



MEMORANDUM

January 24, 2020

To: Subcommittee on Energy and Subcommittee on Environment and Climate Change Members and Staff

Fr: Committee on Energy and Commerce Staff

Re: Hearing on “Out of Control: The Impact of Wildfires on our Power Sector and the Environment”

On **Tuesday, January 28, 2020, at 10:00 a.m. in the John D. Dingell Room, 2123 of the Rayburn House Office Building**, the Subcommittee on Energy and the Subcommittee on Environment and Climate Change will hold a joint hearing entitled, “Out of Control: The Impact of Wildfires on our Power Sector and the Environment.”

I. CURRENT STATE OF WILDFIRES

In 2019, almost 50,000 wildfires burned nearly 4.6 million acres in the United States.¹ This California wildfire season, which saw 7,800 wildfires and almost 260,000 acres burned, was relatively smaller than previous years.² However, the state also saw the Kincade Fire in Sonoma County, which damaged 77,000 acres and was the largest wildfire to ever occur in the county.³ Additionally, 2018 and 2017 were some of the worst years for wildfires in California. In 2018, California saw 7,600 fires that burned over 1.9 million acres and caused 100 fatalities.⁴ The most destructive fire in the state’s history, the Camp Fire, occurred in 2018, and burned

¹ Department Of Commerce, National Oceanic and Atmospheric Administration, Wildfires - Annual 2019, (www.ncdc.noaa.gov/sotc/fire/201913) (accessed Jan. 22, 2020).

² California Department of Forestry and Fire Protection, 2019 Incident Archive (www.fire.ca.gov/incidents/2019/) (accessed Jan. 22, 2020).

³ California Department of Forestry and Fire Protection, Kincade Fire (www.fire.ca.gov/incidents/2019/10/23/kincade-fire/) (accessed Jan. 22, 2020).

⁴ California Department of Forestry and Fire Protection, 2018 Incident Archive (www.fire.ca.gov/incidents/2018/) (accessed Jan. 22, 2020).

153,000 acres and resulted in 85 fatalities⁵; and the Mendocino Complex Fire, which was California's largest fire complex, burned almost 460,000 acres.⁶

Many other states in the western United States also experienced damaging wildfires over the past decade, with numerous fires affecting over 100,000 acres each. States outside the West, such as Georgia, have also been affected by severe wildfires in recent years.⁷ In fact, most of the acreage burned in 2019 occurred in Alaska (2.6 million acres).⁸

Several other countries around the world have experienced devastating wildfires within the past year. In Australia, ongoing wildfires have so far burned about 16 million acres in New South Wales and Victoria, while several other destructive fires burned land in other parts of the country. In Brazil, fires started by farmers clearing land in the Amazon basin ultimately burned 2.2 million acres.⁹

II. CLIMATE AND AIR QUALITY

Climate change fuels the frequency, size, and severity of wildfires by increasing the duration of droughts, causing long stretches of low humidity and high temperatures, and initiating early springtime melting which leads to dryer land in the summer months. These changes are already occurring across the western United States.

As climate change progresses and global temperatures rise, the frequency of wildfires and area burned in the United States are expected to increase.¹⁰ The average annual number of large wildfires in the western U.S. has tripled, and the area burned by these fires is six times greater than in the 1970s.¹¹ Furthermore, it is estimated that human-caused climate change is responsible for doubling the area burned by wildfires in the western states since 1984.¹²

⁵ California Department of Forestry and Fire Protection, Camp Fire (www.fire.ca.gov/incidents/2018/11/8/camp-fire/) (accessed Jan. 22, 2020).

⁶ See note 4.

⁷ National Interagency Fire Center, Wildfires larger than 100,000 acres (1997-2018) (www.nifc.gov/fireInfo/fireInfo_stats_lgFires.html) (accessed Jan. 23, 2020)

⁸ Congressional Research Service, *Wildfire Statistics* (Oct. 2019) (IF10244).

⁹ *Why These Australia Fires Are Like Nothing We've Seen Before*, The New York Times (Jan. 21, 2020).

¹⁰ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 521 (2018).

¹¹ Climate Central, *Western Wildfires: A Fiery Future* (Jun. 2016).

¹² U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 1104 (2018).

The Fourth National Climate Assessment projects “fire frequency could increase 25 [percent], and the frequency of very large fires could triple,” under high emission scenarios.¹³ The National Wildlife Federation also found that climate change is one of the main contributing factors in the emergence of extreme “megafires” that burn hotter, longer, and are more frequent.¹⁴ Fires also exacerbate climate change as large amounts of carbon stored in trees and surface soils are released into the atmosphere when they burn.¹⁵ Forest management, through prescribed burns and forest thinning, is one strategy among many used to slow the progress or reduce the risk of wildfires. California regulators recently approved a vegetation management program to streamline the approval of thinning projects.¹⁶ The Fourth National Climate Assessment notes that “ecosystems can naturally slow climate change by storing carbon, but recent wildfires have made California ecosystems and Southwest forests net carbon emitters.”¹⁷

Smoke from these fires degrades air quality and poses a public health risk to surrounding communities since “exposure to wildfire smoke increases the risk of respiratory disease and mortality.”¹⁸ The Environmental Protection Agency (EPA) sets national ambient air quality standards (NAAQS) for harmful pollutants like particulate matter (PM_{2.5} and PM₁₀), and state and local air managers are in charge of implementing the necessary requirements to meet the standards. Both wildfires and prescribed fires drastically increase the amount of atmospheric pollution, leading to air that is not safe to breathe. EPA does not penalize states for pollution from either natural events like wildfires or prescribed fires in areas that use a Smoke Management Plan or basic smoke management practices.¹⁹

¹³ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 1116 (2018).

¹⁴ National Wildlife Federation, *Megafires* (Oct. 19, 2017).

¹⁵ U.S. Environmental Protection Agency, *Climate Change Indicators in the United States: Wildfires* (www.epa.gov/sites/production/files/2016-08/documents/print_wildfires-2016.pdf) (Aug. 2016).

¹⁶ *California eases way for land clearing to prevent wildfires*, The Associated Press (Dec. 31, 2019).

¹⁷ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 1116 (2018).

¹⁸ U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 521 (2018).

¹⁹ Memorandum from the staff of the Environmental Protection Agency’s Office of Air Quality Planning and Standards to Regional Air Division Directors, Regions 1—10, “Exceptional Events Guidance: Prescribed Fire on Wildland that May Influence Ozone and Particulate Matter Concentrations” (Aug. 8, 2019).

While the Clean Air Act has successfully lowered PM_{2.5} pollution levels, longer and more frequent wildfires are erasing those gains.²⁰ A recent study found that wildfires cause drastic spikes in PM_{2.5} emissions, and resulted in the highest levels of fine particle pollution ever recorded in the United States.²¹ This trend is projected to continue with wildfires—exacerbated by climate change—becoming “the principal driver of summertime PM_{2.5} concentrations, offsetting even large reductions in emissions of PM_{2.5}.”²²

III. WILDFIRES AND THE POWER SECTOR

While climate change exacerbates the effects of wildfires, human causes, such as downed power lines, are often the source of ignition. Of the known causes of California’s 20 most destructive wildfires, half were started by electrical problems or power lines. Two of California’s most destructive fires have been linked to power lines and energy infrastructure in need of upgrades.²³ California’s Department of Forestry and Fire Protection (Cal Fire) specifically determined that one of those fires, the Camp Fire, was caused by faulty electric transmission lines owned by Pacific Gas & Electric (PG&E).²⁴ While California’s other utilities have also faced similar situations, PG&E is the state’s largest electricity utility and its estimated \$30 billion in wildfire liabilities lead to the utility’s decision to file for bankruptcy in January 2019.²⁵

Since at least 2007, the California Public Utilities Commission (CPUC) has allowed electric utilities under its jurisdiction to preemptively shut power off to its customers as a wildfire prevention measure.²⁶ In recent years, CPUC has expanded this practice, known as de-energization or Public Safety Power Shut-offs (PSPS).²⁷ In September 2018, California enacted

²⁰ Crystal D. McClure, Daniel A. Jaffe, *US Particulate Matter Air Quality Improves Except in Wildfire-Prone Areas*, Proceedings of the National Academy of Sciences (Jul. 31, 2018) (www.pnas.org/content/115/31/7901).

²¹ *Fueled by Climate Change, Wildfires Erode Air Quality Gains*, Scientific American (Jul. 17, 2018) (www.scientificamerican.com/article/fueled-by-climate-change-wildfires-erode-air-quality-gains).

²² U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II Impacts, Risks, and Adaptation in the United States*, at 521-522 (2018).

²³ *Human-caused ignitions spark California’s worst wildfires but get little state focus*, Los Angeles Times (Jan. 5, 2020).

²⁴ *California Says PG&E Power Lines Caused Camp Fire That Killed 85*, The New York Times (May 15, 2019).

²⁵ *Id.*

²⁶ California Public Utilities Commission, *Order Instituting Rulemaking to Examine Electric Utility De-Energization of Power Lines in Dangerous Conditions* (Dec. 2018) (www.docs.cpuc.ca.gov/PublishedDocs/Published/G000/M251/K987/251987258.PDF).

²⁷ California Public Utilities Commission, *De-Energization (PSPS)* (www.cpuc.ca.gov/deenergization/) (accessed Jan. 23, 2020).

SB901 to address the increasing danger of wildfires.²⁸ That law requires all of the state’s electric utilities to put in place plans to address the risk of wildfires from their power lines and equipment, including the use of de-energization.²⁹ In May 2019, CPUC approved increased use of PSPS, but directed utilities to do a better job educating and notifying the public “and ramp up preventive efforts, such as clearing brush and installing fire-resistant poles.”³⁰

Last year, millions of individuals in California were without power for days during these outages. In the last week of October 2019 alone, PG&E shut off power to more than two million people across the San Francisco Bay area in response to the Kincade Fire.³¹ Additionally, restoring power after planned outages took up to 48 hours in some areas, as lines and conditions needed to be inspected before restoring power.³² Planned outages primarily target distribution lines, but transmission lines, which remained powered, are being investigated for starting the Kincade Fire. Shutting down transmission lines would have even more significant effects on the grid and customers, and could involve federal regulators though, so far, all those transmission lines investigated have been state jurisdictional facilities.³³ During the blackouts, residents relied on generators and batteries for basic needs, and concerns arose regarding the length of the blackouts and the needs of vulnerable populations, such as those who need refrigeration for medicine.³⁴ Experts identify the need to make the grid more resilient against future failures and with planned outages in mind, recommending such options as clearing tree limbs and brush near power lines, and community microgrids, which pair distributed energy resources with batteries and can operate independently from the grid.³⁵

IV. WITNESSES

The following witnesses have been invited to testify:

²⁸ California State Legislature, SB-901 Wildfires (www.leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB901) (accessed Jan. 23, 2020).

²⁹ Congressional Research Service, *California Wildfires and Bulk Electric System Reliability* (Oct. 2019) (IN1189).

³⁰ *California approves power outages to prevent more wildfires*, Associated Press (May 31, 2019).

³¹ *PG&E shutoff: More than 2 million are without power for ‘several days’, officials say*, *The Mercury News* (Oct. 27, 2019).

³² *Potentially historic wind event could worsen California wildfires as another mass outage begins*, *The Washington Post* (Oct. 26, 2019).

³³ See note 30.

³⁴ *PG&E’s role in Sonoma fire questioned as power outage frustrations grow*, *The Washington Post* (Oct. 29, 2019).

³⁵ *PG&E Outlines Path to Easing Future Power Grid Outages*, *Green Tech Media* (Oct. 22, 2019).

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