2021 Pacific Gas and Electric Company Public Safety Power Shutoffs (PSPS) Preparedness Staff Briefing #1

June 9, 2021



California Public Utilities Commission

Agenda

1:00 – 1:10 p.m. Introduction

Shelby Chase, California Public Utilities Commission

1:10 – 2:50 p.m. Pacific Gas and Electric Company (PG&E) Presentation

Aaron Johnson, Vice President, Bay Area Region

Scott Strenfel, Director, Meteorology and Fire Science

Elise Hunter, Director, Agency Outreach

Dave Canny, Director, Business Energy Solutions

Vanessa Bryan, Senior Manager, LCE Planning and Operations

2:50 – 3:00 p.m. Closing Remarks

Housekeeping

- Attendees are muted.
- Briefing is being recorded.
- 1st briefing presentations only.
- 2nd briefing follow up questions and topics.
- Survey form please return after briefing.

Objectives

Actions to prepare for the 2021 fire/PSPS season

Lessons learned from 2020



Community Wildfire Safety Program CALIFORNIA PUBLIC UTILITIES COMMISSION PSPS PREPARDNESS BRIEFING

June 9, 2021



The purpose of this meeting is to discuss our Public Safety Power Shutoff (PSPS) preparedness efforts including, PSPS mitigation efforts, customer support and resources and information sharing and engagement.

Discussion Topics:

- **1** Overall Preparedness
- **2** Decision-Making Criteria and Modeling
- **3** Coordination with Agencies, Tribes and Critical Facilities
- **4** Customer Support and Resources

Overall Preparedness



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	2019	2020	2021
Launch Wildfire Safe and PSPS Programs	ty Expand PSPS Program Scope	Target PSPS Events to Highest Risk Areas	Continuous Improvement & Further Risk Reduction
 PSPS scope included Tier 3 distribution lines and low-voltage transmission lines (potential to impact ~500K total customers) Key Learning: program scope too limited 	 Expanded PSPS scope t all distribution and transmission lines in Ti 2/Tier 3 areas Public awareness campaign rolled out for more than 5M custome Key Learning: custom support and event execution must improve 	entire PSPS operation Developed more granular meteorological scoping capabilities Developed a structure-by-structure analysis of the transmission system to allow more targeted scoping	e support customers repeatedly
1 Event 60K Customers	9 Events 2M Customers	6 Events 653K Customers	1 Event 5K Customers
All numbers are approximat	e		

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

2021 Efforts to Reduce PSPS Impacts and Support Customers

We are working nonstop to lessen the impact of Public Safety Power Shutoffs (PSPS) and providing more resources to customers and communities before, during and after PSPS events.

Reducing PSPS Impacts



Limiting the number of customers impacted by installing 275+ additional distribution sectionalizing devices and transmission switches



Weather modeling improvements and **5 days** of forecast data

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Helping to keep the power on with **10 substations** prepared for temporary generation and **5 additional microgrids** constructed to power key community resources



Customizing restoration plans for remote, frequently impacted circuits



Continuing to refine and improve decisionmaking, scoping process and tools

Supporting Customers and Communities



Customer notifications in **16 languages** and new Address Alerts to provide information about any address



~5,000 batteries available, covering all interested low-income Medical Baseline customers in high fire-threat areas



Targeting additional ADA-accessible **Community Resource Center** sites



Meal replacement options for customers in 46 counties



Targeting additional partnerships with community-based organizations to support customers with access and functional needs

PSPS Decision-Making Criteria



We carefully review a combination of factors when deciding if power must be turned off for safety. These factors include:





This year, our decision-making process is evolving to also account for the presence of trees tall enough to strike power lines when determining if a PSPS event is necessary.

Tree Overstrike Exposure and PSPS Decision-Making

The safety of our customers and communities is our most important responsibility. Consistent with the recent recommendation of the federal court, we have developed additional criteria for our PSPS Program.

To reduce the risk of major wildfires, PG&E may turn off power on distribution lines* where there are large amounts of trees tall enough to fall into electric lines during severe weather.

- Customers who live in areas of the highest wildfire risk may experience more frequent PSPS events compared to last year's weather conditions.
- We are sharing community-specific information regarding these potential impacts with customers, cities, counties and tribes.

*Does not include transmission lines (which are considered to be \geq 60 kV)



Distribution-Level PSPS Decision-Making Process

If <u>ALL</u> the minimum fire conditions are met...

- ✓ High wind speeds
- Low relative humidity
- Low fuel moisture
- High fire potential

...we conduct an in-depth review of fire risk using three separate measures:

Large Fire Probability

Assesses the likelihood of a catastrophic wildfire by using a combination of the Outage Producing Winds (OPW) model and the Fire Potential Index (FPI). This is an assessment of the probability that equipment will fail during the weather event, based on outage history.

Black Swan Conditions

When conditions are especially windy and dry, leading to extreme <u>consequence</u> if a wildfire started, we may need to turn off power, even if the Large Fire Probability assessment does not show a likelihood for the equipment to fail.

Vegetation Considerations



Power lines in areas with tall trees that could strike power lines (also known as overstrike trees) or lines near trees identified as a safety risk, may be shut off for safety. If <u>ANY</u> of these three measures are met, we turn off power for safety

3

Determining the Outage Area

Each of the three measures is evaluated within a small geographic area (4 square kilometers). If any of the measures are met, circuits within that area are deenergized. Because power lines travel across long distances, customers outside the affected area may also be impacted. We also review the transmission lines that traverse those areas where meteorology has identified severe weather conditions. There is no single factor or threshold that will necessitate shutting off power to a transmission circuit.



in high fire-threat areas

PG<mark>s</mark>E

While the 2020 PSPS Protocols Plus Overstrike Tree Potential and Priority Tags are currently being used to determine when to initiate a PSPS event, it is likely that this approach will change in August 2021. This may substantially modify the current 2020 PSPS Protocols Plus Tree Overstrike Potential and Priority Tags.



PSPS mitigations planned for this year will help to offset potential increases to event frequency due to the incorporation of overstrike criteria. The following table shows the impact of these mitigations in comparison to our 2020 PSPS protocols.

	Scenario 1: 2020 PSPS Protocols + 2021 Planned WMP Mitigations	Scenario 2: 2020 PSPS Protocols + Overstrike Potential and Priority Tags	Scenario 3: 2020 PSPS Protocols + Overstrike Potential and Priority Tags + 2021 Planned WMP Mitigations
Average PSPS	8%	7%	14%
Scope Per Event	Reduction	Reduction	Reduction
Per-Customer	2%	2%	4%
Duration Per Event	Reduction	Reduction	Reduction
Event Frequency	No impact relative to 2019 and 2020	74% Increase	74% Increase

Data is for planning purposes only. Actual PSPS events will be dependent on weather and local conditions.

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We have analyzed our portfolio of planned mitigation work for 2021 to quantify the potential benefits for customers, as compared to 2020 PSPS events and a lookback at 2019 weather events.

Mitigations	Customers Mitigated Per Event	Customer Hours Per Event
Transmission Lines – Vegetation	8,789	204,801
Distribution Sectionalizing	1,961	57,206
Hardening: Underground Projects	1,297	42,582
Temporary Distribution Microgrids	726	17,928
Transmission Lines – Switching	580	20,973
Other Hardening Work	413	8,982
Temporary Substation Microgrids	325	7,688

The benefit of these activities is expected to accrue over time, such that their scale and magnitude should match that of weather events themselves.

Data is for planning purposes only. Actual PSPS events will be dependent on weather and local conditions.

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. The following are some of the programs that will help keep the lights on for customers and key community resources during a PSPS event.

PROGRAM DESCRIPTION	2021 PLAN	DEL NORTE SISKIYOU MODOC	Substation Microgrid Ready to Operate
Substation Microgrids Temporary generation at substations to support customers impacted by transmission-level PSPS events*	Pre-connecting generation at 10 substations; Developing plans for 3 additional locations	HUMBOLDT TRINITY SHASTA LASSEN	 Substation Microgrid Planning Distribution Microgrid Near Complete Distribution Microgrid Planning
Distribution Microgrids Energizing "main street" corridors, central community resources and critical facilities	 3 near complete from 2019- 2020 sites; Targeting at least 5** additional in 2021 	MENDOCINO GLENN LAKE COLUSA SUTTE SUTTE SUTTE COLUSA SUTTE	 Islanding Location Ready to Operate Remote Grid* Operational
Islanding Locations Reconfiguring the electric system to allow certain areas to remain energized during PSPS events	6 locations ready to operate	SONOMA VOLO SONOMA NAPA SOLANO MARIN CONTRA SAN EPANCISCO SAN EPANCISCO	Remote Grid* Planning *Additional remote grids also under consideration.
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 complete; Additional locations under consideration and in planning phases	SANTA CRUZ SANTA SANTA CRUZ FRESNO SAN BENITO	ΙΝΥΟ
*When safe to energize **Additional sites are also in development		MONTEREY KINGS	ULARE
Local work plans are subject to change and data is based on the be	st available information at this time.	SAN LUIS OBISPO	KERN

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Coordination with Agencies, Tribes and Critical Facilities



Engaging With Cities, Counties and Tribes

We are engaging with cities, counties and tribes through various channels to help gather feedback and strengthen partnerships











We began surveying agency partners following the final two PSPS events of 2020 to gather feedback on how we could improve.



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Coordinating with Critical Customers and Facilities

Working with critical customers, Public Safety Partners and counties and tribes with critical facilities to gather feedback, share lessons learned and coordinate on PSPS preparedness.



Listening To Feedback And Sharing Improvements

With Telecommunications Providers, Hospitals, Municipal Utilities, Transportation Agencies, Water Agencies and Community Choice Aggregators through:

- 6 segment-specific PSPS Listening Sessions following 2020 PSPS events
- 6 segment-specific PSPS Preparedness Webinars (2 of 6 complete)



Critical Facilities Identification Engaging critical customers to review facilities lists

- Identify points of contact
- Ensure contact information is up-to-date
- Share preparedness information
- PG&E validation of critical customer list
- Outreach to counties and tribes to validate data and identify additional facilities



Ongoing Engagement And Coordination

- PG&E and Telecommunications Providers Resiliency Collaborative Meetings
- Targeted outreach to small water agencies that had multiple backup generation requests in-event
- Ongoing coordination with the Association of California Water Agencies
- Weekly collaboration with the California Hospital Association and Hospital Council
- Meetings with 14 hospitals at higher risk of PSPS to discuss permanent resiliency solutions

Planned Notifications Channels

- Direct notifications
- Portal
- Critical Infrastructure Lead
- Account managers

In response to telco feedback,

we more clearly identified the early notification "Advance" notifications and "Warning" notifications and offered a bundling option for restoration notifications.

PSPS Preparation

- Shared site-by-site data for each telco's portfolio for planning purposes. This includes:
 - PSPS likelihood (based on grid configuration, weather modeling and current criteria)
 - $\circ~$ historical data
 - \circ microgrid information
 - o simulated 10-year look back information
- Completed individual direct engagement to ensure site identification and contact information
- Refreshing the data and providing it to customers in Q3

Carrier Readiness

- We have been in regular direct individual and group dialogue to support carrier resiliency plans
- We have invited all carriers to participate in our Full Scale Exercises and Tabletop Exercises.
- CPUC Decisions:
 - Wireless: Decision 20-07-011, dated 7/16/20
 - Requires resiliency plans to be submitted within 6 months
 - Adopt 72-hour back up requirement in Tier 2/3 areas within 12 months
 - Update plans annually
 - Wireline: <u>Decision 21-02-029 2/11/21</u>
 - Requires resiliency plans to be submitted within 6 months
 - Adopt 72-hour back up requirements in Tier 2/3 areas, including network equipment located in communities lacking sufficient wireless service coverage within 8 months
 - Update plans annually

Public Safety Partner Information-Sharing

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

We notify cities, counties, tribes and other partners once our meteorology team begins monitoring a potentially severe weather event and again when we activate our Emergency Operations Center (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

IN-EVENT COMMUNICATIONS

••• Texts, emails and phone calls throughout the event ڻ ال ال Situation reports, outage maps, customer lists via the PSPS Portal <u>å</u> 0 **State Executive Briefing** with state agencies **Systemwide Cooperators Calls Cooperators Communications** with counties and tribes **Agency Representative** assigned to each county/tribe in scope; 22 <u>`</u>ᢓ´ embedded support is also offered ls_ **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

We provide advance notice prior to turning off power and updates until power is restored via automated calls, texts and emails.

Severe weather forecasted			PSPS Event	C	PUC Report	
Torceaster	72 hours ADVANCED	48-24 hours WATCH	12-0 hours WARNING	Weather Passed	Power Restored	Medical Baseline Program
Agency/Critical Customer/CBO Resource Partner Notifications*						and Self-identified Vulnerable Status participants also receive the following:
Customer Notifications Includes Address Alerts		\checkmark	\checkmark		\checkmark	Hourly Texts and Calls until contact is made Doorbell Rings
Media Outreach News releases, public briefings, social media		\checkmark			\checkmark	if no positive contact is made Door Hanger Left if no contact made

* Includes CBO Resource partners

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Based on feedback from agencies and customers, we are making the following updates:



Option of bundling restoration notifications for Public Safety Partners



Accurate notifications consistent across all channels



Refined and concise messaging for Public Safety Partners and customers



Address Alerts in 16 languages for customers and non-customers The PSPS Portal shares planning and event-specific information with public safety partners before, during and after a PSPS event. In 2021, PG&E is working to improve the PSPS Portal by:



Improving data processing capabilities

to provide timelier event updates



Reorganizing the page layout to improve the user experience



Combining various map files so map layers can be opened quickly from a single source.



Refining event reports with intuitive headers and delta reporting to quickly identify changes

PSPS Situation Report – Updates for 2021

Based on feedback from state and local agencies, PG&E is enhancing the Situation Report in 2021 to include:



A new Delta Report to easily track changes from the prior Situation Reports



Community Resource Center statuses, locations, operating hours and other specifics



Mitigation data from resilience efforts (microgrids, substations and backup generation)



Updates on the CBOs supporting affected customers in a particular area

Practicing and Preparing for PSPS Events

PG&E is hosting PSPS tabletops and full-scale exercises to test and evaluate processes and procedures within our emergency operations plan and to gather feedback and continue to align our PSPS planning.

The following are lessons learned from the first full-scale exercise, held May 24 – 28

PLUSES	DELTAS	
 Command and Control Clear and concise command and decision-making meetings Directed action assignment Use of three-way communication 	 PSPS Scoping Playbook Omission of microgrid notification Need to establish clear definitions across playbooks 	
 Agency/Customer Notification Process Efficiently populated the scripts Cross-functional coordination between PIO, Liaison and Customer Introduction of notification process if wildfires occur concurrent with PSPS events 	 Documentation Issues and Delays Late approvals, missing objectives and staffing changes not reflected in Incident Action Plan Delays in providing Situation Report to external stakeholders Inconsistency in naming convention across playbooks 	
 PSPS Portal Improvements Improving data processing capabilities to provide timelier updates Reorganizing the page layout to improve the user experience Combining map files so layers can be opened from a single source Refining reports with intuitive headers and delta reporting to quickly identify changes 	 Opportunities to Improve Process When Time Places are Removed from Scope Coordination with Temporary Generation Team to adjust deployment according to new scope Transmission scope change 	

Customer Support and Resources



Improving Customer Support Before, During and After Events



We are listening to our customers. In response to their feedback, we are improving notifications, providing batteries and generator rebates and enhancing resources for qualifying customers.

PROGRAM	2020 STATUS	2021 PLAN
Customer Notifications	 Notifications with restoration timing ZIP code alerts for non-account holders 13 languages 	 Accurate notifications consistent across all channels Refined and concise messaging Address Alerts for non-account holders 16 languages, set language preference online, via phone
Community-Based Organization Partnerships	 250+ partnerships in place Access and Functional Needs (AFN) support In-language information 	 35+ additional CBOs targeted
Food Resource Partnerships	 Partnerships with: 21 food banks in 36 counties 18 Meals on Wheels in 20 counties 	 Meal replacement options for customers in 46 counties 10 new partnerships
Portable Batteries	 6,550+ batteries distributed 	 ~5,000 additional batteries available Covering all interested low-income Medical Baseline customers in high fire-threat areas
Community Resource Centers	 361 locations prepared in coordination with local government agencies 	 Targeting multiple ADA-accessible sites in all potentially impacted counties Locations in partnership with county and tribal agencies
Well Water Rebates	 Pilot program launched for well water users 	 Continue well water rebate pilot program Expand program promotion

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The pge.com/pspsupdates webpage is the go-to resource for customers and communities during PSPS events and includes the following:

- Real-time PSPS event updates and live interactive outage maps
- Estimated restoration times
- Community Resource Center locations
- Local food banks that can provide meal replacements
- Access to live, localized data collected by PG&E weather stations
- Materials in 16 languages including: English, Spanish, Chinese, Vietnamese, Korean, Tagalog, Russian, Arabic, Farsi, Punjabi, Japanese, Khmer, Hmong, Thai, Hindi and Portuguese

Improved Site Capacity Capabilities



In 2020, PG&E built a cloud-based emergency site

to handle PSPS event communications and also moved pge.com into the cloud.

- The emergency site was tested to handle
 240M hits per hour
 - Peak 2020 PSPS event traffic was 1.97M hits per hour (less than 1% of capacity)
- The main page (pge.com) was tested to handle 400M hits per hour
 - Peak 2020 traffic was 12.35M hits/hour (3% of capacity)

To view our updated website and learn more about PSPS events, visit: pge.com/psps

In collaboration with counties and tribes, we have continued to build out and refine our CRC portfolio and offerings in 2021.



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



Refining and expanding our portfolio

of indoor and outdoor locations using feedback Target maintaining **90%** + of the 2020 event-ready sites **103** INDOOR SITES 265 OUTDOOR SITES (MICRO, MOBILE OR TENTED)



Reviewed portfolio of sites for gaps and opportunities for improvement



Continue COVID-19 mitigation measures and adjust with state and local guidelines

2021 CRC Types and Resources

Based on county and tribal feedback, we plan to continue CRC types and resources provided in 2020 in 2021.

- Continue strategy of supplementing indoor CRCs with outdoor CRCs to provide flexibility and coverage for customers.
- Continue distributing resources via grab-and-go bags at all sites.





CRC

CRC

*On-site charging for medical devices only. **Tables and chairs for customers charging medical devices.

We will continue current COVID-19 safety measures and adjust practices to align with evolving state and local guidelines in 2021.



We are collaborating with the Disability Disaster Access and Resources (DDAR) Program to provide qualifying customers with targeted outreach, personalized emergency planning support, energy needs assessments and in-event Public Safety Power Shutoff support. In-event support can include the following support based on customer needs:



Response to Resource Requests received through PG&E's call center



Hotel Accommodations and Food Stipends



Accessible Transportation

to hotels and Community Resource Centers

Portable Backup Batteries

ADDITIONAL SUPPORT IN 2021

We have also identified areas where we can improve our support and available resources for AFN customers. These include:

- 2-1-1 referral services
- Energy Savings Assistance (ESA) Program
- Our California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance (FERA) Programs
- Food Banks, Meals on Wheels and Grocery Delivery Services

NEW Customers that have an individual in the household with a serious illness or condition that could become life threatening if service is disconnected, but don't qualify for medical baseline can Self-certify for Vulnerable Customer status.



Engaging Mobile Home Parks, Multi-Unit Dwelling Account Owners and Tenants

OWNER RESOURCES AND TENANT EDUCATION

Providing mobile home park (MHP) and multiunit dwelling account owners with resources and information to share with their tenants on how to receive up-to-date PSPS information and helpful resources through:

- Annual Medical Baseline tenant contact info update letter to tenants
- Information kit that includes preparedness resources, online tools and safety tips to share with tenants and residents

NEW PSPS Address Alerts

Customers and non-account holders can be alerted in multiple languages about a potential PSPS event at any address that is important to them. Notifications are by call and text and available in 16 languages.

Outreach to about this new tool includes:

- Automated phone call to individuals previously enrolled in ZIP Code alerts
- Postcards and emails to 3rd-party list of renters who are not account holders
- Flyers shared with MHP and multi-unit dwelling account owners for lobbies and common areas
- Flyers included in tenant education kit
- Social media posts
- Reinforcement during CWSP webinars and Safety Town Halls
 pge.com/addressalerts

Closing Remarks

Survey – Please return to Drucilla.dunton@cpuc.ca.gov

Schedule of Remaining Staff Briefings

- SDG&E Staff Briefing #1 June 11th 12:30 p.m. 2:30 p.m.
- Operation of the second state of the second
- ♦ SMJU Staff Briefing #2 June 30th 2:30 p.m. 4:30 p.m.
- \bigcirc SDG&E Staff Briefing #2 July 1st 1:00 p.m. 3:00 p.m.



California Public Utilities Commission

Questions?

Contact Shelby Chase at Shelby.chase@cpuc.ca.gov and Dru Dunton at Drucilla.dunton@cpuc.ca.gov