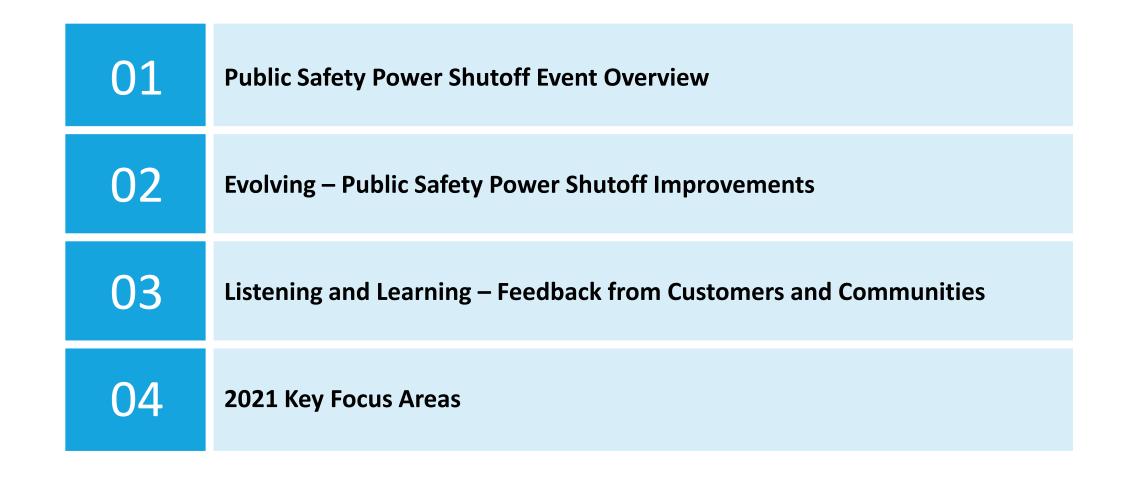
2021 Wildfire Mitigation Plan Workshop

Public Safety Power Shutoff

February 23, 2021



Agenda





PSPS Event Overview

	2018	2019	2020	2021
NUMBER OF PSPS EVENTS	1	9	6	1
AVERAGE NUMBER OF CUSTOMERS IMPACTED	60,000	226,000	109,000	5,099
LARGEST CUSTOMER IMPACT EVENT	60,000	968,000	345,470	5,099
AVERAGE RESTORATION TIME	15 HRS	17 HRS	10 HRS	62 HRS

	2020					2021	
EVENT DETAILS	SEPT 7 – 10	SEPT 27 – 29	OCT 14 – 17	OCT 21 – 23	OCT 25 – 28	DEC 2 – 3	JAN 19 – 21
CUSTOMERS IMPACTED	171,947	64,297	40,574	30,154	345,470	617	5,099
COUNTIES IN SCOPE	22	15	19	7	35	1	7
TRIBES IN SCOPE	8	0	1	2	14	0	0
COMMUNITY RESOURCE CENTERS OPEN	50	29	40	19	106	1	7 †
PEAK WIND GUSTS	66 MPH	72 MPH	73 MPH	56 MPH	89 MPH	72 MPH	83 MPH
DAMAGE/HAZARDS	83	11	28	8	126	1	423
CUSTOMER IMPACT REDUCTION VS. 2019 SCOPE	55%	61%	80%	47%	47%	19%	96%

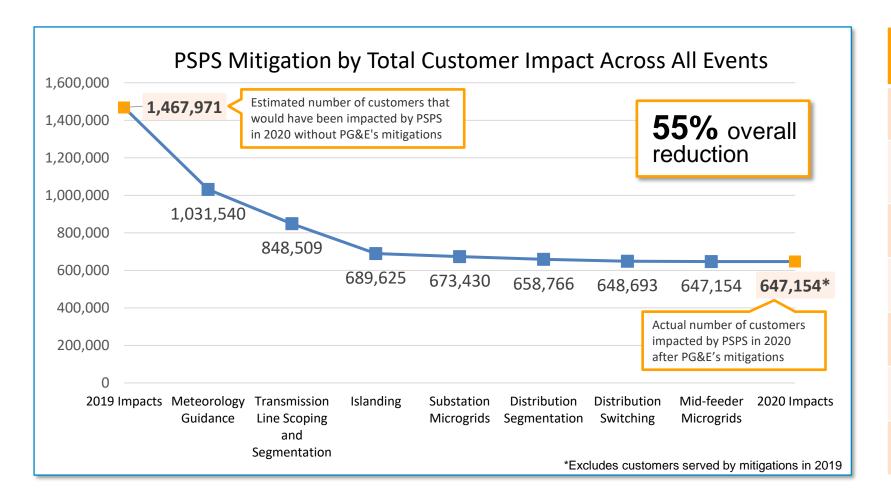
Data included in this slide is as of 02/08/21 and subject to change

†Does not include resource centers activated for wind event



2020 PSPS Events – Mitigation Impacts

In 2020, PG&E significantly reduced the PSPS customer impacts through updates to our meteorology guidance, system upgrades, and operational improvements specifically designed to mitigate PSPS impacts on our customers.



Mitigation	Customer Reduction	Percent Impact
Meteorology Guidance	436,431	53%
Transmission Line Scoping and Segmentation	183,031	22%
Islanding	158,884	19%
Substation Microgrids	16,195	2%
Distribution Segmentation	14,664	2%
Distribution Switching	10,073	1%
Mid-feeder Microgrids	1,539	-



Public Safety Power Shutoff Improvements

We are continuing to improve our Public Safety Power Shutoff (PSPS) Program. Improvements to the program have included enhanced operations, communication and coordination before, during and after PSPS events.

2018

Launch Wildfire Safety and PSPS Programs

 PSPS scope included Tier 3 distribution lines and lowvoltage transmission lines (potential to impact ~500K total customers)



Key Learning: program scope too

2019

Expand PSPS Program Scope

- Expanded PSPS scope to all distribution and transmission lines in Tier 2/Tier 3 areas
- Public awareness campaign rolled out for more than 5M customers



Key Learning: customer support and event execution must improve

2020

Target PSPS Events to Highest Risk Areas

- Top to bottom re-engineering of entire PSPS operation
- Developed more granular meteorological scoping capabilities
- Developed a structure-by-structure analysis of the transmission system to allow more targeted scoping
- Improved local partnerships and customer support



Key Learning: program must continue to evolve to capture catastrophic wildfire risk

2021

Continuous Improvement & Further Risk Reduction

- Improve distribution scoping analysis to further incorporate tree overstrike potential
- Focus on opportunities to support customers repeatedly impacted
- Continue to increase resiliency to offer other wildfire risk mitigations in lieu of PSPS

1 Event | 60K Customers

9 Events | **2M** Customers

6 Events | 653K Customers

1 Event | **5K** Customers

All numbers are approximate



Feedback from 2020 PSPS Events

Our customers and communities recognized the improvements we made this PSPS season. While our processes improved compared to last year, we must continue to do better.

Customers

What we've heard from our customers:

- They feel they are unjustly suffering the consequences of company's past actions
- They have experienced inaccurate or inconsistent information
- They want more accurate restoration times
- They lose time and money due to PSPS
- Medical Baseline customers want additional support and information

Agencies

What we've heard from our communities:

- Provide more consistent, timely and accurate info on the PSPS Portal and other channels
- Build on partnerships with CBOs and explore other resource offerings
- Continue engagement around Community Resource Centers, backup generation and microgrids
- Increase coordination with telecom providers

Other Feedback

What we've heard internally and from others:

- Improve and automate EOC processes to expedite PSPS coordination and communications
- Refine restoration process and communications
- Year-round extreme weather impacting EOC activation and field teams
- Additional consideration of vegetation risks in PSPS decision making



2021 Key Focus Areas

We continue to evolve our wildfire safety and PSPS programs based on lessons learned, new data and feedback received from our customers and communities.



Customer Preparedness and **Support**

- Enhance and expand CBO partnerships and improve in event coordination
- Drive greater participation in battery programs to help vulnerable and frequently impacted customers
- Further refinement of event notification content and timing
- Refine Community Resource Centers
- Continue to host webinars, open houses and safety town halls to gather feedback, share information and drive preparedness



Agency/Tribal Outreach and Support

- Continue to improve information sharing during an event (i.e. PSPS Portal, situation report etc.)
- Conduct trainings and exercises to help public safety partners prepare
- Ongoing engagement and coordination with cities, counties and tribes through Regional Working Groups, advisory committees, working sessions and direct outreach
- Share information about local wildfire safety projects and temporary generation



Operational Improvements

- Ongoing systemwide improvements to reduce scope and duration
- Continue to refine and improve PSPS decision-making, scoping process and tools
- Enhance data quality, accuracy and reporting capabilities
- Drive greater consistency in information sharing across all channels during an event
- Additional training and support for EOC staff to ensure in-event readiness
- Develop longer-term program plan and potential asset-based solutions