

Pacific Gas and Electric Company

PUBLIC SAFETY POWER SHUTOFFS (PSPS) WORKSHOP

April 18, 2023





Discussion Topics and Presenters

- 1 Year-Over-Year Wildfire Risk and PSPS Comparison
- 2 Meteorology Tools
- 3 Engaging with Customers and Public Safety Partners
- 4 Customer Support and Resources
- 5 What We're Doing This Year
- 6 Q&A

PG&E SPEAKERS

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Year-Over-Year Wildfire Risk and PSPS Comparison



Responding to Evolving Wildfire Risk

2020

2021

2022

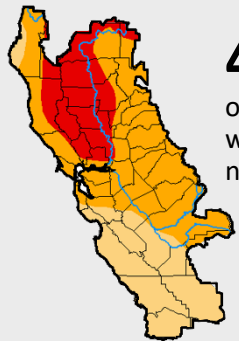
2023

CLIMATE CHANGE LEADING TO A PROLONGED AND INTENSIFIED WILDFIRE SEASON

Drought-intensified wildfire risk

Moderate drought conditions

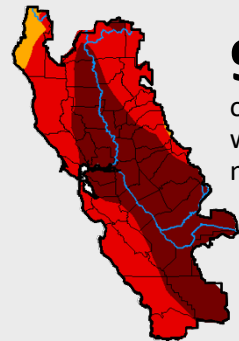
Significant increase in wildfire activity on non-Red Flag Warning (RFW) days



47%

of acreage burned by wildfires ignited on non-RFW days

U.S. drought monitor
Map as of 12/29/2020

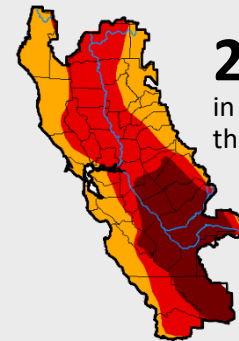


95%

of acreage burned by wildfires ignited on non-RFW days

U.S. drought monitor
Map as of 11/2/2021

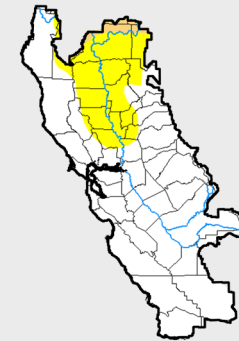
★ **Implementation of EPSS pilot**



2nd driest year in the last 128 years through peak wildfire season

U.S. drought monitor
Map as of 11/1/2022

Expansion of EPSS to all high fire-risk areas



~25% of CA remains in drought

U.S. drought monitor
Map as of 4/4/2023

Adding additional protection and refining EPSS

● **99% reduction in acres burned
68% reduction in ignitions**

MAP LEGEND

■ D0: Abnormally dry
 ■ D1: Moderate drought
 ■ D2: Severe drought
 ■ D3: Extreme drought
 ■ D4: Exceptional drought
 PG&E service area

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Year-Over-Year PSPS Comparison

PSPS impacts have declined significantly through new, advanced technologies and improvements to the electric system infrastructure.

Event Details	2019	2020	2021	2022
PSPS Events	7	6	5	0
Customers Impacted	2,014,000	653,000	80,400	-
Average Number of Counties Impacted	17	17	10	-
Average Outage Duration (hours)	43	35	31	-
Average Outage Restoration Time (hours)	17	10	12	-
Damage/Hazards	722	257	442	-
Peak Wind Gusts	102 MPH	89 MPH	102 MPH	-
Potential Impacted Acreage Prevented	3.5M	912K	691K	-
Potential Damaged Structures Prevented	280K	196K	86K	-

How We Monitor, Analyze and Forecast Severe Weather

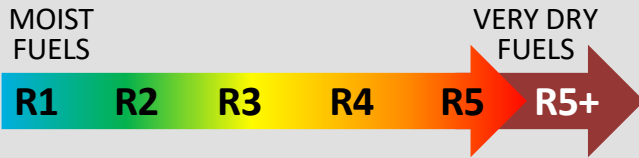


Advanced Tools To Help Us Analyze Fire Risk

We use state-of-the-art machine learning models to identify when the risk of a catastrophic fire is greatest.

PG&E Fire Potential Index (FPI)

Daily ratings across our entire service area.

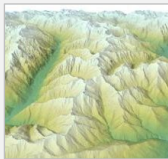


BY MEASURING:

Weather



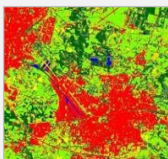
Topography



Fuel Moisture



Fuel Model Type

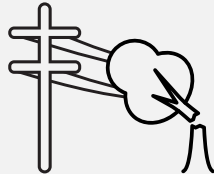


Outage and Ignition Probability Weather Models (IPW, OPW)

Potential for an ignition from damage during weather events.

BY MEASURING:

Vegetation Risk



Local Outage Trends



Equipment Failures/ Malfunctions



Animal/ 3rd Party Damage

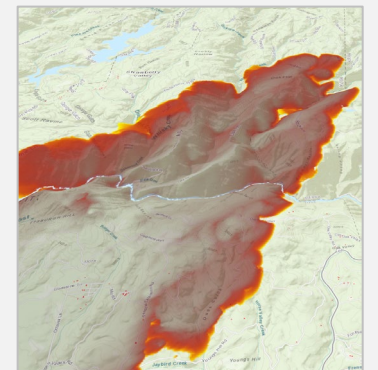


Catastrophic Fire Behavior

Technosylva fire spread simulations to predict risk.

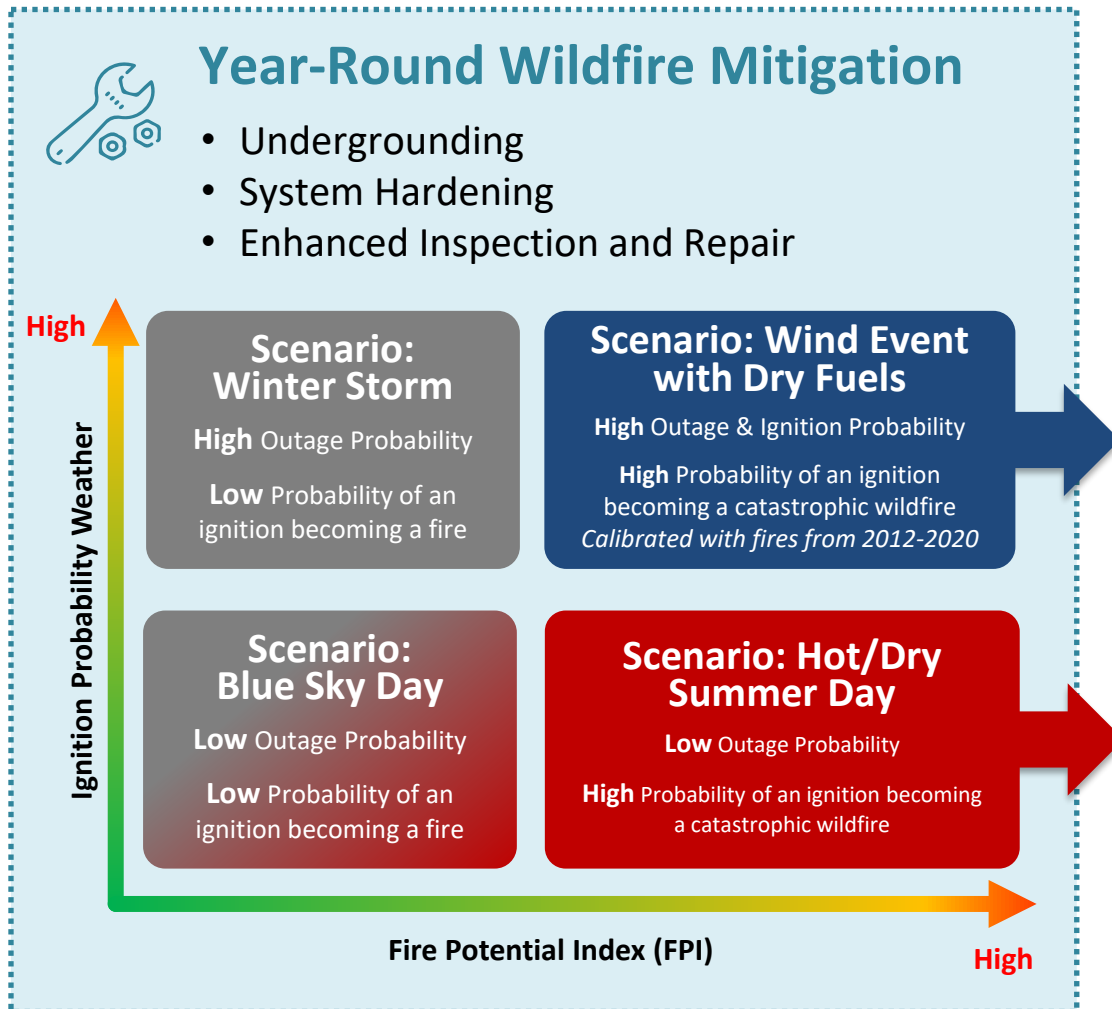
BY MEASURING:

- ▶ Flame length
- ▶ Rate of spread
- ▶ Containment difficulty
- ▶ Historical fires



Using Data to Forecast Catastrophic Fire Risk

We combine our FPI, IPW, and OPW to forecast the probability of a wildfire becoming catastrophic and then implement a weather-driven response.



Weather-Driven Response

Public Safety Power Shutoff (PSPS)

Turning off power during severe weather to prevent tree branches and debris from contacting energized lines during severe weather.



Enhanced Powerline Safety Settings (EPSS)

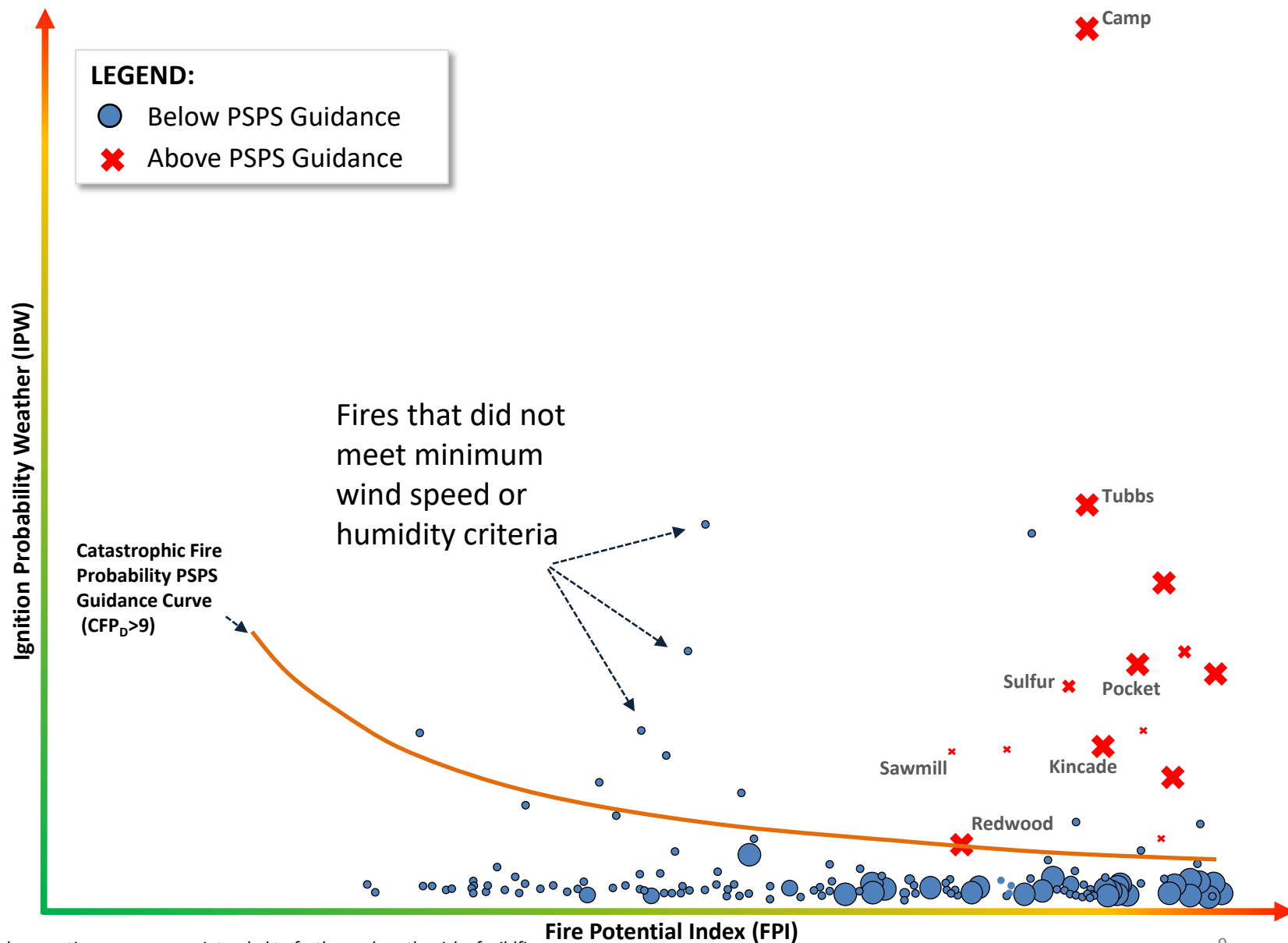
EPSS enabled powerlines allows power turn off within one tenth of a second if a tree branch or object strikes the line providing mitigation against high-risk ignitions.



Ensuring Our Models Are Capturing The Right Risk

We analyzed the most destructive historic fires to make sure our models would have recommended a PSPS for safety.

These fires were captured, while models balanced customer impacts.



Engaging With Customers and Public Safety Partners





Sharing Information with Customers

We shared information with customers through various channels in 2022.

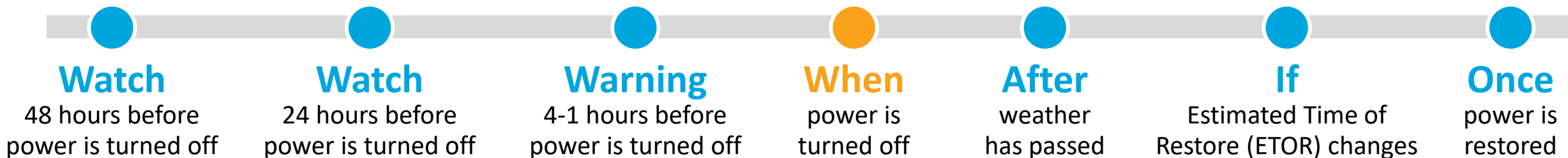
- 432M+** Digital and social media impressions
- 41,345** Radio and television ads (60% broadcast and cable; 40% radio)
- 300** Social media posts, reaching 1.3M customers
- 104** Emails and direct mail items
- ~60** Collateral and fact sheets
- 23** Customer webinars and town halls completed
- 4** Bill inserts

We also improved our outreach and engagement efforts last year by:

- Enhancing our preparedness offerings and support for AFN customers
- Adding more support options during a PSPS for AFN customers
- Promoting our Medical Baseline Program through an instructional video in English, Spanish, Chinese and ASL

How Are Customers Notified for a PSPS?

When We'll Notify



How We'll Notify

Automated calls, texts and emails (available in sixteen languages).

We will also use pge.com, social media and will inform local news and radio.



@pacificgasandelectric



@PGE4Me



@pacificgasandelectric

How To Receive Notifications For Any Address

Anyone can sign up for **address alerts in 16 languages** to receive PSPS notifications for any location, such as their work or child's school.



Enroll at: **pge.com/addressalerts**

Annual registration is required.

Updates To Our PSPS Notifications

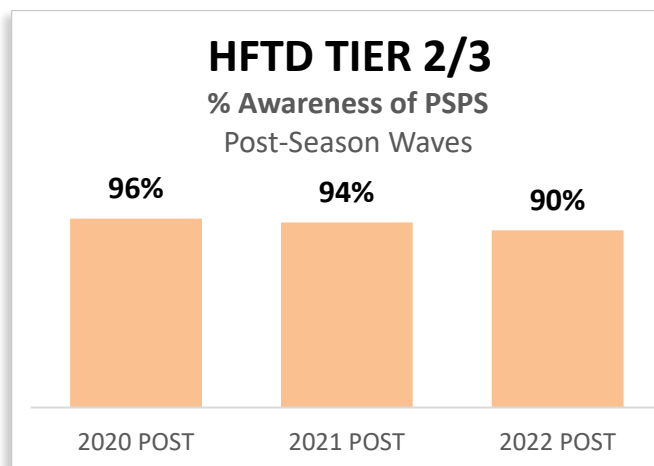
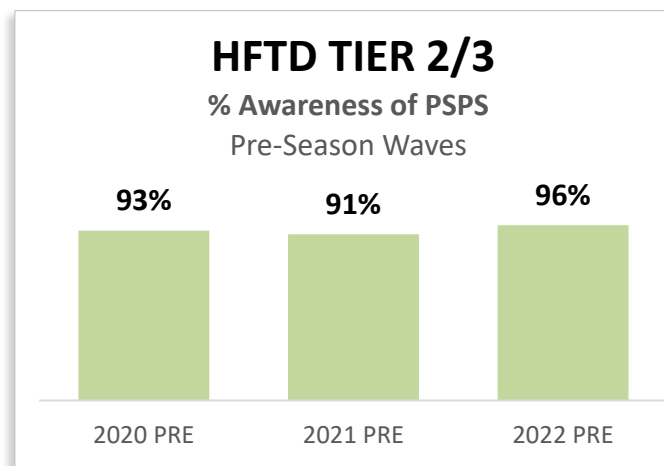
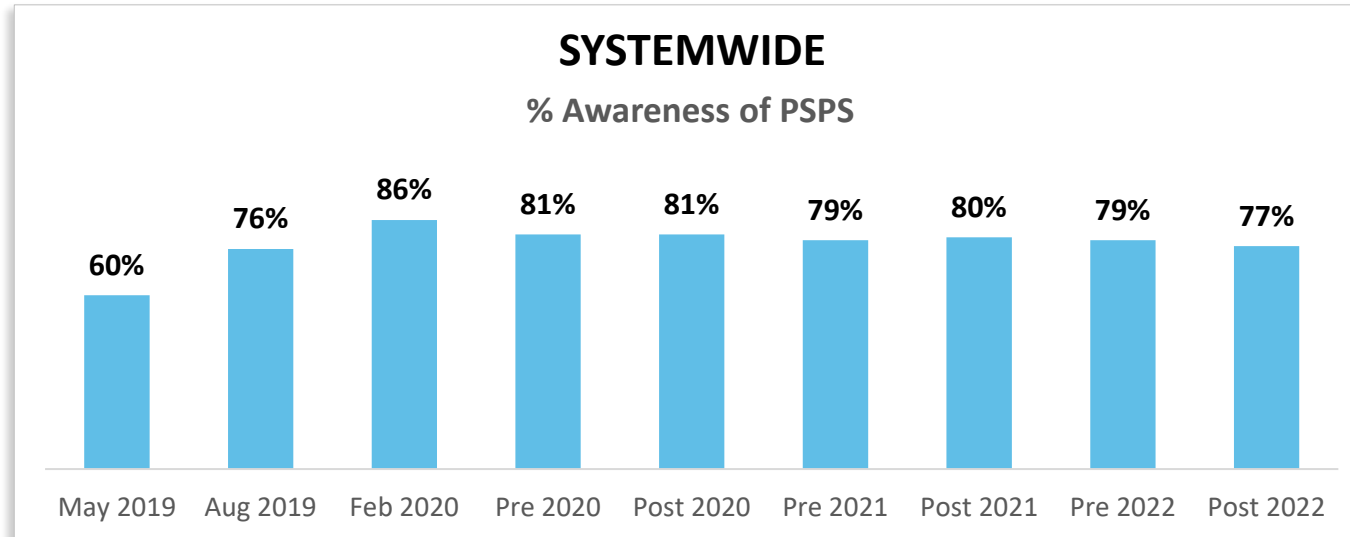
We improved our notifications last year based on feedback received.

- Providing additional notifications, including doorbell rings, for customers who depend on durable medical equipment or assistive technology
- Adding two new customer notifications
- Distributing notifications around the clock, so customers have the information they need, when they need it
- Making sure customers cannot accidentally opt out of notifications



Listening to Customers

Twice a year, we survey customers to gather their feedback and identify ways to improve.



Key Takeaways

- PSPS awareness remains high despite zero outages in 2022
- Communication recall, PSPS awareness, and feelings of preparedness were significantly higher in HFTDs
- Significant improvements in attitude toward PG&E's efforts
- 2022 pre-season outreach was successful

Sharing Information with Public Safety Partners

We shared information with Public Safety Partners throughout 2022 and will continue consistent engagement to help them plan and prepare.

2022 TARGETED ENGAGEMENTS	COMPLETED IN 2022
CWSP Advisory Committee	4
Regional Working Groups	20
Local Government Forums	110
PSPS Exercises and Seminar	6
Tribal CWSP Webinar	1
Public Safety Partner Webinars	5
Data Portals Trainings	8
Additional Ad-Hoc Meetings and Events	400+

Data as of 12/31/2022

During a PSPS, we share information through multiple channels:



- Texts, emails and phone calls
- Agency Portal with situation reports, outage maps, customer lists
- State Executive Briefing
- Systemwide Cooperators Calls
- Cooperators Communications
- Agency Representative
- Third-party representative
- Notifying Public Safety Answering Points (PSAP)
- Critical Infrastructure Lead

Customer Support and Resources



Community Resource Centers (CRC)

We maintain a robust portfolio of CRC locations throughout our service area, concentrated in areas with the highest PSPS risk.

2022 Program Updates

- ✓ Opened five CRCs during the October 2022 weather event, supporting 575 visitors
- ✓ Piloted a program to allow visitors to leave unattended medical devices charging
- ✓ Refined staff trainings focused on serving AFN customers



116
Indoor sites



286
Outdoor sites

2022 CRC Usage

County	Site Name	Address	Day: 10/22	Day 2: 10/23	Total Attendance
Colusa	Indian Valley Elementary School	5180 Lodoga Stonyford Rd, Stonyford, CA 95979	0900 - 2200	0800 - 1415	26
Glenn	Elk Creek Junior Senior High School	3430 Co Rd 309, Elk Creek, CA 95939	0800 - 2200	0800 - 1330	45
Tehama	Rancho Tehama Association	17605 Park Terrace Rd, Corning, CA 96021	0800 - 2200	-	392
Tehama	Flournoy Elementary School	15850 Paskenta Rd, Flournoy, CA 96029	0800 - 2200	-	25
Tehama	Lassen Mineral Lodge	18961 Husky Way, Mineral, CA 96063	0800 - 2200	0800 - 2200	87

Improved Support For Our Most Vulnerable Customers

We improved our support of access and functional needs and Medical Baseline customers last year.

Medical Baseline

- Expanded Medical Baseline and Self-Certified Vulnerable customer notification process to include electricity-dependent individuals
- Requested approval to begin working with customers on program improvements making renewal easier
- Launched paid media radio ads promoting our Medical Baseline Program

Access and Functional Needs

- Implemented a self-identification campaign to assess customers disability and equipment-dependent status
- Secured multiple agreements to provide accessible transportation to and from CRCs
- Launched paid media radio ads promoting Disability Disaster Access and Resources (DDAR)



Helping More Customers Access Support

Program	2022 Qualifications	2023 Qualifications	Customer Offerings
Portable Battery Program (PBP)	<ul style="list-style-type: none"> Enrolled in PG&E's Medical Baseline Program (MBL) and Located in a Tier 2/3 HFTD or have experienced 2+ PSPS outages since 2020 	<ul style="list-style-type: none"> Enrolled in MBL or Self-Identified as Vulnerable and have assistive technology or durable medical equipment Must have experienced at least one PSPS outage in 2021 or 5 or more EPSS outages in 2022 	No-cost portable battery, mini-fridge, and insulin cooler wallet
Disability Disaster Access and Resources (DDAR)	<ul style="list-style-type: none"> Must be an electricity-dependent individual with Access and Functional Needs (AFN*) and Located in a Tier 2/3 HFTD and experienced 2 or more PSPS outages since 2020 		No-cost portable battery, in-event support such as accessible hotel rooms, transportation, fuel cards for generators and food vouchers
Self-Generation Incentive Program (SGIP)	<ul style="list-style-type: none"> General market funds available to all customers, offsetting 15% - 20% of home battery cost 		\$1,500 Incentive on permanent battery
	<ul style="list-style-type: none"> Equity Resiliency Budget incentives are available for customers who: <ul style="list-style-type: none"> Live in Tier 2/3 HFTD or have experienced 2+ PSPS outages and Are a MBL, Low Income, SASH, DAC-SASH, MASH, SOMAH, or electric well pump customer 		100% Incentive offsetting full cost of permanent battery
Fixed Power Solutions: Residential Storage Initiative	<ul style="list-style-type: none"> Must be enrolled in CARE and meet eligibility 		No-cost permanent battery and installation
Generator and Battery Rebate Program (GBRP)	<ul style="list-style-type: none"> Have a residential/business PG&E electric account and Located in a Tier 2/3 HFTD, served by an EPSS-capable line and experienced 2+ PSPS outages and Products purchased must be on the qualified products list 	<ul style="list-style-type: none"> Have a residential or business PG&E electric account and Located in a Tier 2/3 HFTD or served by an EPSS-protected circuit and Products purchased must be on the qualified products list 	\$300 rebate to offset cost of a portable generator or battery and \$200 rebate (or \$500 total) if customer is CARE/FERA
Backup Power Transfer Meter Program	<ul style="list-style-type: none"> Focused on Tier 2 or Tier 3 HFTD and/or served by an EPSS-protected circuit Participant must be the PG&E customer of record Participant is the owner of the site or has the owner's permission for the site's participation 		No-cost meter and installation

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.



Support Provided

Program	2020	2021	2022	2023 Year-To-Date	Total Inception-To-Date	2023 Target
Portable Battery Program (PBP)	5,569	5,135	7,780	143	18,627	4,700 batteries
Disability Disaster Access and Resources (DDAR)	<ul style="list-style-type: none"> • 1,004 batteries • 1,650 assessments • 550 hotels • 900 food vouchers • 50 gas cards • 30 transportation 	<ul style="list-style-type: none"> • 1,371 batteries • 2,405 assessments • 348 hotels • 348 food vouchers • 36 gas cards • 2 transportation 	<ul style="list-style-type: none"> • 1,667 batteries • 2,472 assessments • 0 other in-event support (no PSPS in 2022) 	<ul style="list-style-type: none"> • 323 batteries* • 928 assessments • As needed in-event support 	<ul style="list-style-type: none"> • 4,314 batteries • 7,754 assessments • 898 hotels** • 1,248 food vouchers** • 86 gas cards** • 32 transportation** 	800 batteries
Self-Generation Incentive Program (SGIP) Interconnections	<ul style="list-style-type: none"> • 608 ERB • 3,791 other SGIP 	<ul style="list-style-type: none"> • 1,785 ERB • 3,812 other SGIP 	<ul style="list-style-type: none"> • 1,819 ERB • 3,650 other SGIP 	<ul style="list-style-type: none"> • 312 ERB* • 435 other SGIP 	<ul style="list-style-type: none"> • 4,524 ERB • 11,688 other SGIP 	<ul style="list-style-type: none"> • 950 ERB • 1,850 other SGIP
Fixed Power Solutions: Residential Storage Initiative	N/A	N/A	29 permanent battery storage installations	44 permanent battery storage installations	73 permanent battery storage installations	550 – 750 permanent battery storage installations
Generator and Battery Rebate Program (GBRP)	108	1,200	2,244	534*	4,086	2,500 rebates
Backup Power Transfer Meter Program	N/A	84	1,344	288*	1,716	3,000 installations

*As of March 2023, YTD, **No PSPS events in 2023

Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

2023 Outlook



Key Wildfire Safety Objectives This Year

Prevent Wildfires



Reduce Impacts to Communities



Enhance Customer Support





Multiple Layers of Protection

Our layers of protection work together to reduce wildfire risk and strengthen our electric grid.

Ongoing Safety Efforts

Vegetation Management

System Inspections

Long-Term System Improvements

Undergrounding Powerlines

Overhead System Hardening

Situational Awareness

High-Definition Cameras

Weather Stations

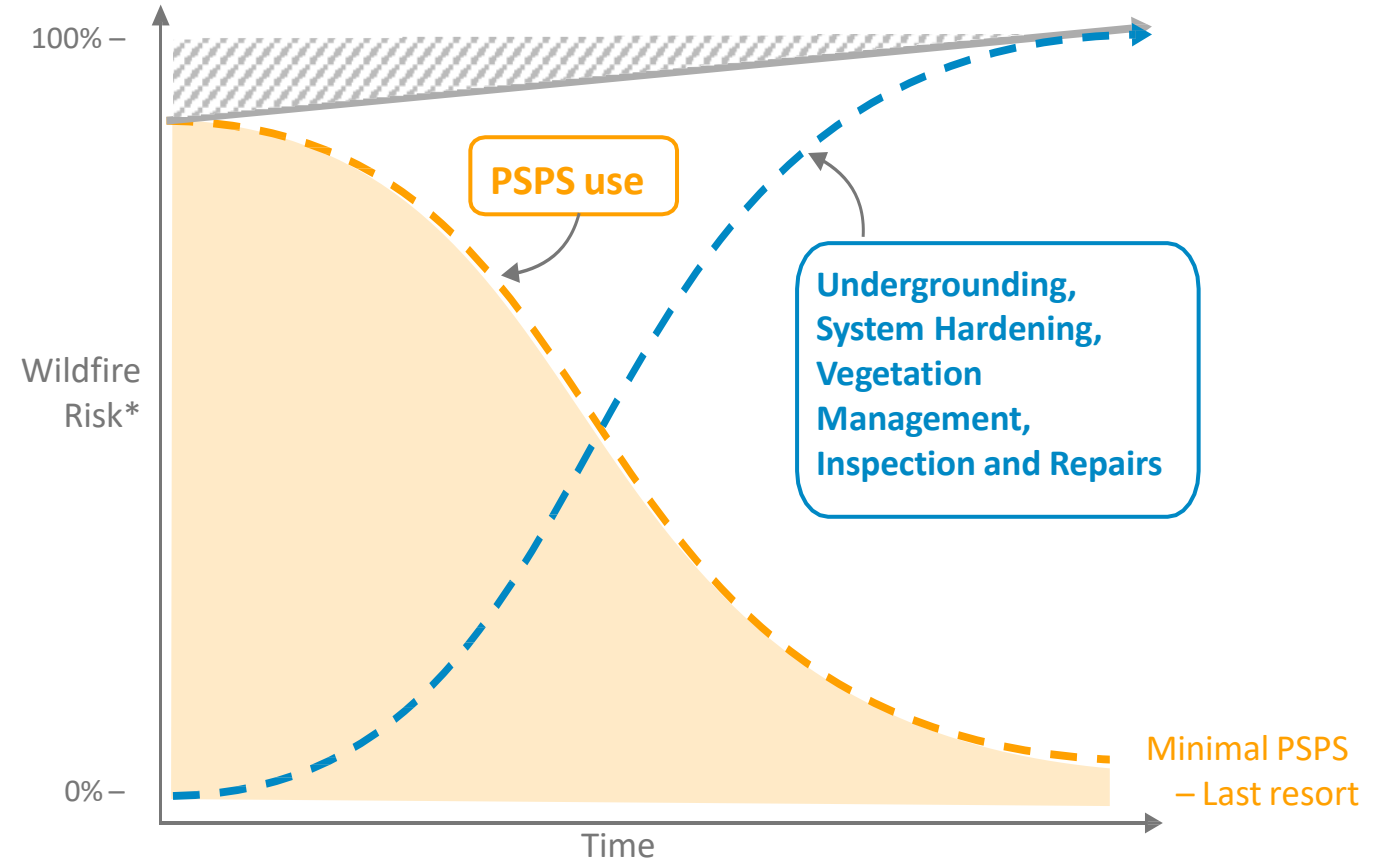
Safety Programs and Technology

Public Safety Power Shutoffs

Enhanced Powerline Safety Settings

Reducing PSPS Over Time

With efforts like undergrounding and system hardening, **PSPS** as a measure of last resort will continue to decline.



Q&A



Thank You

