

# California Lawmakers Should Take Action to Mitigate the Effects of the 2019 PG&E Bankruptcy

Erin Sullivan<sup>1\*</sup>, Christopher Jackson<sup>1</sup>, Daniel Broberg<sup>2</sup>, Mark O'Dair<sup>1</sup>, Vetri Velan<sup>3</sup>

<sup>1</sup>University of California, Berkeley, Department of Chemistry

<sup>2</sup>University of California, Berkeley, Department of Materials Science and Engineering

<sup>3</sup>University of California, Berkeley, Department of Physics

\*corresponding author: [ensullivan.21@berkeley.edu](mailto:ensullivan.21@berkeley.edu)

**Keywords:** PG&E, energy, wildfire, California, renewables, decentralization, utilities

## Executive Summary

In early 2019, the Pacific Gas and Electric Company (PG&E), California's largest utility, filed for bankruptcy in anticipation of being held liable for the 2018 Camp Fire, the most deadly wildfire in California history. While PG&E is an investor-owned utility (IOU), it serves 5.2 million households across the northern two-thirds of California and plays a critical role in the state's energy generation, distribution and long-term goals. As the bankruptcy unfolds and California lawmakers decide how to weigh in on these proceedings, we highlight several key topics for consideration: renewable energy, energy access, and wildfire liability. Regardless of the outcome of PG&E's bankruptcy, it is in California's best interest for lawmakers to establish a robust wildfire fund, coordinate energy purchasing and distribution among new local energy providers, and scale up the development of local energy storage.

## I. Introduction

The recent bankruptcy filing by PG&E has left its and California's future uncertain.<sup>1</sup> If California leaders remain detached from PG&E's fate, the result will likely be entirely dictated by economic factors that may not be in the state's best interests. However, lawmakers can mitigate some of the negative outcomes through legislative action that protects California's goals, people, and position as a progressive leader in energy and economic policy. We explore several factors here that should influence legislative decisions regarding PG&E's future.

## II. Renewables

PG&E's uncertain future endangers California's renewable energy targets. California has codified ambitious clean energy goals over the past decade through legislation such as SB 350 (2015), with PG&E leading the way in implementing these policies. In 2017, PG&E delivered 80% of its electricity from renewable or greenhouse-gas free sources, two-thirds cleaner than the

industry average.<sup>2</sup> PG&E has surpassed the renewable energy goals set by the legislature ahead of schedule thanks to its continued investments in new infrastructure and technology.<sup>3</sup>

PG&E plays a critical role in electric vehicle (EV) infrastructure throughout California. In response to Governor Brown's 2012 Executive Order for 1.5 million zero emission vehicles by 2025, PG&E launched their EV Charge Network to install 7,500 EV chargers for commercial vehicles in multi-unit dwelling and workplaces through 2020.<sup>4</sup> The 2019 FleetReady program is expanding infrastructure for medium and heavy-duty EVs, with 700 sites supporting at least 6,500 vehicles.<sup>5</sup> In conjunction, in late 2018, PG&E submitted a proposal to the California Public Utilities Commission (CPUC) to revamp existing demand-based electric rate structures with new subscription pricing, similar to choosing a data plan for a cell-phone bill. These innovations make charging simpler and more affordable for customers, thereby accelerating the adoption of EVs.<sup>6</sup> PG&E has a long history of supporting carbon-free energy, and lawmakers should consider mechanisms to maintain this support now.

### **III. Power Purchase Agreements**

PG&E's investments have been possible thanks to the certainty provided by political support and power purchase agreements (PPAs). PPAs, which are long-term contracts between energy generators and utilities to purchase energy at a fixed price, have contributed to the increase in renewable energy generation by providing fixed revenue for facilities willing to invest in expensive upfront costs.<sup>7</sup> The rise of these facilities and renewables on the market has significantly decreased renewable energy costs.<sup>8</sup>

However, this cost decrease means that many of the 400 existing PPAs PG&E holds are selling energy far above the current market value. For example, the average rate for solar PPAs with PG&E is \$140/MWh,<sup>9</sup> well above the current market value for solar energy at about \$25-30/MWh.<sup>10</sup> Many fear that PG&E's bankruptcy proceedings will reject or amend these PPAs such that their value decreases.<sup>11</sup>

When NextEra Energy's Genesis Solar project had its credit rating downgraded as a result of PG&E's uncertain financial future, NextEra Energy asked the Federal Energy Regulatory Commission (FERC) to step in to prevent PG&E from being able to disassemble these contracts in any way.<sup>12, 13</sup> If this bankruptcy continues a precedent of modifying PPAs, as was done in the 2001 PG&E bankruptcy, it will further disincentivize future investment in renewable energy projects.<sup>14</sup> With the passing of SB 100 (2018), these contracts should be managed in good faith if California wishes to reach its target of 100% renewable energy by 2045.

### **IV. Community Choice Aggregations**

Community Choice Aggregations (CCAs) are load-serving entities formed by local communities (i.e. city or county) to negotiate lower energy prices, typically purchasing a large portion of energy from renewable energy generators through wholesale contracts.<sup>15</sup> After AB 117 (2001) allowed for the formation of CCAs, they gained popularity and expanded across the state because they provide their customers a choice in electricity provider and cheaper energy.<sup>15</sup> Now accounting for ~25% of the state's electric load not provided by an investor-owned utility (IOU), they are also subject to the same renewable targets laid out in SB 350 (2015) and SB 100 (2018).<sup>15</sup> CCAs like MCE in Marin County help customers maximize savings through renewable generation via feed-in tariff and net-metering programs.<sup>16, 17</sup>

CCAs can establish their own rates, but use the distribution mechanism in place from IOUs such as PG&E.<sup>18</sup> Therefore, the liability for providing energy falls upon that utility, not the CCA. Without that utility, CCAs may not be equipped to accept responsibilities such as customer service, energy distribution, and ensuring power access.<sup>15</sup> PG&E's bankruptcy could force CCAs to drastically change, impacting their ability to provide cost-efficient, cleaner energy to customers while offering more choice in their provider.

## **V. Wildfire Liability and Regional Effects**

Damages from the 2018 California wildfires exceeded \$20 billion, a number that is expected to increase in coming years with warmer, drier conditions fueled by climate change.<sup>19, 20</sup> PG&E has developed a reputation of public negligence after violating state law in at least eight of the twelve wildfires ignited by its electric equipment during 2017 and causing the deadly 2018 Camp Fire.<sup>21-23</sup> While many strongly feel that PG&E is to some degree at fault, the legal principle of inverse condemnation allows victims to sue PG&E or the state for damages regardless of proven negligence.<sup>24</sup>

Historically, the legislature has allowed PG&E to recover their wildfire liability costs through electricity rates (SB 901, 2018). While this shields the California government from financial liability, it is a short-term solution to a much larger problem. A permanent mechanism to recover costs must account for the disparities between California's urban and rural communities, which make up 94% and 6% of the population respectively.<sup>25</sup> Urban communities benefit from dense distribution and transmission routes, leading to cheaper grid construction and maintenance. Rural communities are sparser, meaning it costs more to serve these customers.<sup>26</sup> They are often more prone to wildfires, which obviously pose a danger to energy infrastructure.<sup>26, 27</sup> An unequal rate mechanism that charges rural customers more than urban customers may solve some of these problems but would disproportionately hurt rural counties that already have a median household income approximately 23% lower than in urban counties.<sup>25, 26</sup>

Electricity cooperatives (co-ops) — private, independent utilities which are owned, maintained,

and regulated by their customers and typically serve more rural communities — present an alternative solution.<sup>28</sup> PG&E’s bankruptcy may provide an opportunity for co-op expansion in areas with lower customer density, where they can provide more flexibility to help reduce costs and meet each community’s unique needs.<sup>29</sup>

## **VI. Policy Recommendation**

While California lawmakers have limited control over PG&E’s ongoing bankruptcy process, they can work to address the preceding issues and provide legislative support dedicated to victim compensation, the effects of decentralization, and energy storage options.

### **i. Victim Compensation**

As wildfires continue to plague California with increasing intensity and frequency, inverse condemnation does not provide adequate or timely recourse for recovery.<sup>30</sup> A wildfire fund is one alternative mechanism to cover wildfire liability costs and properly compensate victims. This fund will require a compromise between utility shareholders, who must financially contribute, and insurers, who must accept a limit for which they will be reimbursed to cover payments to their insurance policyholders. A further challenge is determining the necessary size of this fund to cover future wildfires.

California’s Earthquake Brace + Bolt (EBB) program establishes a precedent of offering retrofit grants and discounted insurance policies to make older houses more earthquake resistant.<sup>31, 32</sup> With proper funding, a wildfire fund could similarly function to help prepare for and recover from wildfires. One possible funding source is California’s cap-and-trade program which, since 2012, has generated over \$4.4 billion earmarked for lessening the effects of climate change (i.e. wildfires).<sup>33</sup> Lawmakers should ensure that such a fund is quickly established and sourced to protect victims of past and future wildfires.

### **ii. Decentralization**

California customers increasingly source their energy from CCAs and direct access energy service providers (ESPs). Within 5-10 years, 85% of California’s current electric load served by IOUs like PG&E will be served by a non-IOU source.<sup>30</sup> This has left IOUs primarily responsible for constructing, maintaining, and operating the facilities over which electricity is delivered.

Unlike large IOUs, small-scale entities such as CCAs have limited ability to obtain credit ratings and enter into the long-term contracts necessary to meet zero-carbon grid targets by 2045.<sup>30</sup> Additionally, major investments are needed to modernize the state’s electric transmission and distribution system to safeguard against wildfires and accommodate new changes in generation and demand. Without capital, the higher costs of these investments will inevitably be passed down to consumers.

Therefore, we recommend legislation to coordinate energy purchasing by CCAs and ESPs to ensure they meet the state's clean energy and related goals. Furthermore, such legislation should direct research into determining the best mechanisms to secure the transmission and distribution of this energy in a way that benefits all California residents.

### iii. Storage

After windy conditions caused a PG&E transmission line to spark the 2018 Camp Fire, the utility has proposed cutting power on high-wind days to minimize wildfire risk. In some areas, the wildfire season now extends from June through December, with conditions that could force weeks of blackouts.<sup>34</sup>

To prepare for these situations, significant investment in energy storage is needed. Currently, California's Self Generation Incentive Program (SGIP) has authorized about \$830 million for qualifying behind-the-meter technologies through 2025, approximately 75% of which is reserved for energy storage.<sup>35</sup> However, SGIP's impact has recently diminished due to increasing demand, lower costs, and challenging bureaucratic paperwork.<sup>35</sup> SGIP and other mechanisms should be revisited to better incentivize home energy storage.

To accommodate California's diverse needs, we recommend implementing a grant program, with funds allocated based on each community's level of wildfire risk. This would further allow for innovative and tailored solutions including microgrids, solar panels, backup generators, and more.

## **VII. Conclusion**

As California struggles with climate change and growing wildfires, action should be taken to compensate victims and pass legislation such as AB 893 (2018) to ensure utilities maintain aggressive renewable energy goals.<sup>36</sup> This means that structures supporting subsets of the energy market, such as PPAs and CCAs, need to be upheld. Specifically, we recommend California lawmakers establish a robust wildfire fund to prepare and cover liability for future wildfires. We further recommend new legislation to coordinate energy purchasing and distribution by localized entities such as CCAs and ESPs. Finally, the state should invest in the development and distribution of local energy storage, particularly in communities that will face energy intermittency as utilities deal with volatile weather and increased wildfire risk.

PG&E's bankruptcy will have a lasting effect on the California energy market and should be viewed not as a detriment, but an opportunity to advance the state's role as a progressive energy and economic leader. Lawmakers cannot simply accept the outcome of the bankruptcy court, but

must take initiative to promote a sustainable energy market and protect the interests of the California people.

-----

1. Morris, J.D. "PG&E files for bankruptcy, seeking protection from wildfire costs." San Francisco Chronicle. January 29, 2019.  
<https://www.sfchronicle.com/business/article/PG-E-officially-files-for-bankruptcy-seeking-13569611.php>
2. Pacific Gas and Electric Company. "Exploring clean energy solutions." Accessed February 15, 2019.  
[https://www.pge.com/en\\_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page](https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page)
3. Editors of Electric Light & Power / POWERGRID International. "PG&E Meets California's 2020 Renewable Energy Goals." Renewable Energy World, February 21, 2018.  
<https://www.renewableenergyworld.com/articles/2018/02/pg-e-meets-california-s-2020-renewable-energy-goals.html>
4. Pacific Gas and Electric Company. "The EV Charge Network program." Accessed February 15, 2019.  
[https://www.pge.com/en\\_US/large-business/solar-and-vehicles/clean-vehicles/ev-charge-network/program-participants/about-the-program.page](https://www.pge.com/en_US/large-business/solar-and-vehicles/clean-vehicles/ev-charge-network/program-participants/about-the-program.page)
5. Pacific Gas and Electric Company. "FleetReady program." Accessed February 15, 2019.  
[https://www.pge.com/en\\_US/large-business/solar-and-vehicles/clean-vehicles/ev-charge-network/fleetready.page?WT.mc\\_id=Vanity\\_fleetready](https://www.pge.com/en_US/large-business/solar-and-vehicles/clean-vehicles/ev-charge-network/fleetready.page?WT.mc_id=Vanity_fleetready)
6. Pacific Gas and Electric Company. "PG&E Proposes to Establish New Commercial Electric Vehicle Rate Class." MarketWatch. November 5, 2018.  
<https://www.marketwatch.com/press-release/pge-proposes-to-establish-new-commercial-electric-vehicle-rate-class-2018-11-05>
7. International Renewable Energy Agency. "Power Purchase Agreements for Renewable Energy Generation." 2018. Accessed February 15, 2019.  
<https://www.irena.org/-/media/Files/IRENA/Agency/Events/2018/Aug/Renewable-Energy-PAs.pdf?la=en&hash=C365D5D08EBFF26A1F7A29A13D721C5B3C4390D9>
8. International Renewable Energy Agency. "Renewable Power: Sharply Falling Generation Costs." 2017. Accessed February 15, 2019.  
[https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Nov/%20IRENA\\_Shareply\\_falling\\_costs\\_2017.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Nov/%20IRENA_Shareply_falling_costs_2017.pdf)

9. St. John, J. "The Big Questions Raised by PG&E's Coming Bankruptcy." Greentech Media. January 16, 2019.  
<https://www.greentechmedia.com/articles/read/pge-questions-coming-bankruptcy>
10. St. John, J. "If Wildfires Drive PG&E Into Bankruptcy, What Happens to Renewable Energy Contracts?" Greentech Media. November 20, 2018.  
<https://www.greentechmedia.com/articles/read/if-wildfires-drive-pge-into-bankruptcy-what-happens-to-its-renewable-energy#gs.wK97y6xy>
11. Trabish, H.K. "Bailout Doubt-PG&E faces bankruptcy amid California's 'first climate change-caused emergency.'" Utility Dive. January 22, 2019.  
<https://www.utilitydive.com/news/bailout-doubt-pge-faces-bankruptcy-amid-californias-first-climate-chan/546471/>
12. Cohen, A. "Part II: How Lacklust Grid Maintenance Jeopardizes California's Green Energy Future." Forbes. February 8, 2019.  
<https://www.forbes.com/sites/arielcohen/2019/02/08/part-ii-pge-negligence-jeopardizes-californias-green-energy-future/#621eda3a7d98>
13. Walton, R. "PG&E, NextEra face off in bankruptcy-related FERC filings." Utility Dive. January 23, 2019.  
<https://www.utilitydive.com/news/pge-nextera-face-off-in-bankruptcy-related-ferc-filings/546560/>
14. Attorneys for Debtor and Debtor Possession Pacific Gas and Electric Company. "Notice Of Intention To Amend And Assume Power Purchase Agreements Between Pacific Gas And Electric Company And Operators Of Various Qualifying Facilities According To The Schedule Filed Herewith, Pursuant To (Oral) Order Of The Court Made August 3, 2001." United States Bankruptcy Court Northern District of California San Francisco Division. Case No. 01-30923 DM. Accessed February 18, 2019.  
<https://www.nrc.gov/docs/ML0124/ML012400378.pdf>
15. Colvin, M., Fellman, D. I., Rodriguez, R. L., LaBonte, A. "California Customer Choice An Evaluation of Regulatory Framework Options for an Evolving Electricity Market." California Public Utilities Commission. May 2018.  
[http://www.cpuc.ca.gov/uploadedFiles/CPUC\\_Public\\_Website/Content/Utilities\\_and\\_Industries/Energy\\_-\\_Electricity\\_and\\_Natural\\_Gas/Cal%20Customer%20Choice%20Report%20%20v5-17-18.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Cal%20Customer%20Choice%20Report%20%20v5-17-18.pdf)
16. MCE Clean Energy. "How MCE's Net Energy Metering (NEM) Program Works." Accessed February 15, 2019. <https://www.mcecleanenergy.org/solar-customers/#NEM-overview>
17. MCE Clean Energy. "Feed-In Tariff." Accessed February 28, 2019.  
<https://www.mcecleanenergy.org/feed-in-tariff/>
18. Mow, B. Community Choice Aggregation (CCA) Helping Communities Reach Renewable Energy Goals. (blog) NREL. September 19, 2017.

<https://www.nrel.gov/state-local-tribal/blog/posts/community-choice-aggregation-cca-helping-communities-reach-renewable-energy-goals.html>

19. Helman, C. "As \$30B In Wildfire Claims Bankrupts PG&E, California Wonders Who Will Pay After The Next Conflagration." Forbes. January 21, 2019.  
<https://www.forbes.com/sites/christopherhelman/2019/01/21/as-30b-in-wildfire-claims-bankrupt-pge-california-wonders-who-will-pay-after-the-next-conflagration/#5729dbc32699>
20. United States Global Change Research Program. "Fourth National Climate Assessment." Vol 2. 2018. <https://nca2018.globalchange.gov/>
21. Bizjak, T., Kalser, D. "PG&E broke laws in 12 NorCal wildfires, Cal Fire found. Prosecutors may not file charges." The Sacramento Bee. December 21, 2018.  
<https://www.sacbee.com/latest-news/article223213665.html>
22. Mohler, M. "CAL FIRE Investigators Determine Causes of 12 Wildfires in Mendocino, Humboldt, Butte, Sonoma, Lake, and Napa Counties." Cal Fire News Release. June 8, 2018.  
[http://calfire.ca.gov/communications/downloads/newsreleases/2018/2017\\_WildfireSiege\\_Cause.pdf](http://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause.pdf)
23. Gonzales, R. "PG&E Transmission Lines Caused California's Deadliest Wildfire, State Officials Say." NPR. May 15, 2019.  
<https://www.npr.org/2019/05/15/723753237/pg-e-transmission-lines-caused-californias-deadliest-wildfire-state-officials-sa>
24. Baker, D. "The California Rule That Doomed PG&E: Inverse Condemnation." Bloomberg. January 15, 2019.  
<https://www.bloomberg.com/news/articles/2019-01-15/the-california-rule-that-doomed-pg-e-inverse-condemnation>
25. California Communities Program. "Quick Facts about Rural California." University of California Agriculture and Natural Resources. Accessed February 15, 2019.  
[https://ucanr.edu/sites/UC\\_CCP/files/125967.pdf](https://ucanr.edu/sites/UC_CCP/files/125967.pdf)
26. Baker, D. "Wildfires inspire new idea: Charging rural customers more for electricity." San Francisco Chronicle. February 19, 2018.  
<https://www.sfchronicle.com/business/article/Wildfires-inspire-new-idea-Charging-rural-12623750.php>
27. Barron, L., Gajanan, M. "California's Wildfires Have Become Bigger, Deadlier, and More Costly. Here's Why." TIME, November 13, 2018.  
<http://time.com/4985252/california-wildfires-fires-climate-change/>
28. Golden State Power Cooperative. "Electric Co-op Difference." Accessed February 19, 2019.  
<https://www.gspower.org/about/electric-co-op-difference/>
29. America's Electric Cooperatives. "Power Supply." Accessed February 19, 2019.  
<https://www.electric.coop/on-the-issues/power-supply/>
30. Governor Newsom's Strike Force. "Wildfires and Climate Change: California's Energy Future." April 12, 2019.

<https://www.gov.ca.gov/wp-content/uploads/2019/04/Wildfires-and-Climate-Change-California%E2%80%99s-Energy-Future.pdf>

31. "Registration Opens For 2019 Seismic Retrofit Grant Program in California." Insurance Journal. October 9, 2018.  
<https://www.insurancejournal.com/news/west/2018/10/09/503778.htm>
32. California Residential Mitigation Program. " Who We Are." Accessed May 16, 2019.  
<https://www.earthquakebracebolt.com/Content/WhoWeAre>
33. "The 2017-18 Budget: Cap-and-Trade." Legislative Analyst's Office. February 2017.  
<https://lao.ca.gov/reports/2017/3553/cap-and-trade-021317.pdf>
34. Chediak, M., Eckhouse, B. "California May Go Dark This Summer, and Most Aren't Ready." Bloomberg. May 12, 2019.  
<https://www.bloomberg.com/news/articles/2019-05-12/california-may-go-dark-this-summer-and-most-aren-t-ready>
35. St. John, J. "California Passes Bill to Extend \$800M in Incentives for Behind-the-Meter Batteries." Greentech Media. August 31, 2018.  
<https://www.greentechmedia.com/articles/read/california-passes-bill-to-extend-incentives-for-behind-the-meter-batteries#gs.btyfqf>
36. St. John, J. "California Legislative Roundup: What Passed and What Didn't." Greentech Media. September 5, 2018.  
<https://www.greentechmedia.com/articles/read/california-legislative-roundup-what-passed-and-what-didnt>