

Public Safety Power Shutoff (PSPS)

CALIFORNIA PUBLIC UTILITIES COMMISSION STAFF BRIEFING

July 14, 2022





Topics for Discussion

- 1 2022 Overview
- 2 Mitigation Efforts
- 3 Public Safety Partner Engagement
- 4 Customer Resources and Engagement

PG&E Presenters

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Each year, we improve our PSPS Program to:

- Further refine our ability to identify and mitigate catastrophic wildfire risk
- More precisely target PSPS through infrastructure and meteorological advancements
- Further reduce customer impacts through expanded resources and support
- Provide backup power to Community Resource Centers and critical facilities and install temporary generation microgrids to maintain service to our customers

We are building on improvements from previous years and continuing to make our system safer and more resilient.



Year-Over-Year PSPS Comparison

We continue to evolve and improve, keeping our customers safe and reducing the impact of PSPS events.

Event Details	2019	2020	2021	2021 Comparison to 2020
PSPS Events	7	6	5	17% fewer outages
Customers Impacted	2,014,000	653,000	80,400	88% fewer customers impacted
Average Number of Counties Impacted	17	17	10	41% fewer counties impacted
Average Outage Duration (hours)	43	35	31	11% less time without power
Average Outage Restoration Time (hours)	17	10	12	20% increase in restoration time
Damage/Hazards	722	257	442	(13% decrease in restoration time when excluding January PSPS event)
Peak Wind Gusts	102 MPH	89 MPH	102 MPH	
Potential Impacted Acreage Prevented	3.5M	912K	691K	
Potential Damaged Structures Prevented	280K	196K	86K	

97% notification accuracy

98% Medical Baseline notification accuracy

Address Alerts launched SMS text in 16 languages for customers and non-customers

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



Incorporating Lessons Learned

In 2021, we surveyed customers about their PSPS experience. This information was used to guide improvements in 2022.

Actions to Address Feedback

- **Improved awareness** of Community Based Organizations, food resource partnerships, outreach and education
- **Updated notifications** to be clear, concise and accurate
- **Expanded access** to portable batteries and generator rebates
- **Increased availability** of food banks, Meals on Wheels and grocery delivery
- **Working to reduce potential impacts** by installing sectionalizing devices and distribution microgrids

Survey Overview

✓ **~35K** De-energized customers received a survey (August – October 2021)

✓ **~9%** Total response rate

Top Themes

- **October showed significant improvement** from August and September
- **Top issues** identified were accurate restoration time estimates and resources for those with disabilities, medical or critical needs
- **Limited awareness** and usage of resources, comments about lost food and costs (e.g. fuel for generators)



Continuing to Expand Short- and Long-term Mitigation Efforts

PROGRAM	COMPLETED THROUGH 2021	PLANNED IN 2022	COMPLETED IN 2022
> Undergrounding Our Lines Undergrounding powerlines to reduce wildfires caused by equipment	122 Miles	175 Miles	72 Miles
> Overhead System Hardening Installing stronger poles and covered powerlines and conducting line removals	740 Miles	470 Miles	250 Miles
> Enhanced Powerline Safety Settings Enhanced safety settings detect powerline faults and help prevent wildfires	~11,500 Miles*	~44,300 Miles*	~41,500 Miles*
> Weather Stations Better predicting and responding to severe weather threats	1,313 Stations	100 Stations	34 Stations
> High-Definition Cameras Monitoring and responding to wildfires through increased visibility	502 Cameras	98 Cameras	47 Cameras
> Enhanced Vegetation Management Addressing vegetation that poses a higher potential for wildfire risk	6,359 Miles	1,800 Miles	933 Miles
> Sectionalizing Devices and Transmission Switches Separating the grid into smaller sections and narrowing the scope of PSPS	1,209 Devices/Switches	115 Devices/Switches	29 Devices/Switches
> Temporary Distribution Microgrids Keeping customers energized during a Public Safety Power Shutoff	8 Sites	4 Sites	0 Sites

*Circuit-capable miles

Data as of 06/30/2022

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



Enhancing the Resiliency of the Electric Grid

To help prevent wildfires and reduce the number of customers affected by PSPS, we are deploying new technology and investing in a stronger, more flexible grid.

PROGRAMS

2022 PROGRESS

Distribution Microgrids

Energizing “main street” corridors, central community resources and critical facilities

5 planned in 2022	8 total ready to operate
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Islanding Locations

Reconfiguring the electric system to allow certain areas to remain energized during PSPS events

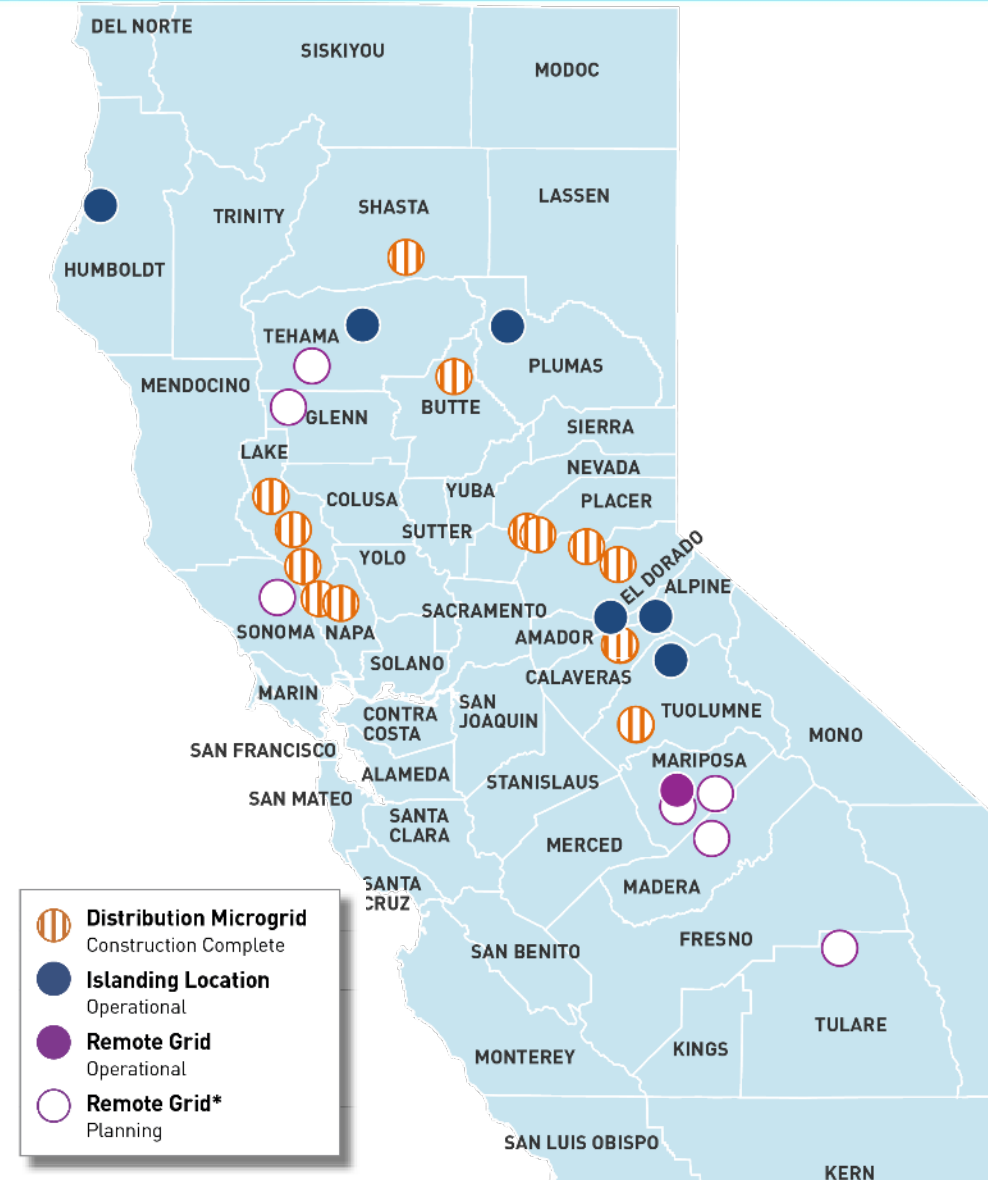
6 locations ready to operate
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Remote Grids

Remote Grids use a combination of solar power, battery storage and propane generation to provide energy to customers independent from the larger electric grid

1 completed

*Additional remote grids under consideration and in planning stages
Data as of 5/4/2022; Local work plans are subject to change and data is based on the best available information at this time.



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Public Safety Partner Information-Sharing

We share notifications with public safety partners* **before, during and after** a PSPS.

In-Event Communications

- **Texts, emails and phone calls** throughout the event
- **Situation reports, outage maps, customer lists** via the Portal
- **State Executive Briefing** with state agencies
- **Systemwide Cooperators Calls**
- **Cooperators Communications** with counties and tribes
- **Agency Representative** assigned to each county/tribe in scope; embedded support is also offered
- **Third-party representative** may request to observe PG&E's virtual EOC
- **Notifying Public Safety Answering Points (PSAP)**
- **Critical Infrastructure Lead** single point of contact in the EOC

*First/emergency responders at the local, state, tribal and federal level, water, wastewater and communication service providers, affected community choice aggregators, publicly-owned utilities/electrical cooperatives, the CPUC and the Cal OES and CALFIRE



Enhancing Our PSPS Agency Portal

2022 Refinements and Updates

- Automating data uploads
- Reducing data refresh times
- Improving performance for routine maintenance activities
- Increasing stability and computing speeds through use of cloud-based environment
- Reducing time to notify users that new geospatial information is available
- Increasing our ability to update outage maps with changes to event scope or customer impacts

 **2,150+** Total Users Have Access

 **950+** INCLUDES: Public Safety Partners
(cities, counties, tribes, telecommunications providers, Community Based Organization partners etc.)

Education and Preparedness

Training sessions planned
for August through October

The portal was utilized during the PSPS full-scale exercise to test new developments and end-to-end processes



Public Safety Partner Outreach and Engagement

2022 TARGETED ENGAGEMENTS	COMPLETED
> CWSP Advisory Committee Expanded to focus on all CWSP initiatives	2
> Regional Working Groups Continuing to provide a forum for regional and tribal stakeholders to discuss PSPS and wildfire safety work	10 of 20
> Local Government Forums Individualized meetings with cities and counties to discuss PSPS and local issues of importance	105
> PSPS Exercises and Seminar Conducting a PSPS-focused seminar and continuing exercises to simulate a PSPS with external partners	5
> Tribal CWSP Webinar Hosted with all tribes in our service area to gather feedback and discuss PSPS and wildfire safety	1
> Public Safety Partner Webinars Hosting segment-specific meetings to gather feedback and discuss PSPS and wildfire safety	3 of 5
> Additional PSPS Briefings & Workshops Continuing to host ad hoc meetings and workshops to improve our PSPS Program	121

Data as of 07/07/2022

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Lessons Learned from the first full-scale exercise on 6/13 – 6/17









What Worked Well

- **System-Wide Event**
 - 40 counties
 - 18 PG&E Divisions
 - 400K+ customers
- **Partnership:** External partner engagement including 48 external contributors from 14 partner agencies. Partners included
 - Cal OES
 - California Department of Water Resources
 - SCE
 - 194 external observers
- **Complexity:** Addition of a wildfire incident overlying the PSPS to add realistic stress and challenge to the response

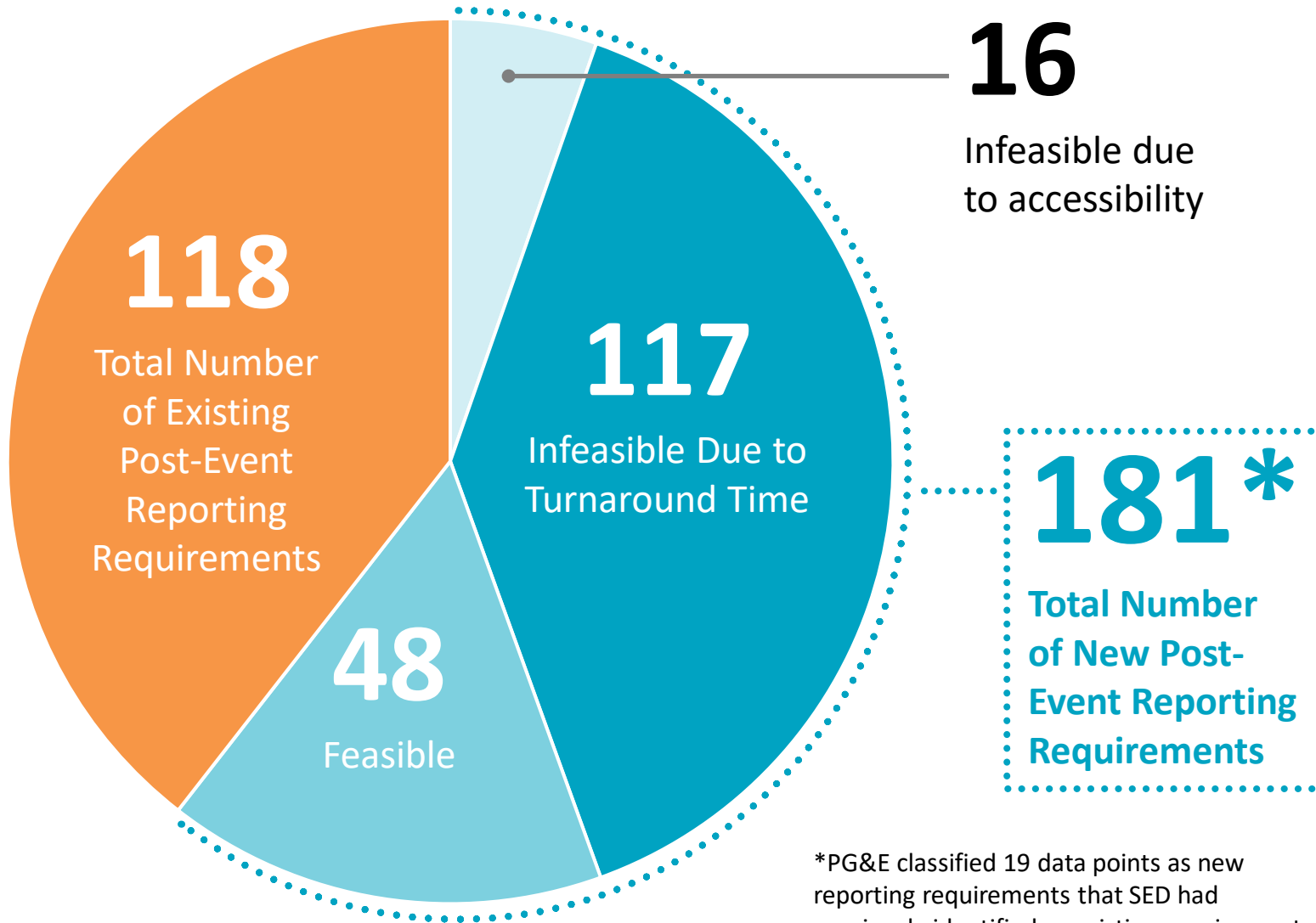
Areas For Improvement

- **System Issue:** Automation of PSPS viewer importing scope from MET DB experienced bug and manual workaround was required
- **Restoration playbook:** Transmission all clear automation process was unavailable and had to be completed manually delaying playbook delivery.
- **Coordination:** Improved pre- and in-exercise communications to mitigate potential confusion regarding the context of the full-scale exercise vs. and actual event

Coordinating with Critical Customers and Facilities

- 
Engaged with ~2,600 critical customers, counties and tribes; reviewed facilities' lists, ensure points of contact are current and share preparedness information
- 
Conducted resiliency collaborative meetings with telecommunications providers
- 
Dedicated PG&E contact for telecommunications providers to address real-time issues
- 
Hosting segment-specific preparedness webinars
 - Community-choice aggregators
 - Telecommunications providers
 - Water agencies
 - Transmission customers
 - Hospital and healthcare providers
- 
Targeted outreach to small water agencies
- 
Ongoing coordination with the Association of California Water Agencies, Hospital Council of Northern and Central California, and the California Hospital Association
- 
Weekly collaboration with the California Hospital Association and Hospital Council
- 
Meetings with 12 hospitals at higher risk of PSPS to discuss permanent resiliency solutions

Proposed SED Updates to Post-PSPS Event Reporting



*PG&E classified 19 data points as new reporting requirements that SED had previously identified as existing requirements

Feedback

Feasibility of Obtaining Additional Data This Season

- Potential time constraints to validate the accuracy of data, creates opportunities for errors
- Time and resources needed to re-work existing systems to automate data
- Confirmation of data may not be available for days or weeks after an event

Shifting Critical Resources and Priorities from Emergency Response

- Concerns with template changes occurring during wildfire season
- Diversion of critical resources could compromise our ability to safely execute a PSPS event and the management of other concurrent emergencies such as a wildfire



Enhancing Our PSPS Emergency Website

What's New in 2022

- **Pop-up notice** directing customers with a slower internet connection to our low-bandwidth tools
- **Power restored message** shown by address up to 48 hours after power is restored
- **Increased ability to zoom** in and out on our outage map

What's Upcoming in 2022

- **New PSPS landing page** with a focus on Access and Functional Needs (AFN) resources, including 2-1-1
- **New Community Resource Center (CRC) page**
- **Phase tracker** by address to let customers know where they are in the restoration process
- **Streamlined navigation** to get customers to PSPS resources more quickly
- **Aligned content** with customer vs. partner needs

Current Outage Status:
Power is off !
Current As Of: 05/19/2022, 5:05pm PST
[Get Notifications](#)
[Stay Safe During Outages](#)
[Find Charging, Wifi, & Ice](#)

! **Inspections are underway to ensure it is safe to restore power.** [Close](#)

Start time	May 19 9:00 AM - 11:00 AM
Estimated Restoration	May 20 11:00 PM

Customers Affected 16

Due to high winds and dry conditions, power in your area has been turned off to help prevent a wildfire. Once weather has improved, we will begin inspecting power lines and equipment for possible damage. Power will be restored as soon as it is safe to do so.

- Power Shutoff
Your power is shut off for wildfire safety.
- Inspections and Repairs**
Inspections and repairs are currently being done to ensure safety.
- Power Restored
Your power is now restored.



Updates To Our PSPS Notifications Based on 2021 Feedback

Incorporating Feedback From External Partners

Feedback/Issue  2022 Improvement

~**24,800 customers** received a Warning Notification with the incorrect script

Enhancing notification tools to mitigate such issues from occurring in the future

~**750 customers** were de-energized and not notified prior to the brief outage

Improving our processes to confirm resources are in place two hours ahead of the planned de-energization time

Establishing contingency staffing for increased scope/same day exceptions

“**Courtesy policy**” limits PSPS notifications between 9 p.m. and 8 a.m., as requested by AFN stakeholders

Evaluating our notification approach in response to the CPUC’s Administrative Enforcement Order and associated fine

Additional Notification Updates

Updated Notification Language:

- De-energization initiated
- Transmission
- Pending delay (NEW)
- Direct Mention of 2-1-1 (NEW)

Updated Notification Tool:

- Non-PSPS outage notification suppression
- Outage alert suppression will now be maintained at the address level instead of by ZIP code allowing for significantly more refinement.



PSPS Notification “Courtesy Hours”

Current Policy

- Under our “courtesy hours” policy, we do not send notifications between 9 p.m. and 8 a.m.
- This can impact “Warning” (Imminent), “Power Off” (De-energization Initiated), All Clear, and/or Re-energization complete notifications

TCPA Background

- The Telephone Consumer Protection Act (TCPA) regulates auto-dialed calls, prerecorded calls, and text messages
- TCPA generally prohibits telephone solicitation calls (marketing and advertising messages) between 9 p.m. and 8 a.m.

Stakeholder Feedback

- *PG&E should send notifications prior to 9 p.m. whenever possible as medical and independent living needs customers typically go to bed close to 9:00 PM.*
 - **Foundation of Resources for Equality and Employment for the Disabled**
- *People with disabilities have important routines that may include getting plenty of rest and sleep. PSPS notifications should be sent during the day and early evening hours to prevent unnecessary confusion or disruption.*
 - **California Foundation for Independent Living Centers**

Next Steps

Clarify CPUC stance regarding courtesy hours policy and associated compliance with D.19-05-042 requirements



Additional Notification Updates

NOTIFICATION	DESCIRPTION	RELEASE DATE
Transmissions	Created three new templates to notify customers of Warning, All-Clear, and Restore	6/24/2022
AI Chatbot	Added a link within the All-Clear template for customer-owned line customers to engage our new chatbot for real time updates	6/24/2022
Outage Notification Suppression Phase I	Phase I allows more granularity than existing ZIP code suppression by providing outage notifications by ZIP code, SPID, outage number, and message template.	6/24/2022
New De-energization Message	A message template to notify customers when power has been shut off	Q3 2022
Pending/Delay Messaging	A message template to notify customers when a PSPS outage has been delayed and no additional cancelation or update is available to customers	Q3 2022



Community Resource Center (CRC) Planning

In collaboration with counties and tribes, we have continued to build out and refine our CRC portfolio and offerings.

2022 Improvements

- **Partnering with accessible transportation agencies** on expanding transportation options to and from CRCs
- **Piloting process for customers to leave devices at CRCs** for charging during operating hours
- **Driving increased awareness of CRCs** through pre-season marketing, social media and local radio ads
- **Providing printed materials in large print**
- **Increasing customer service staff training** to serve visitors with access and functional needs

- ✓ **113** Indoor Sites
- ✓ **281** Outdoor Sites (micro, mobile or tented)

How We Gather Feedback

Solicited feedback on CRC sites from tribes and counties in our service territory

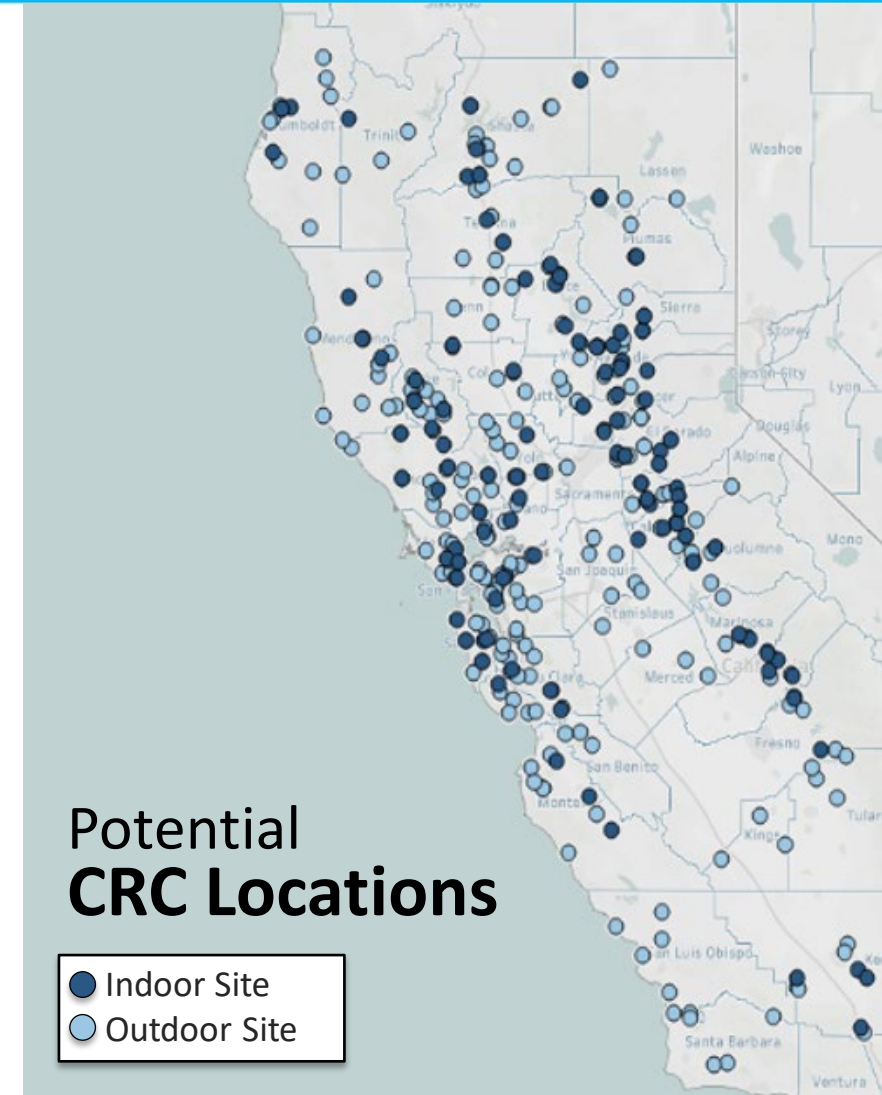
Reviewed portfolio of sites for gaps and opportunities for improvement

CRC Locations and Resources

Details/Resources	Indoor Indoor site (i.e. library, school)	Outdoor Open air tents at outdoor site
COVID-19 Health and Safety Measures	×	×
ADA-Accessible Restroom	×	×
Heating and Cooling	×	
Device Charging*	×	×
Wi-Fi Service	×	×
Bottled Water	×	×
Non-Perishable Snacks	×	×
“Grab-and-go” resource offerings**	×	×
Tables and Chairs	×	×
Bagged Ice	×	
Blankets	×	×
Security Personnel	×	×
Cellular Coverage	×	×
Customer Service Staff	×	×
Wind/Weather-Resistant	×	
Privacy Screens	×	

* Medical device charging will be prioritized in times of high demand

** Grab-and-go bag contains device charger, water, snacks and info card



Standard operating hours at all CRCs: **8 AM - 10 PM**



Expanding Access and Enhancing Customer Support

PROGRAM	2022 IMPROVEMENTS
> Community-Based Organization Partnerships	Support and resources for all interested vulnerable customers <ul style="list-style-type: none">Expanded network of 78 community-based organization partnerships in all countiesPartnering with accessible transportation agencies on transportation optionsAdditional resources identified by AFN Collaborative Planning team (CRC improvements, additional CBO training, battery solutions for medications)
> Food Resource Partnerships	Resources to replace food lost during PSPS <ul style="list-style-type: none">Partnering with ~50 organizations serving all counties potentially impacted by PSPS (26 Meals on Wheels partnerships in 22 counties, 22 food bank partnerships in 37 counties)
> Portable Batteries	Batteries available to all interested/qualified Medical Baseline and electricity-dependent AFN HFTD customers <ul style="list-style-type: none">Distributing ~6,000 batteries to Medical Baseline and electricity dependent AFN customers (~14,300 total distributed to date; goal of ~19,000 by 2022 year-end)Expanded eligibility to non-income qualified Medical Baseline customers in HFTDs (total scope of ~29,000 customers)
> Generator and Battery Rebate Program	Rebates available for all PSPS/EPSS impacted customers in HFTDs <ul style="list-style-type: none">Adjusted tiered rebate amounts to support ~1,300 customers with rebates (799 provided to date in 2022, 2,022 since program inception)Expanded eligibility to all customers in HFTDs or served by an EPSS circuit AND have experienced 2 or more PSPS events.Backup Power Transfer Meter pilot to cover costs for ~1,500 customers (64 to date in 2022)
> Multi-Solution Partnerships	Service-area wide, full-service solutions for individuals with Access and Functional Needs <ul style="list-style-type: none">Building awareness through radio and direct to customer outreach and launching 2-1-1's proactive care coordinator program



Engaging Customers with Access and Functional Needs

What we're doing in 2022

- **Providing specialized materials, mailers and phone calls** to customers eligible for our Medical Baseline program
- **Updating contact information for Medical Baseline Customers**
- **Conducting ADA accessible webinars** (with closed captioning available in Spanish, Chinese and English)
- **Hosting webinars for organizations** that serve persons with disabilities and/or access and functional needs
- **Partnering with over 200 CBO Informational Partners** to amplify preparedness messaging and awareness of resiliency resources
- **Providing program material** in sixteen languages and Braille and developing videos in American Sign Language
- **Encouraging customers to self-identify as AFN**
- **Developing targeted radio and social media** to highlight applicable programs/resources
- **Issuing AFN specific PSAs** before and during PSPS

AFN Self-Identification Pilot

What: Multi-channel pilot campaign to customers that includes direct mail, email and proactive call-outs requesting customers self-identify anyone in their household.

Who: Customers with a propensity to identify with one or more AFN characteristics and more likely to be impacted by PSPS.

Results:

Overall Response Rate: 27%

- **Direct Mail:** 35% response rate
- **Email:** 19% response rate
- **Proactive Call-outs:** 17% response rate

~10,460 additional customers identified as reliant on electricity to maintain necessary life functions that are not MBL



Medical Baseline Marketing and Outreach Activities

PG&E is encouraging customers to participate and enroll in the Medical Baseline Program using targeted outreach.

Activities	Channel(s)	Target Audience	Timing
MBL Digital Media Ads	Google, Facebook, Nextdoor	Adults age 45+	Jan-Dec
MBL Acquisition Campaign	Email & direct mail	Customers most likely eligible for MBL based on PG&E's proprietary MBL propensity model	Apr - Jul
MBL Residential Bill Inserts	Bill inserts	All residential customers	May
MBL Radio Ads	Radio	Adults age 45+	May-Oct
MBL TV Ads	Pilot campaign in Spanish with Univision	Pilot campaign in Spanish with Univision targeting Sacramento, Stockton, Modesto, Chico, and Redding	May-Oct
MBL TV Ads	Pilot campaign in Spanish with Univision	Pilot campaign in Spanish with Univision targeting Sacramento, Stockton, Modesto, Chico, and Redding	May-Oct

Medical Baseline Campaign Statistics

	2021 COMPLETE	2022 PROGRESS
Total Channel Count	23	27
Direct Mail Customers Reached	2,463,629	1,000,000+
Email Customers Reached	2,317,955	600,000
Bill Insert Customers Reached	11,016,000	11,016,000
Digital Media Total Impressions	128,745,568	15,449,348
Digital Media Total Conversions (Clicks)	317,645	40,686

Data as of June 30, 2022

Appendix

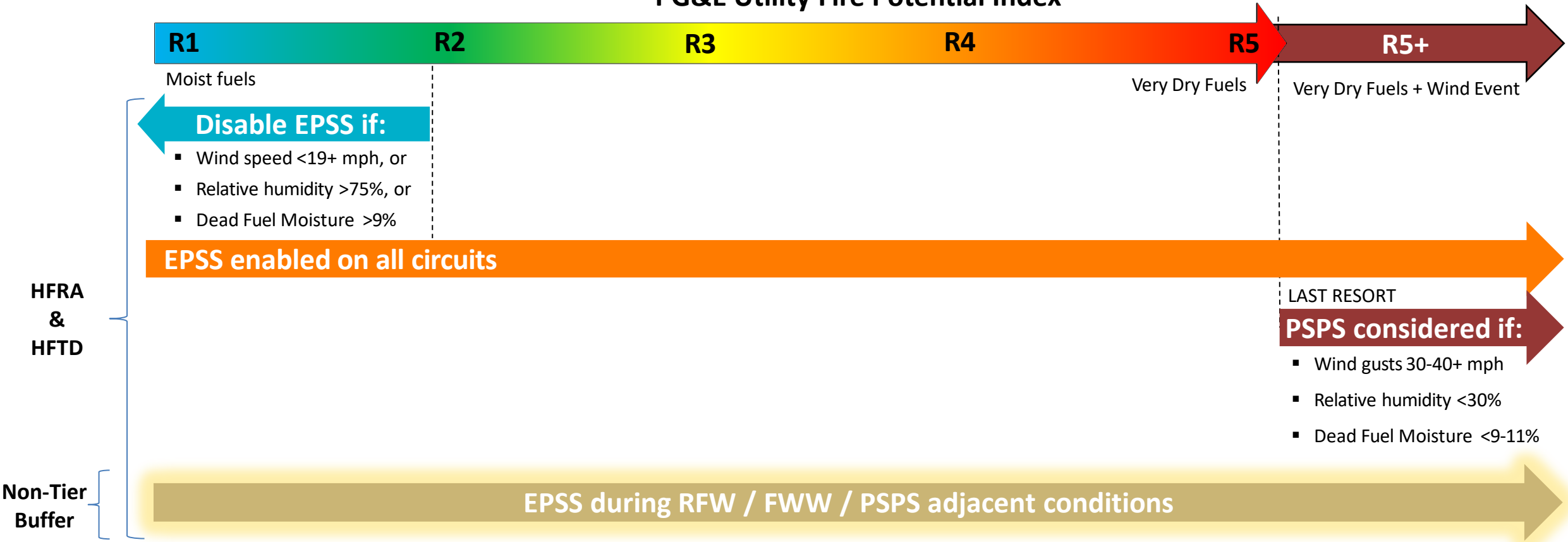




Enhanced Powerline Safety Settings (EPSS) Enablement Criteria

EPSS Enablement Criteria has been extended to protect All HFRA/HFTD Circuits unless Disable Criteria met of R1 and Damp or Calm.

PG&E Utility Fire Potential Index



NOTE: RFW = Red Flag Warning; FWW = Fire Weather Watch; PSPS = Public Safety Power Shutoff



EPSS Year-To-Date Progress

CUSTOMERS PROTECTED	MILES PROTECTED	CIRCUITS PROTECTED	DAYS OF PROTECTION	OUTAGES RESTORED	AVG. OUTAGE LENGTH	CUSTOMERS ON AVG. IMPACTED PER OUTAGE	UNIQUE CUSTOMERS IMPACTED
1.8M Customers	~44K Miles	1,018 Circuits	121 Days (out of 176 YTD)	517 Outages	~3 HRS Average (53% better than 2021)	~850 Customers	~320K Customers

Data as of June 25, 2022

~78% reduction in CPUC-Reportable Ignitions
in HFTDs on powerlines with these safety settings enabled.

CIRCUITS EXPERIENCING:

- > 0 outages: **533**
- > 1 outage: **174**
- > 2 outages: **62**
- > 3 or more outages: **55**

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



Incorporating Lessons Learned

2021 Stakeholder Engagement

400+ Stakeholder Meetings

26 Wildfire Safety Working Sessions

20 Regional Working Groups

10 Post-Season Listening Sessions

4 PSPS Advisory Committee

4 Post-Event Agency Surveys

4 Tabletop and Full-Scale Exercises

Engagement with critical facility stakeholders

What We Heard

- 95% of post-event survey respondents' PSPS **experience improved in 2021**
- **Notable process improvements** for critical customers
- **Data and information sharing improved** but requires further refinement
- Portal sometimes contained **inaccurate maps or outdated information**
- Event scope/criteria **changes needed more quickly** and through established channels
- **Proactively share information** about Enhanced Powerline Safety Settings (EPSS)



Medical Baseline Healthcare Outreach

PG&E recognizes that ongoing engagement with healthcare practitioners, medical associations, and medical device suppliers is a key opportunity to increase enrollment in the Medical Baseline Program.

- PG&E, SCE, SDG&E and SoCalGas provided an **Annual MBL Training to In Home Support Services Providers (IHSS)** and provided online MBL resources
- PG&E, SCE, and SDG&E presented a **webinar to the Hospital Association** which included information on PSPS, MBL and other resources
- PG&E also engaged with the following **healthcare industry and durable medical equipment partners:**
 - Plumas District Hospital
 - California Association of Health Facilities (CAHF)
 - Marysville Medical Clinic
 - CA Physicians' Assistant Board
 - Owens HealthCare and Durable Medical Equipment Company
 - We Care Home Assistants LLC





Expanding Resource Partnerships for Vulnerable Customers

We have expanded our support for customers with Access and Functional Needs, with more partnerships and resources.

➤ California Foundation for Independent Living Centers (CFILC)

16
centers

48
counties served

➤ Meals on Wheels

26
organizations

22
counties served

➤ Food Banks

22
organizations

37
counties served

➤ Portable Battery Program Providers

6
providers

42
counties served

➤ In-Language and Additional Partnerships

12
services

21
counties served



Providing More Support For Vulnerable Customers During a PSPS

Medical Baseline Program (MBL)

Assists residential customers who rely on power for certain medical needs.

If customers don't qualify for MBL

Vulnerable Customer Status (VCS)

Customers that have an individual in the household with a serious illness or condition that could become life threatening if service is disconnected can self-certify.

If customers don't qualify for VCS

Electricity Dependent

Customers who are at an increased risk of harm to their health, safety and independence during a PSPS, can self-identify.

Additional PSPS notifications and doorbell rings

Resources for Customers with Access and Functional Needs

Outreach and resources for customers who could be more acutely impacted by PSPS continues to be a primary focus for preparedness and in-event support.

Offseason Preparedness

- Contact Information Acquisition
- Understanding Support Options
- Pre-PSPS Event Support



In-Event Notifications

- Watch and Warning Notifications
- Acknowledgement Required
- Hourly Retries
- Doorbell Rings



In-Event Support

- CBO Partnerships
 - CFILC DDAR support
 - 211
 - Meals on Wheels in-event food delivery and food bank post-event food replacement
- Community Resource Centers



Resource Referral Process

- MBL Escalation Process
- 2021 Event Examples
 - Hotel accommodations and food stipend
 - In-event portable backup battery delivery
 - Delivery of fuel gift card

