub. Utils. Comm'n, Decision 17-12-024, Order Instituting Rulemaking to Develop and Adopt Fire-Threat Maps and Fire-Safety Regulations 5 (Feb. 5, 2018), docs.cpuc.ca.gov/PublishedDocs/Published/G000/M207/K303/207303220.doc.

19. Joel A. Youngblood, Note, *Alive and Well; the Rural Electrification Act Preempts State Condemnation Law:* City of Morgan City v. South Louisiana Electric Cooperative Ass'n, 16 ENERGY L.J. 489 (1995).

20. *Rural Electrification Act*, NAT'L PARK SERV., https://www.nps.gov/home/learn/historyculture/ruralelect.htm (last updated Apr. 10, 2015).

21. *Id.*

agency,[22] and it is estimated that 99% of the U.S. population has access to electrical power.[23]

To meet the West's complex electricity demands, utilities rely on the transmission of power across great distances. This power is often transmitted at a high voltage (between 110kV and 765kV) via massive transmission lines.[24] As high-voltage electricity nears a locale, it travels through a substation where transformer equipment steps it down to a lower voltage.[25] From the substation, lower-voltage electricity travels through a grid of smaller distribution lines to reach retail customers.[26] U.S. power grids contain an estimated 180,000 miles of high voltage transmission lines and 5.5 million miles of distribution lines.[27] This extensive infrastructure system is continuously monitored by both state and federal regulators. The Federal Energy Regulatory Commission (FERC) is responsible for regulating wholesale, interstate electricity transactions and maintenance oversight through its enforcement agency, the North American Electric Reliability Corporation (NERC).[28] State governments also regulate utilities through public utility commissions or corporation commissions (PUCs). These PUCs oversee the siting of power lines, establish standards for maintenance and operation of electrical equipment, set the rates that utilities charge, and otherwise regulate utilities.[29]

The West's electrical infrastructure is particularly complex because of its abundance of public lands. The federal government controls roughly

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22. The USDA's Rural Development agency administers the program through the Rural Utilities Service (RUS) division. The RUS administers the loans for the construction of distribution and transmission lines, as well as the construction of generation facilities. The program also supports "demand-side management, energy efficiency, and conservation programs, and on-and off-grid renewable energy systems." *Rural Utilities Service*, U.S. DEP'T AGRIC., www.rd.usda.gov/about-rd/agencies/rural-utilities-service (last visited Oct. 31, 2019).

23. Youngblood, *supra* note 19, at 489.

24. *How the Electricity Grid Works*, UNION CONCERNED SCIENTISTS (Feb. 7, 2015), https://www.ucsusa.org/clean-energy/how-electricity-grid-works#references.

25. *Id.*

26. U.S. DEP'T OF ENERGY, OFFICE OF ELEC. DELIVERY & ENERGY RELIABILITY, DOE/OE-0017, UNITED STATES ELECTRICITY INDUSTRY PRIMER 13-16 (July 2015), https://www.energy.gov/sites/prod/files/2015/12/f28/united-states-electricity-industry-primer.pdf.

27. A complete and accurate mileage number in western powerlines is difficult to ascertain because of a lack in uniformity in reporting and an overlap in agency reporting. The Department of Energy states that as of 2015, there were over 360,000 miles of *Transmission* lines, with over 180,000 miles of *high voltage lines*. *See id.*; *see also* Jennifer Weeks, *U.S. Electrical Grid Undergoes Massive Transition to Connect to Renewables*, SCI. AM. (Apr. 28, 2010), https://www.scientificamerican.com/article/what-is-the-smart-grid/ (stating the grid comprises 200,000 miles of high-voltage transmission lines and 5.5 million miles of distribution lines).

28. Jeff Dennis, Fed. Energy Regulatory Comm'n, *Electric Transmission 101: Regulation*, https://www.eesi.org/files/070913_Jeff_Dennis.pdf (last visited Jan. 27, 2020).

29. *Id.*

47% of all land in the West.[30] In Oregon, Utah, and Nevada, a majority of all land is federally controlled.[31] Accordingly, much of the West's system of transmission lines crosses through federal public lands. Western utilities must secure federal authorization to operate equipment on those lands. Such authorizations are largely granted through easements or "rights-of-way" (ROWs). The majority of ROWs are granted by the Department of the Interior (DOI) and the USDA (through their various agencies) and are authorized by the Federal Land Policy and Management Act of 1976.[32] ROWs generally permit utility companies to construct and maintain the equipment necessary to service their customers. The USFS and Bureau of Land Management (BLM) alone have granted roughly 71,613 miles of transmission and distribution line ROWs, and lands under their control are home to roughly 3000 authorized electric transmission and distribution facilities.[33]

Transmitting and distributing electric power has always been inherently risky. Most equipment capable of transmitting electricity, including lines, switches, and transformers, present significant fire hazards.[34] Electrical equipment is understandably well-suited to ignite wildfires. If something interferes with a power line's circuit or causes a component of the line to fail, sparks, arcs, or even flames can result.[35] Power lines can malfunction or contact nearby vegetation, causing the lines to fall and spark surrounding fuel sources. Tree branches, leaves, and other plant matter can contact a line and cause arcing, which is an expansive jolt of electricity forming a visible beam.[36] Conductors can heat rapidly, causing them to slap together and eject burning pieces of matter.[37] Lines can lose current, spewing sparks into the air. And load maintenance equipment can malfunction, causing electricity to be wildly thrust in all directions.[38] Given the vast number of power lines that exist throughout

30. Quoctrung Bul & Margot Sanger-Katz, *Why the Government Owns So Much Land in the West*, N.Y. TIMES (Jan. 5, 2016), https://www.nytimes.com/2016/01/06/upshot/why-the-government-owns-so-much-land-in-the-west.html (stating the federal government owns 47% of all land in the West).

31. *Id.*

32. *See* Federal Land Policy and Management Act of 1976 § 501, 43 U.S.C. § 1761 (2011).

33. H.R. REP. NO. 115-165, at 4-5 (2017).

34. *How Do Power Lines Cause Wildfires?,* TEX. WILDFIRE MITIGATION PROJECT, https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires (last visited Aug. 10, 2019).

35. *Id.*

36. FORESTER'S CO-OP, BARREN RIDGE RENEWABLE TRANSMISSION PROJECT WILDFIRE AND FUELS TECHNICAL REPORT 33 (2011), https://openei.org/w/images/f/f1/Barren_Ridge_FEIS-Volume_III_Wildfire_Tech_Rpt_Final_June_2011.pdf.

37. *Id.*

38. *Id.* at 34.

the United States and the myriad of ways a power line can start a fire, utility equipment understandably presents a risk of causing wildfires.

In addition to rural cooperatives, investor-owned utilities (IOUs) and local municipal utilities also provide electricity service throughout portions of the West.[39] IOUs are quasi-governmental entities that enjoy a government-backed monopoly and are in some ways treated as extensions of the state.[40] In exchange for undertaking duties to provide safe and reasonably priced power,[41] IOUs receive exclusive rights to distribute and sell power within specific geographic territories and are essentially guaranteed recoupment of their capital investments plus a reasonable return.[42] This guaranteed return on equity is provided through a cost-based rate setting process based on a complex formula of variables and is intended to compensate investors "for the risk they bear for investing in new facilities."[43] The rate setting process requires IOUs to open their financials to the relevant PUC and cooperate with the agency to determine revenue requirements. After the PUC determines what operating and capital expenses are reasonable and after an open public hearing process, those expenses are ultimately added to the rate base and the revenue requirements are set.[44] After the revenue requirements are set for the IOU, the PUC and the IOU work together to assign the percentages of the revenue requirement to different classes of customers based on consumption.[45] The rates resulting from this process are seen by some as

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39. *Rural Utilities Service*, *supra* note 22.

40. Barham v. S. Cal. Edison Co., 88 Cal. Rptr. 2d 424 (Cal. Ct. App. 1999) (stating that IOUs are considered public utilities for purposes of inverse condemnation proceedings).

41. 29 C.J.S. *Electricity* § 51 (2019).

42. MARYAM GHADESSI, CAL. PUB. UTILS. COMM'N, UTILITY GENERAL RATE CASE—A MANUAL FOR REGULATORY ANALYSTS 4 (Nov. 13, 2017), http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Divisions/Policy_and_Planning/PPD_Work/PPD_Work_Products_(2014_forward)/PPD%20General%20Rate%20Case%20Manual(1).pdf.

43. *Differences Between Publicly and Investor Owned Utilities*, CAL. ENERGY COMM'N, https://www.energy.ca.gov/pou_reporting/background/difference_pou_iou.html (last visited Jan. 27, 2020); *see also 2013 Energy Cost of Capital*, OFF. RATEPAYER ADVOC., http://www.publicadvocates.cpuc.ca.gov/COC.aspx (last visited Mar 21, 2019) (stating that in December 2012, CPUC approved the Rate on Equity for PG&E at 10.40%, SDG&E at 10.30%, Edison at 10.45%, and 10.10% for SoCalGas).

44. Essentially, IOUs are entitled to collect reasonable operating and maintenance expenses plus the base rate. The base rate is the utility's net plant investment (accounting for depreciation) multiplied by an adopted rate by the commission. The "guaranteed profit" that is often thrown around with IOUs is really the return on the net plant investment. *See* GHADESSI, *supra* note 42, at 23.

45. Think of this allocation of the IOU Revenue Requirement as slicing the pie. In California, CPUC allows this pie to be split up into four tiers: (1) residential, (2) commercial, (3) agricultural, and (4) streetlighting. *See What Is a General Rate Case Phase II?*, CAL. PUB. UTIL. COMM'N, https://www.cpuc.ca.gov/General.aspx?id=12141 (last visited Aug. 11, 2019).

providing utilities a nearly guaranteed profit, but if an IOU incurs large unexpected costs from wildfire lawsuits, then much of its profit can potentially be lost.[46]

B. Increasing Wildfire Costs

As highlighted above, wildfires are growing more and more common in the American West. Although the West has long had a "fire season," this season has gradually extruded to the point that it is now practically year-round in some areas.[47] This growing incidence of fires is having a greater and greater financial impact on the region and is increasingly plaguing utilities, whose equipment is sometimes responsible for the worst blazes. Electric utilities have made substantial investments into efforts aimed at preventing fires from igniting, but large service areas and limited resources have limited these efforts' effectiveness. The following materials provide context into why fires are becoming more prevalent and into how utilities are financially burdened by increasingly fire-prone conditions.

1. Worsening Fire Seasons

The West is dryer and hotter than ever before. Experts believe the region's fire season has grown in part because of higher temperatures, extended drought conditions, and increased human activities in remote, rural areas.[48] This confluence of factors has also made these fires a greater threat to people and property.[49] Today's blazes are simply destroying more land and structures and killing more people.[50] Fire suppression costs have also skyrocketed, consuming an ever-larger proportion of the budgets of state and federal agencies charged with addressing these issues.[51]

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46. GHADESSI, *supra* note 42, at 18.

47. *See* David Baker, *Wildfires Will Push Up Your PG&E Bill, No Matter What*, S.F. CHRON. (Aug. 26, 2018), https://www.sfchronicle.com/business/article/Wildfires-will-push-up-your-PG-E-bill-no-matter-13182830.php?psid=h4hYt (noting that longer fire seasons and incurring liabilities have led to higher insurance premiums for utility companies and had a trickle-down effect to consumers).

48. *Id.*

49. *See* Hannah Norman, *PG&E Bills Likely to Rise Amid Wildfire Liability Debate*, S.F. BUS. TIMES (Aug. 27, 2018, 10:32 AM), https://www.bizjournals.com/sanfrancisco/news/2018/08/27/pg-e-bills-likely-to-rise-amid-wildfire-liability.html.

50. *See* Lauren Tierney, Laris Karklis & Tim Meko, *Mapping the Camp and Woolsey Fires in California*, WASH. POST, https://www.washingtonpost.com/graphics/2018/national/california-wildfires-maps/?noredirect=on&utm_term=.01421a5ed066 (last updated Nov. 25, 2018).

51. Lindsay Schnell, *Battling Wildfires Year-Round Is Now the Norm. How Did We Get Here?*, USA TODAY (Aug. 03, 2018), https://www.usatoday.com/story/news/2018/08/08/california-fires-battling-wildfires-year-round-new-normal/930394002/.

Climate change may at least partly explain the West's worsening fire seasons. Hotter air is causing more trees to die or dry out, creating better fuel sources for fires.[52] Other fuel sources, such as nonindigenous plants, also have a growing presence in the West's ecosystems. Examples of these plant species include eucalyptus trees, which were brought from Australia in the 19th century,[53] and a unique African grass known as fountain grass, which was introduced in Arizona sometime in the 20th century.[54]

It is also worth noting that longer and more severe fire seasons are likewise linked to other environmental problems. For example, intense fires during the winter have led to increased storm runoff and erosion.[55] This is problematic because it leads to an exposed snowpack in mountainous areas, causing earlier melt times in the spring such that less water can be captured and stored for use in the late summer months.[56] Early snowpack melt is directly related to water shortages and drier forests.[57] These linked impacts ultimately affect drinking water supplies, the West's agricultural industry, and numerous other aspects of their economies.

2. Rising Costs for Utilities

Utilities have long sought to prevent fires through various forms of "Utility Vegetation Management"[58] (UVM). UVM is the process of eliminating protruding vegetation near power lines by trimming trees, removing bushes, spraying herbicides, and even stunting tree-growth.[59] While there is a wide variance in how much any given utility spends per year on UVM, IOUs collectively spend over $250 million on UVM annually for their distribution systems alone.[60] Due to longer fire seasons and more severe fires, utilities today are spending more and more money

52. *Id.*

53. Clay Thompson, *Koalas Are Cute, But They Don't Belong Here*, AZ CENT. (May 21, 2014, 5:59 PM), https://www.azcentral.com/story/claythompson/2014/05/23/clay-thompson-arizona-humor-eucalyptus-trees-koalas-australia/9398305/.

54. *Fountain Grass*, NAT'L PARK SERV., https://www.nps.gov/sagu/learn/nature/fountain-grass.htm (last updated Feb. 24, 2015).

55. S.B. 901, 2017-2018 Reg. Sess. (Cal. 2018).

56. *Id.*

57. *Id.*

58. Brian S. Tomasovic, *High-Voltage Conflict on Blackacre: Reorienting Utility Easement Rights for Electric Reliability*, 36 COLUM. J. ENVTL. L. 1 (2011).

59. *Id.*

60. Elizaveta Malashenko, *Rethinking Utility Vegetation Management,* ELECTRIC LIGHT & POWER (May 01, 2018), https://www.elp.com/articles/2018/05/powergrid-cover-story-rethinking-utility-vegetation-management.html.

on UVM.[61] Higher retail electricity rates likely follow this upward trend in regions where wildfire risks are high, compelling retail ratepayers to eventually absorb most of these UVM costs.[62]

Rising liability insurance premiums are another source increasing wildfire-related costs for electric utilities in the West. At present, it is somewhat unclear in California how much of a utility's insurance costs can be passed onto ratepayers, but a large proportion of this expense is capable of being passed onto ratepayers in many jurisdictions.[63] Naturally, as wildfire liability risks grow, the premiums that private insurers charge to insure utilities against these risks will continue growing as well.

As mentioned above, many electric utilities earn a government-prescribed rate of return on their capital improvement projects.[64] Accordingly, it is essential for these utilities to be able to borrow large amounts of capital to fund these improvements. In recent years, public scrutiny, numerous settlement agreements, and court judgments related to wildfire liability have led to credit downgrades for IOUs in California.[65] Unfortunately, these wildfire-driven financing challenges can potentially have broader impacts on retail customers, the nation, and the planet.[66] Western utilities are increasingly seeking to invest in sustainable energy projects to replace fossil-fuel-powered electricity generation, but their

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61. CAL. PUB. UTILS. COMM'N, CPUC FACT SHEET PG&E VEGETATION MANAGEMENT SPENDING, http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/PGE%20Vegetation%20Management%20Spending.pdf (last visited Mar. 15, 2019) (stating that from 2012 to 2017, PG&E's approved spending from CPUC on vegetation management has incrementally increased from $168 million to $201 million); *see also* George V. Rancea, Evaluation of Methods for Control of Vegetation in Utility Corridors (May 5, 2014) (unpublished M.S. thesis, University of San Francisco) (on file with USF Scholarship Repository), ("Climatologists have predicted . . . due to global warming . . . the impacts from vegetation to transmission lines are expected to correspondingly increase . . . .).

62. Jonathan J. Cooper, *California Approves Measure to Pass on Wildfire Costs*, U.S. NEWS (Sept. 1, 2018), https://www.usnews.com/news/best-states/california/articles/2018-08-31/utility-union-benefits-from-california-wildfire-legislation.

63. Norman, *supra* note 49.

64. GHADESSI, *supra* note 42.

65. Rebecca Choong Wilkins & Molly Smith, *California Utilities May Risk Junk-Debt Status as PG&E Unravels,* BLOOMBERG (Jan. 24, 2019), https://www.bloomberg.com/news/articles/2019-01-24/california-utilities-may-risk-junk-debt-status-as-pg-e-unravels.

66. Mike Florio, *A Former Commissioner's Open Letter on Recovering from the California Wildfires*, GREENTECH MEDIA (June 26, 2018), https://www.greentechmedia.com/articles/read/a-former-commissioners-open-letter-on-recovering-from-the-california-wildfi#gs.D9kHDI5l (noting that when financial markets worry about the financial status of power companies, the cost to borrow money and procure power go up, which ultimately leads to higher costs for the consumer).

growing costs of capitalizing these projects could ultimately slow the pace of such sustainable energy investment.[67]

Western utilities' present wildfire woes are perhaps best illustrated by the potential $30 billion charge that PG&E, California's largest utility, may face as a result of the Camp Fire.[68] As stated above, PG&E has responded to these challenges by filing a bankruptcy petition and seeking a controversial, complex corporate restructuring.[69] Although experts claim that retail electricity services will not be interrupted by PG&E's restructuring, ratepayers may ultimately be left to pay much of the utility's liabilities through higher retail electricity rates.[70] Additionally, public criticism over PG&E's restructuring plan has led to the public and government leaders calling for the transfer of the utility into the hands of state or local government. In that sense, the challenges and uncertainty facing western utilities related to wildfire liabilities indirectly face every Westerner who relies on grid-delivered electric power.

3. Utility-Caused Wildfires and the Duty to Serve Rural Customers

Most western wildfires attributed to utilities start in rural areas.[71] Between 2012 and 2017, California averaged 4835 fires per year. From

67. Drought, Bark Beetle infestations, and climate change have led to more fires and growing liabilities, which may be passable onto investors. This uncertainty has led to a domino effect on utilities incurring more costs to do business and potentially cutting renewable energy programs. *See* Fred Keeley, *If Utilities Don't Get Help on Wildfires, California Could Be in Another Energy Crisis*, SACRAMENTO BEE (July 30, 2018), https://www.sacbee.com/opinion/op-ed/soapbox/article215613430.html.

68. In the aftermath of the Camp Fire, it was estimated that PG&E could be liable for up to $30 billion in damage. Since then, PG&E has negotiated an $11 billion settlement with insurance companies and pledged another $8.5 billion. However, a bondholder group seeking control of the company has pledged $13.5 billion. *See* Associated Press, *Camp Fire Survivors Fear Smaller Payouts from PG&E with Each Wildfire*, KTLA5 (Nov. 23, 2019, 1:01 PM), https://ktla.com/2019/11/23/camp-fire-survivors-fear-smaller-payouts-from-pge-with-each-wildfire/; *see also* David Faber, *California Utility PG&E Faces at Least $30 Billion Fire Liability, Sources Say,* CNBC (Jan. 7, 2019, 9:13 AM), https://www.cnbc.com/2019/01/07/californias-pge-faces-at-least-30-billion-fire-liability-sources.html.

69. Penn, *supra* note 14.

70. J.D. Morris, *PG&E in Trouble: Will the Lights Stay On? Will Customers Pay More?*, S.F. CHRON. (Jan. 7, 2019, 9:29 AM), https://www.sfchronicle.com/california-wildfires/article/PG-E-in-trouble-Will-the-lights-stay-on-Will-13515785.php.

71. This Article focuses on utility-caused wildfires in the West. The National Interagency Fire Coordination Center monitors wildfires on a national level on federal lands. Of the federal lands that burned in 2018 (8,767,492 acres), nearly 21% (1,823,153.2 acres) occurred in California. California unfortunately runs away with this statistic, with Nevada ranking second (1,001,966 acres or 11%) and Oregon taking third (897,262.7 acres or 10%). *See* NAT'L INTERAGENCY FIRE COORDINATION CTR., NATIONAL REPORT OF WILDLAND FIRES AND ACRES BURNED BY STATE,

2014 through 2016, IOUs were found to be the cause of at least 1275 fires. Based on the five-year average, this would mean that IOUs[72] were directly responsible for at least 8.8% of the fires in California between 2014 and 2016.[73] Additionally, of these 1275 fires, 967 of them had a point of origin in rural areas and 1012 of them were caused by power lines contacting objects or equipment failures in distribution lines.[74] Because distribution lines are used for local power delivery, this means that most IOU-caused wildfires were the result of utilities' duty to serve retail customers living in rural areas.[75] Moreover, since residential electricity rates within most regulated-generation jurisdictions are generally calculated based on aggregate consumption and do not vary by location, urban ratepayers often heavily subsidize the liabilities and obligations created by rural retail electricity users.[76]

C. Comparing State Wildfire Liability Laws

As briefly described above, electric utilities can face liabilities totaling billions of dollars in the wake of a major wildfire.[77] Injured property owners can bring negligence actions against utilities whose equipment caused a fire, alleging that the utility failed to meet the appropriate standard of care. Other causes of action such as abatement or inverse condemnation, can also potentially be brought pursuant to state law. To provide a clearer context for the potential liability utilities face while delivering power, the following Sections highlight legal rules that govern wildfire liability in California and a few other Western states.

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https://www.predictiveservices.nifc.gov/intelligence/2018_statssumm/fires_acres18.pdf (last visited Jan. 27, 2020).

72. CPUC regulates the big three IOUs: Pacifica Gas & Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E). *See What Is a General Rate Case?,* CAL. PUB. UTIL. COMM'N, https://www.cpuc.ca.gov/General.aspx?id=10431 (last visited Aug. 11, 2019).

73. Percentage was derived from the amount of IOU-attributed fires divided into three years of the five-year average. *See id.; see also Stats and Events*, CAL FIRE, https://fire.ca.gov/stats-events/ (last visited Aug 11, 2019).

74. Statistics for origins and causes of IOU wildfires were derived from the big three IOUs in California. Also, it should be noted that CPUC overseas additional, smaller utilities which are unaccounted for. *See Wildfires*, CAL. PUB. UTIL. COMM'N, http://www.cpuc.ca.gov/CPUCNews Detail.aspx?id=6442454974 (last visited Jan. 27, 2020).

75. *Id.* (noting statistics for origins and causes of IOU wildfires).

76. *See What Is a General Rate Case Phase II?*, *supra* note 45.

77. *See* Faber, *supra* note 68.

1. California

Under California law, property owners who suffer fire damages from utility equipment may file claims against utility companies for negligently allowing the fires to start.[78] California laws provide multiple avenues for injured landowners to potentially recover damages related to wildfires. A plaintiff may be able to recover for intangible environmental damage,[79] reforestation costs,[80] and even loss of profits from a damaged business.[81]

In addition to allowing negligence actions, California law has also historically allowed property owners to recover against utilities under an "inverse condemnation" theory.[82] In *Barham*, the California Court of Appeals held that the doctrine of inverse condemnation could be applied to property damage stemming from a wildfire started by utility-owned equipment.[83] This California Supreme Court decision was based on California Constitution article 1, section 19. In reaching its holding, the *Barnham* court opted to treat utilities as state agencies because of their possession of eminent domain authority and the elaborate regulatory scheme surrounding them.[84] The court reasoned that the transmission of electricity was a public use and that property damage caused by utility equipment thus amounted to a taking. Treating utilities like a public agency is common, for purposes of eminent domain, but California's application of inverse condemnation for fire damage is unique to California and the utility companies who operate there. The holding in Barham, that utilities are governmental entities for purposes of inverse condemnation, is at least partially responsible for the financial woes of the IOUs in California.[85] The threshold to prevail under an inverse condemnation claim is lower and easier to satisfy compared to that of a negligence claim. To prevail on an inverse condemnation claim, property owners need only show that their property was damaged or "taken" in furtherance of a public use (providing the public with electricity). In contrast, negligence claimants must show that the utility owed a duty to

78. CAL. HEALTH & SAFETY CODE § 13007 (West 2018).

79. United States v. CB & I Constructors, Inc., 685 F.3d 827 (9th Cir. 2012).

80. United States v. Union Pac. R.R., 565 F. Supp. 2d 1136 (C.D. Cal. 2008).

81. McKay v. California, 8 Cal. App. 4th 937 (Cal. Ct. App. 1992).

82. *See* CAL. CONST. art. I, § 19; *see also* Barham v. S. Cal. Edison Co., 74 Cal. App. 4th 744 (Cal. Ct. App. 1999).

83. *Barham*, 74 Cal. App. 4th at 752.

84. *Id.* at 430.

85. David R. Baker, *The California Rule That Doomed PG&E: Inverse Condemnation*, BLOOMBERG (Jan. 15, 2019), https://www.bloomberg.com/news/articles/2019-01-15/the-california-rule-that-doomed-pg-e-inverse-condemnation.

them, that the utility failed to reasonably carry out this duty, and that such failure was the proximate cause of the damage.

It's worth noting that inverse condemnation actions have similarly been brought in the wake of other types of natural disasters. For instance, some property owners in Louisiana filed inverse condemnation actions against the United States after Hurricane Katrina caused catastrophic flooding throughout coastal areas. In particular, many claimed that the government's failure to adequately maintain a federal navigation project, the Mississippi River-Gulf Outlet (MRGO), resulted in an increased storm surge that amounted to a compensable taking.[86] In *St. Bernard Parish Government v. United States*, the property owners sought compensation from the government because MRGO caused increased flooding on their property, which arguably constituted a flowage easement.[87] The court in *St. Bernard* ultimately held that the property owners could not prevail on a takings theory because the government could not be liable for inaction.[88] Specifically, the court held that government actors are shielded from liability when they simply decide not to act, even if the inaction results in dramatically increased flooding.

Whether the holding in *St. Bernard* regarding inaction is fully consistent with the holding in *Barham* is not entirely clear. One could argue that the court's approach in *Barham* effectively punishes utilities for inaction because it imposes liability even when a utility simply fails to adequately maintain overhead electrical equipment and that equipment causes a wildfire. In contrast, the court in *St. Bernard* explicitly disallowed takings claims for the government's failure to act. On the other hand, the utilities' "action" in *Barham* was arguably its construction of electric lines in fire-prone areas. The relevant wildfire from that case would never have started without such construction, whereas much of the flooding in Louisiana arguably would have still occurred had there been no MRGO. Regardless, the similarities between the claims brought after Hurricane Katrina and the burgeoning set of wildfire-related claims in California highlights the growing liability risk facing governments and quasi-governmental entities such as utilities in connection with natural disasters. Climate change is likely to only increase this risk further in the coming years. Meanwhile, the application of the inverse condemnation doctrine to

86. *See* St. Bernard Par. Gov't v. United States, 887 F.3d 1354, 1358 (Fed. Cir. 2018); *see also* Nicholson v. United States, 77 Fed. Cl. 605, 606 (Fed. Cl. 2007).

87. *Id.* at 1359 (citing Ark. Game & Fish Comm'n v. United States, 568 U.S. 23 (2012)).

88. *Id*. at 1360 (explaining how government inaction could form the basis for a federal torts claim, but such inaction could not impose liability under the Fifth Amendment).

wildfire damages in California effectively means that IOUs in that state can be held strictly liable for conduct resulting in wildfires—a legal rule that some suggest is the primary reason California IOUs are facing such significant financial constraints.[89]

2. Other Western States

All other western states apply some version of negligence to utility-caused wildfire liability. California's approach, resulting from the *Barham* decision, is truly unique among western states in that it allows for the application of inverse condemnation for fire damage. The following paragraphs briefly describe how laws in other western states approach utility liability for wildfires.

In Oregon, a utility held responsible for a forest fire must reimburse the costs of "suppressing" or putting out the fire. Utilities in the state can also be held civilly liable for any destruction of property or injury arising out of a wildfire.[90] If a utility is found to have acted negligently in a way that caused a fire, plaintiffs may be awarded economic and property damages arising out of that fire. If a utility is found to have acted grossly negligent, recklessly, willful, or with malice, then the damages may be doubled.[91] Unlike in California, causes of action against utilities in Oregon in the wake of wildfires are limited to tort, and plaintiffs may not bring takings claims.[92] In addition to civil liability, utilities may be subject to fines from the Oregon Public Utility Commission for any established safety violations.[93]

In Washington, those who negligently start a fire or create an extreme fire hazard, are liable for property loss[94] and suppression costs.[95] Unlike Oregon, Washington does not expressly limit causes of actions available after a wildfire. However, Washington is similar to Oregon in that it does not allow for inverse condemnation claims to be brought against utilities after wildfires. The Washington Administration Code does classify electric companies as "public service companies" but limits the inverse

89. J.D. Morris, *California's Strict Wildfire Liability Rule Hangs over Bankrupt PG&E*, S.F. CHRON. (Feb. 10, 2019), https://www.sfchronicle.com/business/article/California-s-strict-wildfire-liability-rule-13604239.php.

90. *See* OR. REV. STAT. § 477.089 (2018).

91. *Id.*

92. *Id.*

93. *See id.* § 757.990 (stating that violations are subject to a fine between $100 and $10,000 for each day).

94. *See* WASH. REV. Code § 76.04.495 (2019).

95. *See id.* § 76.04.475.

condemnation doctrine to governmental actions, and courts in the state have held that utilities' ordinary activities are not governmental actions under the doctrine.[96] The code also imposes no specific UVM management obligations on electric utilities but does require utilities to make efforts that are reasonable under the circumstances to avoid interruptions in electricity service, which could conceivably include UVM.[97]

Statutory laws in Idaho allow for civil remedies against any person, legal entity, state, or political subdivision for a forest or range fire caused by a negligent or unintentional act.[98] Treble damages are available if the fire is started willfully.[99] Although Idaho has adopted the federal standards for electricity reliability and safety, it has no administrative code provisions that specifically seek to punish utilities for failing to maintain these standards.[100] Unlike in California, Idaho laws also do not allow for inverse condemnation proceedings for property damage from a utility-caused forest fire.[101]

Montana law also allows for recovery of suppression costs and economic damages to property when a fire is unintentional or negligently started.[102] However, unlike in Idaho, an inverse condemnation claim in Montana is broader and could conceivably result from a utility-caused wildfire because it can arise without the physical appropriation of

96. *See* Lakey v. Puget Sound Energy, Inc., 296 P.3d 860 (Wash. 2016) (citing Phillips v. King Cty., 968 P.2d 871, 929 (Wash. 2013)) (holding that inverse condemnation liability may lie against a *governmental entity* only if the entity has "appropriat[ed] the land, restrict[ed] its use through regulation, or caus[ed] damage by constructing a public project to achieve a public purpose").

97. *See* WASH. ADMIN. CODE § 480-100-148(2)(d).

98. *See* IDAHO CODE § 38-107 (2019).

99. *See id.* § 6-202.

100. *See* IDAHO ADMIN. CODE § 31.11.01.101 (2019).

101. *See* IDAHO CONST. art. I, § 14; *see also* ADA Cty. Highway Dist. v. Brooke View, Inc., 395 P.3d 357 (Idaho 2017) (holding that a damaged wall adjacent to a condemned portion of property did not qualify as a taking; the damaged wall associated with the condemned property retains its remedy in tort).

102. *See* MONT. CODE ANN. § 50-63-104 (2019).

property.[103] State regulators in Montana can penalize utility companies for safety code violations but not for mere negligence.[104]

In Utah, anyone who negligently, recklessly, or intentionally causes or spreads a wildfire is liable for suppression costs, regardless of where the fire starts.[105] However, inverse condemnation claims can only be brought when they are a direct and necessary consequence in the construction or operation of use,[106] and it is unclear whether utility caused wildfires are direct enough to satisfy this requirement. The Utah Public Service Commission does regulate utility safety through the Utah Administrative Code, but it also does not specifically prescribe fines for failures in maintenance.[107]

In Nevada, any person, firm, association, or agency that willfully or negligently sets fire to property is potentially liable to owners for resulting damages, and if the fire threatens human life, suppression costs are also recoverable.[108] Like many other western states, Nevada has statutory laws specifically requiring that utilities produce power in a safe and reliable manner,[109] but those laws do not set forth specific penalties for utilities that fail to do so. Inverse condemnation claims for utility-caused fires are not possible in Nevada because the state's doctrine requires a physical appropriation of property and does not allow for recovery for mere property damage.

Arizona regulated utilities have an express responsibility to ensure safety in the delivery of power,[110] and the regulators in the state have power to investigate accidents on the property of utility companies that

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103. *See* Jim Nugent, City Att'y Office, 2004-023, Legal Opinion (2004); *see also* Knight v. City of Missoula, 827 P.2d 1270, 1276 (Mont. 1992) ("A property owner may recover in an inverse condemnation action where actual physical damage is proximately caused to his property by a public improvement as deliberately planned and built."). For a landowner to prevail on an inverse condemnation claim in Montana, the claimant must show that (1) the damage, if reasonably foreseeable, would have entitled the owners to compensation; (2) likelihood of public works not being engaged in because of unforeseen and unforeseeable direct physical damage to realty is remote; (3) direct physical damage was sustained as proximate result of the public works as deliberately planned and carried on; (4) the cost of the damage can better be absorbed by the taxpayers and (5) the owner, if uncompensated, would contribute more than his proper share to the public undertaking. Rauser v. Toston Irrigation Dist., 565 P.2d 632, 638 (Mont. 1977).

104. *See* MONT. CODE ANN. § 69-4-205 (prescribing punishment for Safety violations); *see also* MONT. CODE ANN. § 69-4-201 (West 2019) (adopting safety standards).

105. UTAH CODE ANN. § 65A-3-4 (West 2019).

106. *See* Farmers New World Life Ins. Co. v. Bountiful City, 803 P.2d 1241 1245 (Utah 1990).

107. *See* UTAH ADMIN. CODE § 746-310-5 (West 2019).

108. *See* NEV. REV. STAT. ANN. § 472.530 (2019).

109. *See id.* § 704.001.

110. *See* ARIZ. ADMIN. CODE § R14-2-208 (2019).

result in injuries to persons or property that directly or indirectly arise from their maintenance of the property.[111] A property owner may bring a cause of action to recover damages from all losses associated with a forest fire if the utility's violation of state law led to the fire,[112] and exemplary damages may be awarded if the violation was willful.[113] However, the state's inverse condemnation doctrine is too narrow in scope to be relevant in the context of IOU-caused wildfires because it limits inverse condemnation actions to those arising of *government* entities and thus would preclude IOUs.[114]

In summary, utilities in all western states can potentially be liable for fires caused when their equipment causes the initial spark. However, California's unique inverse condemnation theory for wildfire damage is an outlier and is affecting utilities in that state much differently than those in other western states. In the majority of western states, utility liability is limited to recovery of suppression costs, penalties for violating state regulations, and tort claims brought by landowner or ratepayers. Only in California is there a significant risk of inverse condemnation claims for fires started by IOUs or co-op utilities. Applying inverse condemnation to "quasi-public" entities can make a utility liable for wildfire damage even if the utility has acted nonnegligently. Holding a privately owned company responsible, without evidence of negligence, runs akin to holding an IOU to a strict liability standard. Such a strict liability standard can be crippling for utilities and is arguably inconsistent with laws in many jurisdictions holding that utility companies must be held to a negligent standard in tort and that strict liability does not apply.[115]

111. ARIZ. REV. STAT. ANN. § 40-338 (2019).

112. *Id.* § 40-423.

113. *Id.*

114. *See id.* § 40-341 (noting that "[p]ublic service corporation" means any person or corporation that provides electric or telecommunication service to the public by means of electric or communication facilities); *see also* A Tumbling-T Ranches v. Flood Control Dist., 217 P.3d 1220, 1230 (Ariz. Ct. App. 2009) ("To prevail, a plaintiff must prove a governmental entity constructed or developed a public improvement that substantially interfered with the plaintiff's property right.").

115. *See* Aversa v. Pub. Serv. Elec. & Gas Co., (N.J. 1982) ("While being transmitted, liability is controlled by standards of negligence and not strict liability, since any injury sustained as a result thereof is causally connected only to the transmission or transportation service and is unrelated to the ultimate sale of the product."). The court cites many other jurisdictions that hold strict liability, but they do not apply to utility power transmission. *Id.*

III. BEFORE THE BLAZE: EX-ANTE APPROACHES TO ADDRESSING THE UTILITY WILDFIRE LIABILITY PROBLEM

An important way to reduce wildfire risk in the West is to prevent utility equipment from causing fires to ignite. Part III provides a legal framework to increase coordination and involvement among states and private parties through an "ex-ante" approach to addressing utilities' wildfire cost problem.[116] Because of the vastness of the American West, fire prevention is particularly difficult and expensive in the region. However, it is likely that many types of investments in wildfire prevention could ultimately pay for themselves and reduce net wildfire costs to property owners, utilities, and governments.

A. Greater Collaboration in Wildfire Prevention Plans

Increasing collaboration in UVM is one potentially powerful means of helping to reduce total wildfire costs in the West. The current policy framework for fire prevention places much of the responsibility on utilities to conduct UVM. A more efficient and effective approach would involve not just utilities but state utility regulators, public land managers, and firefighting agencies. A more aggressive fire prevention system with formal, integrated mitigation plans, stronger vegetation management systems, and efficient land management could help reduce the financial burden on utilities without sacrificing accountability.

California's recent fire woes led its state legislature to enact complex new statutory laws aimed at reducing fire damages through specific mitigation plans.[117] The mitigation plan aims to involve the Forestry Department in an advisory capacity and require approval from the PUC.[118] It also provides a mechanism for utilities to de-energize lines, during high-fire-risk periods with reasonable notice.[119] The statute, likewise, requires the utilities to create a protocol for conducting UVM and inspections.[120] Among other things, utilities must map out risk areas within their service territory and include any topographical characteristics of their service area that may promote fire risk. Because reasonable costs for creating the mitigation plan and performing necessary inspections can be recovered in rates, utilities have adequate incentives to create the most effective

116. THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY PRINCIPLES AND POLICIES 50 (Robert C. Clark et al. eds., 3d ed. 2017).

117. *See* CAL. PUB. UTIL. CODE § 8386 (West 2019).

118. *See id.* § 8386(b).

119. *See id.* § 8386(c)(6).

120. *See id.* § 8386(c)(8)-(9).

prevention strategies.[121] Currently, no other state has enacted a similar statutory requirement for fire-mitigation plans. In the coming years, other states in the West should follow California's lead and adopt similar provisions as California's to help reduce fire risks.

One potentially valuable addition to California's new fire prevention system would be mandatory oversight by a state firefighting agency. This oversight could include random inspections of noted "problem lines," where UVM is most necessary. If a utility were compliant with its mitigation plan and state safety standards, then inspection costs would be recoverable with rates. However, a firefighting agency will step into the shoes of a utility and conduct UVM if a utility is noncompliant with established mitigation standards, requiring the utility to compensate the agency for those services and not allowing the utility to include those costs in rate-setting calculations. Allowing firefighting agencies to conduct UVM on the utility's behalf when needed would allow those agencies to devote more attention to wildfire prevention and would help to ensure that utilities are held to a standard of care.

Since it is such an important aspect of wildfire management in the West, any new preventative system should allow utilities to recover reasonable UVM costs through their retail rates. UVM is the most effective tool in preventing wildfires caused by electric equipment, but it can also be very expensive. Even before California enacted its new mitigation plan legislation, utilities in that state were already incurring these costs.[122] With elongated fire seasons, UVM is as essential as ever. The gradual encroachment of real estate development into fire-prone rural areas has significantly contributed to the West's growing wildfires problem, but existing policies in many states fail to require landowners in these rural areas to bear the full costs of their receipt of electricity service. Special fees assessed in areas where UVM costs are greatest could potentially help ratepayers in those communities to internalize more of those costs.

The sheer vastness of the western United States imposes significant logistical challenges for federal government agencies charged with managing public lands and reducing fire risks in the region.[123] One

121. *See id.* § 8386(h)(3).

122. CAL. PUB. UTILS. COMM'N, s*upra* note 61.

123. In addition to the sheer amount of land creating logistical issues, land management has been lacking due to budgets being shifted from prevention to suppression. From 1995 to 2015, the Forest Service went from spending 16 percent of its budget to 52 percent of its budget fighting fires. *See* James Rainey, *California Is Managing Its Forests—but Is the President Managing Its*

possible means of better addressing his challenge would be for states and federal agencies to collaborate to create bifurcated land management systems allowing state agencies to step in and assist the federal government in conducting fire prevention activities on federal public lands. Of course, state governments will likely be unwilling to accept this additional responsibility without receiving something in return. Among other things, states will likely demand assurances that their fire prevention activities will not create significant additional liability for themselves. Fortunately, such assurances may be available under the doctrine of derivative sovereign immunity, where an agent of the federal government assumes protection from litigation.[124] States will also require financial compensation to offset the costs of any fire prevention activities they engage in on federal lands, but federal-state collaborations occurring after California's devastating fires suggest that such reimbursement arrangements may actually be feasible.[125]

The collaborative system just described would help to addresses many deficiencies currently hindering effective wildfire prevention in the West. By reducing the number and severity of fires, such changes could reduce total fire damages and utility liability risks throughout the region.

B. Smarter Sharing of Duties Between Federal Agencies and States

Another important consideration in constructing a collaborative fire prevention system featuring multiple levels of government is how to allocate authority for oversight of that system. At the federal and state levels, FERC and PUCs already require utilities to patrol their right-of-way easements (ROWs) and inspect their poles. Given that transmission grid infrastructure is maintained primarily at a national level and extends across state lines through federal land, one might argue that oversight of fire prevention efforts should be done primarily by the federal government. On the other hand, one could argue that states are better equipped to serve this role as they already heavily regulate most electric utilities, more directly deal with many of the consequences of utility-

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Federal Lands, NBC NEWS (Dec. 2, 2018), https://www.nbcnews.com/news/us-news/california-managing-its-forests-president-managing-its-federal-lands-n942581.

124. *See* 91 C.J.S. *United States* § 330 (2019).

125. Rainey, *supra* note 123. U.S. Agriculture Secretary, Sonny Perdue, gave a tour of Paradise, California, which was destroyed by the Camp fire. During the tour, he discussed the new, pending Farm Bill, which would allow harvested timber in forest thinning to be used to rebuild the City; and that there were agreements in place to allow the State to use its resources to perform some of the brush removal on federal land. *Id.*

caused wildfires, and are potentially better suited to make decisions affecting individual communities.

At the federal government level, entities that manage federal forest lands and aspects of interstate transmission systems could be good candidates to help lead utilities' wildfire prevention efforts. The DOI's management of most western land makes it a potential suitor.[126] The DOI already negotiates and grants to utilities the ROWs they need for new transmission line projects.[127] Additionally, as part of its responsibilities to protect federal land, the DOI is already actively engaged with land use planning, preserving the ecology of the land, and brush removal.[128] FERC is another potential candidate to lead a coordinated wildfire prevention scheme since it already regulates bulk suppliers of energy[129] and delegates the promulgation and enforcement of transmission line clearance requirements to NERC.[130] On the other hand, the federal government is often cited as ineffective and slow; thus, interjecting them into the management of another state affair would be unproductive.[131]

Allowing individual states to take the reins in coordinating wildfire prevention efforts also has some advantages. States largely already monitor their own lands and provide their own disaster relief and fire suppression function.[132] Additionally, each state's PUC is responsible for ensuring the monopoly powers conferred to the utilities are carried out in

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126. CAROL VINCENT ET AL., CONG. RESEARCH SERV., R32446, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA (2017).

127. Federal Land Policy and Management Act of 1976 § 501, 43 U.S.C. § 1761 (2011).

128. *Who We Are and What We Do*, BUREAU LAND MGMT., https://www.blm.gov/about/our-mission (last visited Jan. 26, 2020).

129. *Cyber & Grid Security*, FED. ENERGY REG. COMMISSION, https://www.ferc.gov/industries/electric/indus-act/reliability/cybersecurity.asp (last visited Jan. 26, 2020).

130. *About NERC,* NORTH AM. ELECTRIC RELIABILITY CORP., https://www.nerc.com/AboutNERC/Pages/default.aspx (last visited Jan. 26, 2019); *see also* Diane Fitzgerald, *Vegetation Management Standard FAC-003-4 to Become Effective October 1, 2016*, TRC SOLUTIONS, https://www.trcsolutions.com/resources/regulatory-update/vegetation-management-standard-fac-003-4-to-become-effective-october-1-2016 (last visited Feb. 1, 2019) (noting that NERC FAC-003-4 sets standards and enforces utility vegetation management practices).

131. *See* Bill McAllister, *FEMA Officials Admit Response to Hugo Was Slow*, WASH. POST, (Oct. 6, 1989), https://www.washingtonpost.com/archive/politics/1989/10/06/fema-officials-admit-response-to-hugo-was-slow/b9e3fe16-6515-40b2-8caa-bd958c0989cb/?utm_term=.b01a65fb546a; *see also* Chuck DeVore, *California's Devastating Fire Are Man-Caused—But Not in the Way They Tell Us*, FORBES (July 30, 2018, 6:11 PM), https://www.forbes.com/sites/chuckdevore/2018/07/30/californias-devastating-fires-are-man-caused-but-not-in-the-way-they-tell-us/#43f1efe770af (detailing how excessive fuel stores are not necessarily due to ineffective federal land managers in 2017, but began prior to 2005, when a collapsing timber market along with bureaucracy of federal and state government made it more expensive and difficult to obtain harvesting permits).

132. *See About Cal. Fire*, CAL. FIRE, https://www.fire.ca.gov/about-us/ (last visited Aug. 12, 2019).

a way that protects land and the ratepayer in their jurisdiction. For example, in California, after a wildfire, CAL FIRE investigates and determines the source of ignition. If it is determined that ignition occurred from a power line, CPUC assesses if the utility had complied with regulations.[133] If the company is found to be noncompliant, CPUC has the authority to fine the utility or deny its ability to pass the costs onto customers.[134] Moreover, California Public Utilities Commission (CPUC) mandates its own UVM clearances, UVM frequency, and patrolling guidelines on the utilities within their purview.[135]

Allocating more federal wildfire prevention dollars to states would help to enable states to better pursue prevention goals in ways that might ultimately save the federal government money as well. Federal agencies are experiencing large budgetary constraints because of rising suppression costs. The budgets of the agencies have significantly shifted from fire prevention to fire suppression and are additionally facing budget cuts under the new current administration.[136] To spread the costs of this endeavor, Congress would disburse more funds to states, which would use the money to fund inspections on federal lands. The costs of this monitoring could be supplemented through fines imposed for noncompliance, sharing of revenue from tree and brush removal, and collections on liquidated damage provisions in new ROW agreements.[137]

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133. *Wildfires, supra* note 74.

134. S.B. 901, 2017-2018 Reg. Sess. (Ca. 2018) (amending California Public Utilities Code § 451.1 to allow investor owned utilities to apply for recovery of costs in connection with catastrophic wildfires). Factors considered in application approval include among others: (1) the nature and conduct of the electrical corporation and its officers, employees, contractor, and other entities with which the electrical corporation forms a contractual relationship; (2) whether the electrical corporation disregarded indicators of wildfire risk; (3) whether the electrical corporation failed to design, operate, or maintain its assets in a reasonable manner; (4) whether the electrical corporation's practices to monitor, predict, and anticipate wildfires, and to operate its facilities a reasonable manner based on information gained from its monitoring and predicting of wildfires; (5) the extent to which the costs and expenses were in part caused by circumstances beyond the electrical corporations control. *Id.*; *see also Electric Safety Citations Issues*, CAL. PUB. UTIL. COMM'N, https://www.cpuc.ca.gov/General.aspx?id=1965 (last visited Aug. 12, 2019).

135. *See* CAL. PUB. UTILS. COMM'N, CPUC FIRE SAFETY REGULATIONS (Feb. 2019), https://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/Safety%20proceedings%20-%202-27-19.pdf.

136. President Trump, in tweeting about the aftermath of a forest fire, announced that the federal government needs to cut trees. This effort's success seems improbable as he has also insisted on cutting the USFS budget by tens of millions of dollars. *See* Emily Cadei & Kate Irby, *Trump Wants to Clear More Trees to Halt Fires. The Feds Need to Spend More, Experts Say,* SACRAMENTO BEE (Aug. 7, 2018), https://www.sacbee.com/news/politics-government/capitol-alert/article216160995.html.

137. Rancea, *supra* note 61, at 5.

C. *Allocating Risk: The Moral Hazard Problem and Wildfires*

Land use development patterns also play an important role in wildfire prevention that would have to be accounted for in any new comprehensive utility wildfire prevention scheme. As land development extends deeper and deeper into rural areas on the outskirts of metropolitan centers in the West, utilities are forced to extend electrical equipment deeper into communities with dense vegetation. Unsurprisingly, utility equipment is more likely to cause fires in these areas. Unfortunately, the wildfire-related costs of this sprawl are seldom fully internalized by residents who seek to move there. In California, the state's unusual inverse condemnation standard for utility-caused wildfires only exacerbates this problem, causing more property owners to remain in high fire-risk locations. Policymakers can greatly reduce wildfire's financial burdens by simply forcing risk-taking citizens who opt to develop land in densely vegetated areas in the West to internalize more of the costs associated with those risks.

1. Incentivizing Landowners in Fire-Prone Areas to Invest in UVM

For utilities in the western United States, compensating landowners for damage resulting from utility-caused wildfires is becoming a major cost of electricity delivery.[138] Because of these liability costs, the total cost of providing electricity service can be significantly higher in fire-prone areas than in other areas, even though often customers living in these areas do not pay significantly higher retail rates.[139] As discussed in more detail in Part IV below, PUCs throughout the West would ideally quantify fire risk across geographic areas and designate zones on a spectrum of lowest to highest risk of fire damage as California has done.[140] Utilities should then be allowed to raise extra capital by surcharging customers in higher risk areas. These additional funds could be used to conduct UVM, depletion of fuel stores, or any other method of fire prevention.

Arguably, land development in fire-prone areas suffers from moral hazard problems because rural property owners are often at least partly

138. S.B. 901.

139. *See* discussion *supra* Section II.B.3.

140. *See* Cal. Pub. Utils. Comm'n, Rulemaking 15-05-006, Decision 17-12-024, Order Instituting Rulemaking to Develop and Adopt Fire-Threat Maps and Fire-Safety Regulations (Dec. 14, 2017) (decision adopted a categorization of "high fire-threat areas" into three different tiers); *see also infra* text accompanying note 169.

insulated from wildfire-related risks.[141] Despite elevated risks of wildfire property damage, rural owners can offset potential costs because electricity rates do not account for the increased risk.[142] Instead, existing laws provide avenues for rural owners to recover damages when their property is affected by utility-caused fires. Unfortunately, such policies ultimately cause utilities to build out electricity distribution infrastructure in high-fire-risk areas despite increasing costs and threat of fire and discourage landowners from doing vegetation management on their own land or otherwise taking actions to reduce utility-caused wildfire risks.

This moral hazard problem is arguably strongest in California because owners can effectively recover damages against a utility company without having to prove negligence.[143] And as mentioned above, federal agencies are often also protected from liability even when fuel stores on federal lands play a large role in the exacerbation of wildfires.[144] State parties are similarly insulated in their own forestry management departments. Meanwhile, utilities are often forced to bear much of the cost when their equipment causes a wildfire. Indeed, because there generally are no comparative negligence rules for wildfire damages, moral hazard problems exist for all parties who may be partially responsible for any amount of damages.[145]

2. Eliminating California's Inverse Condemnation Standard

The moral hazard problems just described in relation to rural land development and wildfire risk are arguably even worse in California,

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141. We use the term "rural sprawl" to create a visual of development encroaching on forests. Scientists and land managers refer to this overlap of development and the forest as the "Wildland-Urban Interface" (WUI). Between 1990 and 2010, the number of houses in the WUI grew from 30.8 million homes to 43.4 million homes, or 41% increase. *See* Volker et al., *supra* note 18.

142. After Revenue Requirements are set by a PUC and the utility, the next phase in a General Rate Case (creating a baseline rate) involves the utility and CPUC to allocate the Revenue Requirement to four categories based on consumption (residential, commercial, agricultural, and streetlights). We are advocating for an additional layer to be placed on each one of those categories based on identified high-fire risk districts. *See What Is a General Rate Case Phase II?*, *supra* note 45; *see also CPUC Fire Safety Rulemaking Background,* CAL. PUB. UTIL. COMM'N, https://www.cpuc.ca.gov/FireThreatMaps/ (last visited Feb. 25, 2020).

143. *See* discussion *supra* Section II.C.1.

144. *See* DeVore, *supra* note 131.

145. In researching utility-caused wildfires, we have only found one case where the federal government was brought in as a cross-claimant. *See Jury: Utilities 95% to Blame for Los Conchas Fire*, SANTA FE NEW MEXICAN (Oct. 28, 2015), https://www.santafenewmexican.com/news/local_news/jury-utilities-to-blame-for-las-conchas-fire/article_d2883506-7ac1-51ff-8e94-653c704434d7.html.

where the state's inverse condemnation laws overly protect landowners in this context. As previously highlighted, California applies a takings theory called inverse condemnation to compensate property owners for utility-caused damages.[146] This standard can punish a utility even when it acts in compliance with state law and CPUC regulations.

Although it would require a constitutional amendment to overturn a California Supreme Court decision based in constitutional law, California should find a way to rid itself of this inverse condemnation standard and limit property owners to negligence actions when they are injured by wildfires. In the wake of the Camp fire and PG&E's bankruptcy, California amended its utility code granting CPUC the authority to decide if IOUs can pass on damages from catastrophic wildfires. CPUC in their sole discretion can allow the utility to recoup the costs of a wildfire if the costs are reasonable and the utility can prove their mitigation efforts and actions at the outset of the fire were reasonable.[147]

Some critics may argue that removal of strict liability for wildfires in California under existing inverse condemnation rules would provide a liability cushion for utilities, incentivizing them to engage in riskier fire management strategies. However, this ignores the fundamental policy considerations behind inverse condemnation and confuses the doctrine with strict liability.[148] Inverse condemnation laws seek to spread the externalities incurred from projects designed to benefit the community; not to act a deterrent in preventing harm. Further, when a private citizen is harmed by the government, the government has the luxury of ultimately spreading those costs to the taxpayer. IOUs do not have that same opportunity. Until recently, IOUs in California could not pass on many wildfire-related costs to retail ratepayers. Even today, IOUs can only pass on costs of wildfire to ratepayers if it can prove to CPUC that it acted nonnegligently.[149] This additional barrier is contrary to the policy behind

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146. In California, a person may file a "takings" type claim for property damaged by government in furtherance of a public project. This scope of liability was expanded to IOUs in *Barham. See supra* note 85.

147. *See* A.B. 1054, 2019-2020 Reg. Sess. (Cal. 2019).

148. *Compare* Barham v. S. Cal. Edison Co., 74 Cal. App. 4th 744, 752 (Cal. Ct. App. 1999) ("The fundamental policy underlying the concept of inverse condemnation is to spread among the benefitting community any burden disproportionately borne by a member of that community."); *with* Aversa v. Pub. Serv. Elec. & Gas Co., 451 A.2d 976 (N.J. Super. Ct. Law Div. 1982) ("While being transmitted, liability is controlled by standards of negligence and not strict liability, since any injury sustained as a result thereof is causally connected only to the transmission or transportation service and is unrelated to the ultimate sale of the product." (citing many other jurisdictions that hold strict liability but do not apply to utility power transmission)).

149. A.B. 1054.

inverse condemnation as the externalities are not spread across the community and are merely shifted from one entity to another.

In addition, the sheer magnitude of damages against PG&E under California's inverse condemnation approach demonstrates how growing liabilities can endanger a utility's ability to operate. PG&E recently announced its plan to file a bankruptcy petition after early estimates of the Camp Fire suggested that the utility could be liable for more than $30 billion in damages.[150] Meanwhile, the state's unique set of legal rules is allowing rural landowners to excessively ignore the wildfire-related risks of their development into rural communities requiring the extension of power lines into those areas.

D. More Streamlined Permitting for UVM and Related Activities

Less bureaucratic management of wildfire prevention activities among federal, state, and local governments could also do much to reduce utility-related wildfire risk. The nation's grid of transmission and distribution lines runs through federal, state, and privately owned land. PUCs oversee the siting, construction, and maintenance of state and privately owned lands, while individual government agencies manage the federal ROWs. In addition to minimum maintenance and UVM requirements mandated by federal and state agencies,[151] obligations and preventative maintenance procedures are often proscribed in these ROWs.[152] Additionally, some federal agencies require a special use permit for a utility to perform routine line maintenance.[153] In recent years, this latter type of permit has created tension between the federal land managers and the utility.[154] Back to back record-breaking years for utility-caused

150. *See* Faber, *supra* note 68.

151. NERC, through its delegated powers from the Federal Regulatory Commission, sets the standard minimum clearance between vegetation and powerlines and other inspection requirements. *See* NERC, FAC-003-4, Transmission Vegetation Management, https://www.ferc.gov/industries/electric/indus-act/reliability/vegetation-mgt/fac-003-4.pdf?csrt=21843094244 16623473.

152. Language in early ROWs were often in perpetuity and gave a broad range of permissible activities. Advancements in environmental science and sophistication between parties have led to more detailed agreements and cover UVM maintenance. *See* Rancea, *supra* note 61, at 8, 16.

153. *See id; see also* BUREAU LAND MGMT., IM 2018-070, EDISON ELECTRIC INSTITUTE MEMORANDUM OF UNDERSTANDING, VEGETATION MANAGEMENT IN ELECTRIC UTILITY CORRIDORS (July 19, 2018) (noting that BLM does not require prior permission for inspection and smaller operations including "minor trimming, pruning, and removing of vegetation" and larger, emergency conditions including falling "hazard trees").

154. In hearings before the Senate Committee on Energy and Natural Resources, Mark Hayden cited as an example Benton Rural Electric Association's (BREA) ROW, which had

wildfires have brought tensions between the competing concerns of observing permitting procedures and preventing wildfires to center stage.[155] To better reduce the frequency of utility-caused wildfires, federal agencies need to better streamline the permitting process for line maintenance activities so that utilities have the property rights necessary to prevent their utility equipment from becoming an imminent fire threat.

1. Expedited UVM Permitting

Some of utilities' greatest wildfire prevention challenges relate to their need to constantly seek approvals from federal land managers to conduct UVM along their lines. Despite the need for expediency, utilities are often dependent on the slow bureaucratic actions by federal agencies. Agency land managers are tasked with ensuring that the activities on the ROW comply with the National Environmental Policy Act (NEPA) and other applicable regulation. Depending on the location of ROW, wildlife in the surrounding area, and nature of work to be performed, lengthy environmental studies may be required before a use permit is issued.[156] These requirements can put federal land managers between a proverbial "rock and hard place" in balancing their obligations to care for all aspects of land while potentially being blamed for utility-caused wildfires. Meanwhile, utilities can understandably worry that delays from these government agencies will result in them incurring liability.[157]

Historically, permission to conduct UVM on federal lands has been granted on a case-by-case basis, and currently, there are no mandated completion times for the agency's approval or denial. This special permitting process is guided only by general code provisions and Memoranda of Understanding (MOUs).[158] In March 2018, Congress enacted a law to help alleviate these permitting tensions by allowing utilities to preemptively file UVM plans, conduct UVM on an emergency

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expired. In application renewal, the process took fifteen months and was contingent on a new environmental study, which would cost over $100,000 in an area that had been established for seventy years. He cites these delays as examples of how utilities could be unfairly liable for wildfire damage that was the result of excessive government delays in permitting. *See Vegetation Management Requirements for Electricity Assets Located on Federal Lands, Hearing Before the S. Comm. on Energy & Nat. Res.*, 115th Cong. (2017) (statement of Mark Hayden, General Manager, Missoula, Montana Electric Cooperative).

155. *Id.*

156. *See* Rancea, *supra* note 61, at 4.

157. *See* NERC, *supra* note 151, at 23-24.

158. 43 U.S.C. § 1772(c)(4)(iv) (2018) ("[T]o the maximum extent practicable, a prompt [plan] review and approval process not to exceed 120 days."); *see also* BUREAU LAND MGMT., *supra* note 153.

basis when a hazard tree poses an imminent threat, and agree to waive strict liability damages in such emergency conditions.[159] While this Act made strides in alleviating the tensions, utilities could still be liable to their PUCs and ratepayers from a failure of utility equipment during an unanticipated delay. Accordingly, to better promote the goals of wildfire reduction and equitable cost spreading the federal government should codify specific permit processing time limits and be required to indemnify utilities when a catastrophic fire is caused due to permitting delays. Codifying maximum permit processing times would create uniformity and efficiency in UVM scheduling. Also, the threat of indemnification by the federal government would ensure that permits were issued as practicably possible and the utility can conduct ROW maintenance.

2. Better Monitoring of UVM Work

More coordinated patrolling of UVM activities is yet another change that could reduce the incidence of utility-caused wildfires in the West. Presently, utility companies are solely responsible for patrols and ensuring UVM plans are followed through. NERC mandates that all ROWs are patrolled each calendar year, with no more than eighteen months elapsing between each patrol.[160] Meanwhile, state and federal land management agencies are also directed to protect the lands they oversee and to ensure their preservation for future generations.[161] To carry out these duties, land managers routinely engage in land use planning, disposal of hazardous fuels, fire preparedness, timber harvesting, and brush disposal.[162] However, it appears that the DOI does not presently house any agency dedicated to monitoring and patrolling for power line safety issues and regulatory compliance. Additionally, while NERC monitors generation and has created regulations concerning UVM standards and frequency, they have done relatively little actual patrolling of compliance with UVM requirements.[163] Congress could conceivably help to fill this gap by

159. 43 U.S.C. § 1772.

160. NERC, *supra* note 151, at 31.

161. *See* 43 U.S.C. § 1761 (2011).

162. The NFS budget for FY2108 included $33,000,000 for Land Management Planning; $174,400,000 for Vegetation and Watershed Management; $16,000,000 for Brush Disposal, and $1,339,620,000 for Wildland Fire Preparedness. *See* U.S. DEP'T OF AGRIC., FISCAL YEAR 2018 BUDGET OVERVIEW, app. B-1 (2017), https://www.fs.fed.us/sites/default/files/usfs-fy18-budget-overview.pdf.

163. NERC has delegated this oversight function to regional operations. Regional entities are responsible for auditing and enforcing NERC regulations. Audits include onsite inspections of generation and substations, but we cannot find any documentation that they perform inspections of

creating a ROW monitoring unit that patrols and enforces the utilities' obligation to maintain safe ROWs.

Similarly to electric utilities, oil and gas companies are required to monitor, maintain, and perform vegetation management of the ROWs in which their pipelines run. Unlike electric utilities, oil and gas companies know that a proactive regulatory agency, the Department of Transportation (DOT), actively patrols pipeline ROWs for noncompliance and safety issues. The DOT through its Pipeline and Hazardous Materials Safety division spends roughly $89 million per year on its program that monitors and inspects 2.7 million miles of pipelines.[164] This existing oversight of oil transportation companies shows that comprehensive supervision of equipment on ROWs is feasible.

Ideally, this new ROW monitoring entity would patrol and compel utilities to correct any problems. If a utility is immediately responsive in remedying the problem, the utility would simply pay a compliance fine. However, if the utility ignores the demand of the agency, the agency would have the power to conduct its own UVM and remove the hazard. This cost of the removal would then be billed to the utility along with a larger penalty. Funds raised from assessed fines would be used to further fund monitoring activities.

Opponents to this scheme might argue that it imposes a burden on governmental actors to act when its resources are already stretched thin. However, the perceived burden placed on the government is minimal as the fines partially finance the additional resources required through enforcement. By using this oversight structure, additional resources for ROW and UVM inspection, another layer of protection is placed upon federal lands, utility companies are held accountable to maintain reliability and safety standards, and the threat of wildfire is reduced.

IV. FROM THE ASHES: EX-POST APPROACHES TO THE UTILITY WILDFIRE LIABILITY PROBLEM

In addition to enhancing wildfire prevention, addressing the West's growing wildfire problem and its impacts on electric utilities will require more efficient rules to allocate responsibility for utility-caused fires. Presently, a party found directly responsible for a fire's ignition is

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ROWs on a routine basis. *See Compliance Assurance,* NORTH AM. ELECTRIC RELIABILITY CORP., https://www.nerc.com/pa/comp/Pages/AboutComplianceOperations.aspx (last visited Apr. 5, 2019).

164. U.S. DEP'T OF TRANSP., PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION BUDGET ESTIMATES FISCAL YEAR 2018 (2017), https://cms.dot.gov/sites/dot.gov/files/docs/mission/budget/281166/phmsa-fy-2018-cj-budget.pdf.

generally liable for all damage the fire causes. Unfortunately, this approach fails to account for other parties whose actions are indirectly contributing to the fires and to the scope of their destruction. Among other things, rural ratepayers living in high-fire-risk areas often do not fully bear the risk or internalize the cost of doing so because they often pay electricity rates comparable to those of lower-risk urban ratepayers. Such ratepayers are often even further insulated from risk because they are often entitled to compensation for fire damage to their own property.

A. Allocating Blame: More Accurately Assigning Wildfire Liability

Utilities are often held liable for wildfire damage when their equipment or infrastructure causes a fire, even if other factors outside their control significantly contributed to the ultimate size of the blaze. Once a fire has been contained, state and federal firefighting agencies begin investigating to identify where and how a fire was ignited and then produce a chronological timeline of the fire's path. To incentivize more optimal behavior among all parties contributing to the West's growing wildfires problem, a more comprehensive investigation by firefighting agencies is needed that more fully considers contributing factors in a fire's ignition and in the scale of its destruction.[165] Ideally, that investigation would more fully examine whether any parties other than utilities were comparatively negligent or somehow aggravated the severity of the fire.

An approach to wildfire liability that more closely resembles a comparative fault regime could help to ensure that more indirect contributors to wildfire damage absorbed the costs associated with their actions. For instance, if federal land managers were to negligently maintain brush fuel stores in a particular area of federal land, thus enabling a utility-caused fire to greatly expand, then that federal agency should arguably be held liable for at least some of resulting property damage.[166] Existing fire investigative reports focus primarily on weather conditions at the point of ignition, associated victims, relevant equipment, and the

165. The fire report prepared for the Redwood Incident is a clear example of a firefighting agency identifying a fire's origin and how it spread. In its analysis of the point of origin, the agency reports how surrounding vegetation helped spread the fire but did not address if nearby landowners contributed to spreading the fire through built up fuel stores. *See* CAL. DEP'T OF FORESTRY & FIRE PROT., *supra* note 2.

166. In some jurisdictions this type of brush clearing mandate is enforced on homeowners living near the Wildland-Urban Interface and enforced by the city. When properly enforced, the mandate creates a fire break, limiting the spread of fire. *See* Adam Nagourney & Thomas Fuller, *In California, Mixed Results for Regulations Meant to Stop Fires*, N.Y. TIMES (Dec. 11, 2017), https://www.nytimes.com/2017/12/11/us/california-widlfires-prevention-regulations.html.

ignition itself.[167] Revising this approach to more fully expand the range of potentially responsible parties could allow costs to be more accurately spread among actual contributors to a destructive blaze, preventing utilities from internalizing more than their share of a fire's total costs.

Moreover, utilities should be able to pass along more of their liability costs to ratepayers who live in high-fire-risk areas when a fire in such an area breaks out. Recently, California passed legislation that allows nonnegligent utilities to pay out damage claims through the state's Wildfire Fund.[168] This fund is replenished through fees assessed to everyone in the service area. Again, this runs afoul to the moral hazard problem discussed above, as the urban users are paying costs, which should be internalized by rural ratepayers. When high-voltage transmission lines designed primarily to deliver power between major load centers pass through a rural forested area and cause a wildfire, if the utility has not acted negligently, customers within the utility's entire service area should arguably shoulder some of the costs of the resulting damage. In contrast, if a low-voltage distribution line delivering power locally to a home in a forest community sparks a wildfire, ratepayers living in that community or similar communities should arguably bear more of the cost.

California has already created geographic fire-risk designations, which could be used to implement zone-based pricing from fires started by local distribution lines.[169] Such an approach would surely be unpopular among locals in rural forested communities, but it would compel those customers to internalize more of the total cost of delivering electricity to them. Implementing zone-based pricing and fee assessments overnight on existing homes and businesses might raise constitutional issues, but zone-based fees or rate adjustments could be implemented gradually over time so as to respect existing landowners' reasonable investment-backed expectations. For newly built homes, electricity rates could be based, in part, on geographic fire-risk designations. Utilities could use funds raised through this approach that could help cover their wildfire-related liabilities.

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167. *See* CAL. DEP'T OF FORESTRY & FIRE PROT., *supra* note 2.

168. *See* A.B. 1054, 2019-2020 Reg. Sess. (Cal. 2019).

169. In addition to the potential of using fire risk designations to more equitably spread cost of power delivery, California currently uses the designations to impose more strict building codes on developers wishing to build within the wildland-urban interface. *See Wildland Hazards & Building Codes*, CAL FIRE, https://osfm.fire.ca.gov/divisions/wildfire-prevention-planning-engineering/wildland-hazards-building-codes/ (last visited Aug. 14, 2019).

B. Disincentivizing Risky Redevelopment After Wildfires

Ensuring that developers of land in fire-prone areas internalize some of the cost of such development is another critical element of any plan to more efficiently and equitably address the wildfire problems affecting utilities in the West. On October 14, 2018, roughly two weeks before California's deadliest fire in history, PG&E de-energized lines to 60,000 homeowners in northern California when a local weather forecast called for low humidity and wind gusts up to sixty miles per hour.[170] Power was restored by 8:00 a.m. the next day, but because of their decision to cut the power off for safety concerns, PG&E faced sharp criticism from ratepayers and local government officials in affected communities.[171] Locals argued that they were particularly dependent on power because many had only one road to their homes and argued that cutting power would result in them not having any notice if an evacuation were to occur.[172] Some ratepayers even submitted claims against PG&E for food loss, property damage, and other economic losses resulting from the intentional brownout.[173] This backlash may have been a factor when PG&E decided, two weeks later and under similar forecast conditions, not to de-energize the same area. Ultimately, a damaged transmission line in that community was determined to be the likely cause of the devastating Camp Fire.[174] As this example showed, western utilities are too often stuck between a proverbial "rock and a hard place" when it comes to de-energizing rural areas. Their choice, even when made with the best intentions, is likely to detrimentally affect at least some ratepayers living in high-fire-risk portions of their service area. Using property tax premiums, electricity rate premiums, or similar policies to discourage development in such places in the first place is one potential means of mitigating this problem.

Utilities also must rebuild infrastructure after devastating wildfires and could be incentivized to do so in ways that reduce future wildfire risks. For example, one potential means of reducing wildfire risk in remote areas is to allow such communities to generate and distribute power

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170. Taryn Luna, *California Fire: PG&E Canceled Planned Power Shut-off in Paradise Area Just Before Camp Fire Broke Out,* L.A. TIMES (Nov 17, 2018), https://www.latimes.com/politics/la-pol-ca-power-shutoffs-wildfires-utilities-20181116-story.html.

171. *Id.*

172. *Id.*

173. PATRICK HOGAN, PG&E PUBLIC SAFETY POWER SHUTOFF REPORT TO THE CPUC 12 (Oct. 31, 2018), https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/PSPS-Report-Letter-10.31.18.pdf.

174. Luna, *supra* note 170.

independently of the larger grid using distributed energy generation and storage technologies and microgrid systems. Microgrids have been around for decades and have traditionally been used as a backup method of power delivery when the connection to the main power grid is lost, but microgrids can also be operated as independent networks or islands. Microgrids can utilize a variety of fuel sources for power generation, including diesel, solar, micro-hydro, biomass, and wind.[175]

Establishing generating stations for small rural locales used to be perceived as economically infeasible, but technological advances and cost reductions in renewable energy generation, battery storage, and other infrastructure equipment are beginning to make such approaches more plausible.[176] For example, a joint venture project using solar energy, storage technologies, and microgrid elements now provides power to 2500 full-time residents of Borrego Springs, California.[177] The clean slate created in the aftermath of a catastrophic wildfire creates an opportunity to replicate this approach in other communities and thereby reduce the total amount of risky transmission and distribution line infrastructure winding through dry rural areas of the West.

Microgrids and related infrastructure are still quite expensive, so stakeholders would need to commit significant amounts of capital to embrace this approach to wildfire prevention. However, in communities with municipalized power, development impact fees and special property tax assessments or fees could potentially help to generate these funds. Impact fees are a well-established tools that municipalities use to offset the costs of infrastructure development. Developers who seek building permits in high-fire-risk areas could be assessed fire prevention impact fees based on factors such as type of use (commercial, industrial, agricultural, residential) and square footage. Localities could similarly offer credits on these fees for improvements that complement their commitment to distributed energy generation such as rooftop solar panels or home energy storage systems. Such fees would compel developers in

175. DANIEL SCHNITZER ET AL., MICROGRIDS FOR RURAL ELECTRIFICATION: A CRITICAL REVIEW OF BEST PRACTICES BASED ON SEVEN CASE STUDIES 1-5 (2014), https://rael.berkeley.edu/wp-content/uploads/2015/04/MicrogridsReportEDS.pdf.

176. Sammy Roth, *California's Wildfire Threat Could Be an Opportunity for Clean-Energy Microgrids*, L.A. TIMES (Mar. 14, 2019), https://www.latimes.com/business/la-fi-microgrids-wildfires-power-shutoffs-20190314-story.html (showing joint efforts between IOUs, the Department of Energy, and people of Borrego Springs in the establishment of a microgrid have been made feasible due to, in part, technological advances in batteries and infrastructure equipment).

177. *Id.*

high-fire-risk communities to internalize more of the wildfire-related costs of providing power to such areas, slowing the sprawl into fire-prone rural areas and raising funds to help further address the problem.

The use of impact fees to fund microgrid infrastructure in rural communities with municipalized power is likely constitutional as well. The U.S. Supreme Court held monetary impact fees to be permissible and constitutional in *Koontz v. St. Johns River Water Management District.*[178] The *Koontz* Court held that monetary impact fees were constitutional so long as there was a "nexus" between the fee and the government's regulatory purpose and the fee was "roughly proportional" to the prospective impact of allowing the development. So long as the fee is based on objective and reasonable measures, such as the type of land use, square footage, and any sustainable energy improvements, it would likely survive scrutiny under the standard set forth in *Koontz.*

V. CONCLUSION

Utility-caused fires are increasingly threatening the financial security of millions of rural landowners in the West and are becoming a major burden for some utilities that provide electric power to the region. The existing legal rules governing utility-caused wildfires are even beginning to harm electricity users in major cities across the West, as demonstrated by PG&E's recent bankruptcy filing. Unless policymakers act, the West's utility wildfire liability problems are likely to only continue in the coming years. Fortunately, it is possible to mitigate these problems through more collaborative fire prevention plans and policies that more optimally align the incentives of utilities, governments, and private landowners.

As climate change causes some areas of the American West to become dryer and hotter, public investments in effective wildfire prevention are more imperative than ever. More streamlined federal permitting for utility vegetation management on federal and state lands could empower utilities to more easily take actions on their own to reduce utility-related wildfire risks. Better monitoring of such vegetation management activities to ensure that utilities are vigilant in their efforts would further assist with this effort. Eliminating California's inverse condemnation standard for utility wildfire liability would also reduce moral hazard problems that may be deterring some landowners from doing their own part to keep vegetation away from power lines.

178. Koontz v. St. Johns River Water Mgmt. Dist., 570 U.S. 595 (2013).

More optimal rules for allocating utility-related wildfire liability are also needed to enable the West to effectively address its growing wildfire liability problem. Legal rules that better allow for multiple parties to share fault for wildfire damage rather than requiring utilities to bear most or all of the liability could help to incentivize less risky behavior among cities, land managers, and rural private citizens. Allowing for retail electricity rate premiums in designated high-fire-risk zones of utility service areas could help to better align rural developers' and ratepayers' incentives by compelling them to internalize more of the cost of their choice to operate or live in high-risk areas. Such premiums could generate revenue for utilities to invest in vegetation management and in microgrids and other technologies capable of reducing overall utility wildfire risks. Greater use of impact fees or property tax premiums in high-fire-risk areas could further help to ensure that landowners and developers in these areas internalized the wildfire-related costs of their actions and to generate local government revenue capable of helping to fund other wildfire prevention efforts.

Through innovative policymaking, the federal government, states, utilities, and localities can collectively help to ensure that the lights stay on in the West and that the region's natural wonders and millions of residents are safe and secure for generations to come.