Lessons Learned from the First Climate-Change Exacerbated Bankruptcy Filing

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Executive Summary

On January 14, 2019, Pacific Gas and Electric Company (PG&E), one of the largest energy utility companies in the US, notified the public its filing for Chapter 11 bankruptcy protection. PG&E's business emergency was directly linked to imminent, potentially overwhelming liabilities related to two catastrophic wildfires in northern California in 2017 and 2018 [1]. It exposed how PG&E's improperly maintained equipment and infrastructure as well as other poor management practices had become the ready fuse of disaster under weather conditions exacerbated by climate change. It further created rippling effects with dire challenges and consequences for PG&E's shareholders, insurers, customers, creditors, as well as individual citizens and taxpayers at large. Ultimately, PG&E's 2019 solvency crisis proved how imperative utility companies must mitigate climate risks, including financial risks to survive, thrive, and contribute to the planet and society as responsible corporate citizens.

1. A Glimpse into Climate Change and Wildfires in California in the Last Two Decades

California is a large state of approximately 100 million acres of land. Known for its ecological and biological diversity, its land consists of offshore islands, coastal lowlands, forested mountain ranges, deserts, large alluvial valleys, and various aquatic habitats. Of the total land areas in California, 33% are classified as forestland. California has typical hot, dry summers and mild, wet winters. This overall underlining geography and weather characteristics are conducive to wildfires, especially when Diablo and Santa Ana winds blow strongly.

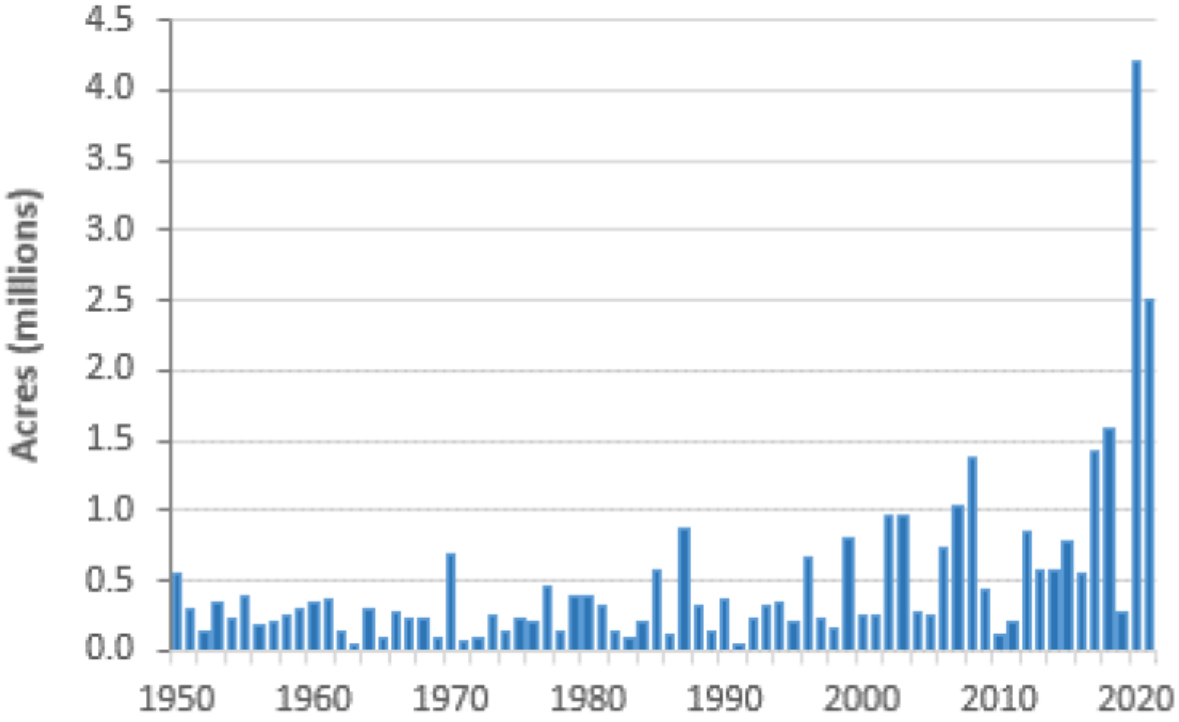
Climate change has been causing colossal harm to the physical environment systems, vegetation and wildlife, human health and casualty, the infrastructure and economy. As such, more frequent and severe wildfires will be rampant, especially as more Californians live close to wild, forested areas.

Among the key findings of the Fourth Climate Change Assessment conducted by the State of California in August 2018, it was stated that "… Climate change will make forests more susceptible to extreme wildfires. By 2100, if greenhouse gas emissions continue to rise, one study found that the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and that average area burned statewide would increase by 77 percent by the end of the century. In the areas that have the highest fire risk, wildfire insurance is estimated to see costs rise by 18 percent by 2055 and the fraction of property insured would decrease." [2]

The 2022 report of Indicators of Climate Change in California conducted by California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) reveals that "… Over the last 20 years, the area burned by wildfires across California has increased dramatically. In 2020 alone, 4.2 million acres burned, more than double the area burned in any other year on record. Ten of the 20 largest wildfires since 1950 burned in 2020 and 2021. The 2020 August Complex burned more than one million acres in seven counties, making it the state's first 'gigafire.' The recent wildfires have caused deaths and injuries, widespread exposures to harmful levels of wildfire smoke, displacement and disruption of communities, damage to structures and property, and tragic losses among some of the state's most iconic species: coast redwoods, giant sequoias, and Joshua trees." [3]

The following figure in the Indicators of Climate Change in California 2022 report illustrates that "… the area burned by wildfires has increased in the last two decades. The average area burned each year in the 2000s and 2010s was twice the 1990s average, and in 2020-2021 was ten times higher."

Figure 1: Statewide Annual Acres Burned



Source: Indicators of Climate Change in California 2022.[3]

In 2023, one of the large insurance companies in US, State Farm decided to pull out of California for mortgage insurance due to "rapidly growing catastrophe exposure" as well as inflation, causing a steep increase in home repair costs [4].

2. Brief Background on PG&E, and Its Environmental Records and Vulnerabilities to Climate Change

Founded in 1905, through decades of strategic consolidations, acquisitions and expansions, PG&E has grown to be the largest electric utility business in the United States by the 1980s. Today as California's largest utility, it has extensive operations in the generation, transmission, and distribution of electricity produced from diverse sources, including natural gas, nuclear power, hydroelectric dams, solar, and wind. PG&E plays a critical role in California's energy infrastructure and energy safety and security, serving about 16 million people over an area of 70,000 square miles in northern and central California, including big cities like San Francisco and San Jose, as well as rural areas with mountains, coasts, and valleys.

PG&E's power lines, equipment, compression stations, and other facilities are spread throughout these diversified landscapes, meaning PG&E must pro-actively, prudently, and consistently deal with various environmental and climate risks, especially wildfires. However, this has not always been the case for

PG&E. Despite its historic and substantial contributions to California's energy supply and economic growth, PG&E has been facing on-going and considerable challenges, including regulatory scrutiny, financial instability, improper maintenance of equipment, poor vegetation management, environmental violations, as well as corporate divestiture decisions causing vulnerabilities to electricity price gauging by non-regulated and out-of-state providers and price ceiling set by PG&E's regulator, California Public Utilities Commission (CPUC). These challenges underscore the complex dynamics between utility operations, environmental stewardship, and societal health and safety for not only PG&E but also the entire utility sector.

As such, since the 1990s, PG&E has been accused and found guilty of criminal negligence causing a slew of large-scale fires, including the 1994 Trauner fire, the 1996 Mission District of San Francisco fire, and the 1999 Pendola fire.

Besides causing fire hazards, PG&E had been a consequential culprit of various other significant environmental and health and safety disasters, including groundwater contamination that began in the 1950s. The discoveries of such contamination led to at least two large-scale lawsuits against PG&E. One took place in the town of Hinkley, California where PG&E had committed to cover-up of the contamination with the local water board and stalling actions to deal with the contamination until December 1987. Hinkley residents filed a lawsuit against PG&E in 1993, resulting in its payment of US$333 million in 1996, then the largest settlement ever paid in a direct-action lawsuit in US history [5]. Some aspects of the legal process of this case were captured in the 2000 Oscar-winning movie, *Erin Brockovich,* starring Julia Roberts as Brockovich. Another similar lawsuit settlement took place in 2006 in Kings County, California where over 1,100 cases were brought against PG&E. Subsequently, PG&E agreed to pay US$295 million to the residents of Mojave Desert towns [6].

The US Environmental Protection Agency (EPA) states that climate change affects the energy sector with the following four major impacts [7]:

- **Disruption of energy supply:** "… The warmth and variability in precipitation can lead to declining snowpack, shifts in snowmelt, and extended droughts—all of which affect water supplies needed for energy systems."
- **Interruptions to electricity transmission:** "… Transmission lines are prone to damage during extreme weather. Snow and ice, wildfires, and extreme wind can damage above-ground powerlines and transmission towers."
- **Strain on the energy system:** "… Temperatures are rising in all regions of the United States. As the climate warms, Americans are expected to use more energy, mostly electricity, for cooling. This higher demand will also increase the chance of blackouts or other power disruptions. A warming climate also means that Americans are expected to use less energy for heating their homes in the winter. However, increased summer demands for cooling are expected to outweigh any energy-use reductions from lower heating needs."
- **Increased Air Pollution and Climate Change:** "… Increasing energy production is likely to increase emissions of certain air pollutants and greenhouse gases that contribute to climate change."

As the largest utility player in California, the largest state economy in the US and the largest sub-national economy in the world, PG&E is extremely vulnerable to the continuingly exacerbating conditions caused by climate change, probably much more than its industry peers.

3. The 2017 and 2018 Wildfire Catastrophes Unfolded

3.1 2017 Tubbs Wildfires

Propelled by strong winds and dry conditions, the Tubbs Fire ignited in October 2017 near Calistoga in Napa County and rapidly spread to Sonoma County, making it one of the most destructive wildfires in the history of California. The speed and intensity of the fire left residents no time to evacuate, leading to chaos and significant loss. It engulfed a significant portion of the city of Santa Rosa. In total, the fire burned approximately 36,807 acres, destroying 5,600 structures and 22 lives. The Tubbs Fire was a stark example of the escalating danger of wildfires in the region, illustrating the deadly combination of prolonged drought, accumulation of dry vegetation, and unpredictable wind patterns [8].

3.2 2018 Camp Fire

The Camp Fire took place in November 2018. Originating in Butte County, it rapidly became the deadliest and most destructive wildfire in the state's record by then. The town of Paradise, the epicenter of the disaster, was demolished. The Camp Fire burned around 153,336 acres, wrecking roughly 18,800 structures, and causing 85 fatalities [9]. The intensity and rapid spread of the Camp Fire were exacerbated by severe wind conditions, dry vegetation, and low humidity. The magnitude of this disaster underscored the increasing vulnerability of communities to extreme weather events and the urgent need for enhanced fire prevention and management strategies in the face of climate change [10].

3.3 PG&E's Malpractices Linked to the Wildfires

Post the 2018 Camp Fire, the California Department of Forestry and Fire Protection (CAL FIRE) determined that the fire was caused by electrical transmission lines located in the Pulga area that were owned and operated by PG&E [11]. This judgement underscored the critical issues of infrastructure maintenance, vegetation management, and broader implications of climate change on utility operations. The damage from these fires not only highlighted the human and ecological damage but also the financial vulnerabilities utility companies like PG&E faced considering increasingly frequent and more severe wildfire risks. These events call for re-evaluations of future utility practices, regulatory frameworks, and the need for comprehensive strategies to mitigate wildfire risks.

4. Chapter 11 Bankruptcy Filing Explained

Chapter 11 refers to a chapter of the United States Bankruptcy Code, which provides for reorganization, usually involving a corporation or partnership. Chapter 11 bankruptcy allows a business to continue operating while implementing a plan to restructure its debts. This process is designed to help the business keep its doors open, preserve jobs, and pay creditors over time.

PG&E filed for Chapter 11 bankruptcy protection twice in its company history. The first filing was in 2001, largely due to drought conditions causing severe electricity supply shortage and PG&E's inability to supply sufficient electricity to its customers at lower prices set by its regulator, CPUC after having to purchase from out-of-state, non-regulated, or non-long-term contract utilities at much higher prices. The second bankruptcy filing was on January 14, 2019, which was the direct result of PG&E's improperly maintained infrastructure, equipment, vegetation management and other poor management practices causing wildfires exacerbated by climate change. Facing overwhelming liabilities, damage to its reputation, and the need for extensive repairs, PG&E had no choice but to file for bankruptcy protection.

PG&E's 2019 Chapter 11 bankruptcy filing was a significant event in the US utility industry. It was also the largest and one of the most complex bankruptcy filings in US history. It highlighted the challenges utilities companies face in balancing safety, reliability, and financial stability, as well as massive public and environmental impacts, especially in areas prone to natural disasters like wildfires.

5. Financial Markets Responses to PG&E's Chapter 11 Bankruptcy Filing

The following is a list of direct and immediate financial consequences after PG&E filed for Chapter 11 bankruptcy protection on January 14, 2019. They reflected the financial markets' reactions to the company's financial distress and the uncertainties surrounding its future due to the massive liabilities from the 2017 and 2018 California wildfires [12, 13].

5.1 CEO Geisha Williams stepped down and was replaced by General Counsel, John Simon, who served as the interim CEO.
5.2 PG&E stock plunged by ~50% after unveiling a plan to seek bankruptcy protection amid mountainous liabilities linked to California wildfires.
5.3 Nearly all of PG&E's ~$18 billion of bonds were trading sharply lower, sending their yields to record highs, as per Reuters reports, citing data from MarketAxess.
5.4 The bond price drops were particularly large among its nearest maturities, with bonds maturing in October 2020 and May 2021 both falling by more than 7 points in price, with their yield spreads surging to 12.65 and 11.16 percentage points, respectively, much higher than the 4.5 percentage point average spread of high-yield notes over Treasuries.
5.5 On the morning of January 14, 2019, eight of the top 10 most-traded U.S. corporate bonds belonged to PG&E, with the most actively traded $3 billion note coming due in March 2034, according to MarketAxess.

6. Impacts of PG&E's 2019 Chapter 11 Bankruptcy Filing on Businesses, Individual Victims, and Society at Large

6.1 **Shareholders** lost more than $20 billion as PG&E's stock plunged.
6.2 **Insurers** sustained huge costs due to losses triggered in life, health, property, disability, and every other possible form of insurance.
6.3 **Customers** who already paid the second-highest rates in the country faced annual increases of 12-24% over the following three years. The rate increases were likely to go on for decades.
6.4 **Creditors** suffered as PG&E were unable to make good on many of its obligations.
6.5 **Taxpayers** had to bear some costs as well because funds from Federal Emergency Management Agency (FEMA) and other federal agencies' disaster reliefs came from taxpayers.
6.6 **Individual wildfire victims** received US$13.5 billion compensation, half of which would be paid in company stock, resulting in 70,000 fire victims owning 22% of the company.

However, despite the above colossal damages to PG&E company itself as well as to the environment and society at large, in March 2020, PG&E requested a federal court to approve US$454 million in bonuses just days after asking another federal judge, William Alsup, not to force the company to hire more tree trimmers.

7. Lessons Learned from the PG&E Case and Looking into the Future

PG&E's liabilities causing devastating wildfires and its subsequent Chapter 11 bankruptcy filing in 2019 provide us with several key lessons:

7.1 Financial Preparedness for Natural Disasters: The financial impact of the wildfires on PG&E emphasizes the need for utilities to have robust financial strategies to cope with the costs of natural disasters. This includes maintaining adequate insurance coverage, creating reserve funds for disaster response, and developing financial plans that can accommodate unexpected liabilities.

7.2 Climate Change Considerations: The increasing frequency and severity of wildfires in California, or elsewhere for that matter, are greatly attributed to climate change. The hefty prices PG&E has paid serves as a somber reminder of broader implications of climate change for utilities companies. It points to the necessity for the energy sector to adapt to changing environmental conditions and invest in responsible and sustainable practices in infrastructure, vegetation management, equipment maintenance, and green and renewable energy sources.

7.3 Regulatory and Policy Frameworks: PG&E's bankruptcy filing raises questions about regulatory and policy environments governing utilities. Regulatory frameworks need to balance between the needs for utilities companies' financial stability and for investing in safer and more reliable infrastructure. Policies that address liability issues while encouraging pro-active risk management and investment in renewable energy and disaster resilience are crucial.

Today, PG&E's 2019 Chapter 11 bankruptcy filing still speaks about the persistent urgent need for awareness and actions on mitigating climate change and associated risks. This case underpins the critical importance of integrating climate risk management into corporate and public policy decision-making processes. It serves as a stark reminder that the consequences of climate change are not a distant threat but a present and on-going reality, necessitating immediate and concerted efforts to mitigate these risks and reverse climate change.

It is encouraging to know that in 2022, 95% of electricity delivered by PG&E was greenhouse gas emissions-free. The company has emerged to be an industry leader in rooftop solar installations, electric vehicle adoption, grid-level energy storage, and gas-leak detection, which has cut methane emissions from its gas system.

Look into the future, according to PG&E's Climate Strategy report, it is committed to:

- A series of 2030 climate goals to reduce PG&E's carbon footprint and enable its customers and communities to reduce theirs
- A net zero energy system in 2040—five years ahead of California's current carbon neutrality goal
- A climate-and-nature-positive energy system by 2050 [14]

Let's remain vigilant and hopeful that PG&E delivers on its promise.

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