

2024 Post-Season/Pre-Season Public Briefings on Utility Public Safety Power Shutoffs (Day 2)

California Public Utilities Commission

August 8, 2024



California Public
Utilities Commission

Day 2 - Agenda

9:00 – 9:15 AM	Opening Remarks
9:15 – 10:30 AM	San Diego Gas & Electric Presentation & Questions from Dias
10:30 – 10:40 AM	Break
10:40 – 11:55 AM	Bear Valley Electric Service Presentation & Questions from Dias
11:55 – 12:25 PM	Morning Public Comments
12:25 – 1:25 PM	Lunch Break
1:25 – 2:55 PM	Pacific Gas & Electric Presentation & Questions from Dias
2:55 – 3:10 PM	Break
3:10 – 3:40 PM	Afternoon Public Comments
3:40 – 4:00 PM	Closing Remarks

Opening Remarks

President Reynolds and CPUC Commissioners

Shaun Fairbanks, Deputy Chief, CAL FIRE

Patrick Doherty, Program Manager, Office of Energy Infrastructure Safety



California Public
Utilities Commission

San Diego Gas & Electric



2024 PUBLIC SAFETY POWER SHUTOFF (PSPS) PREPAREDNESS

August 8, 2024

INTRODUCTION

Brian D'Agostino,

Meteorologist, V.P. of Wildfire & Climate Science

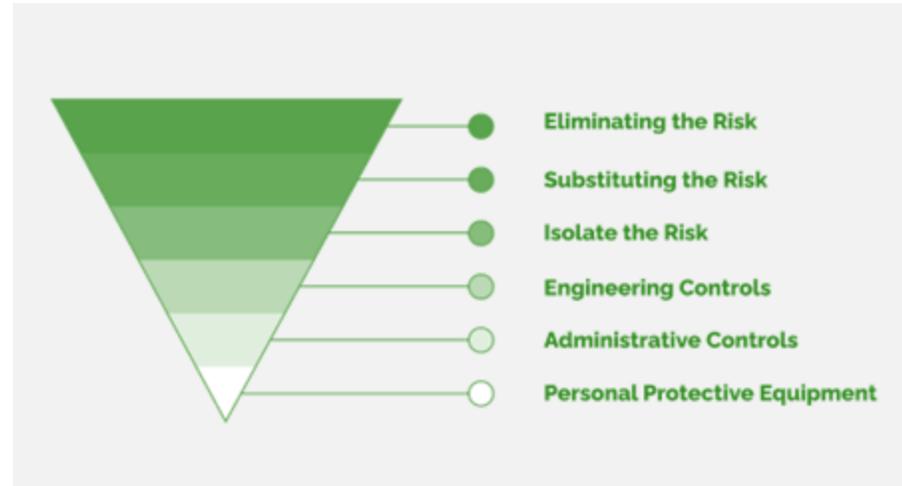


WILDFIRE MITIGATION STRATEGY



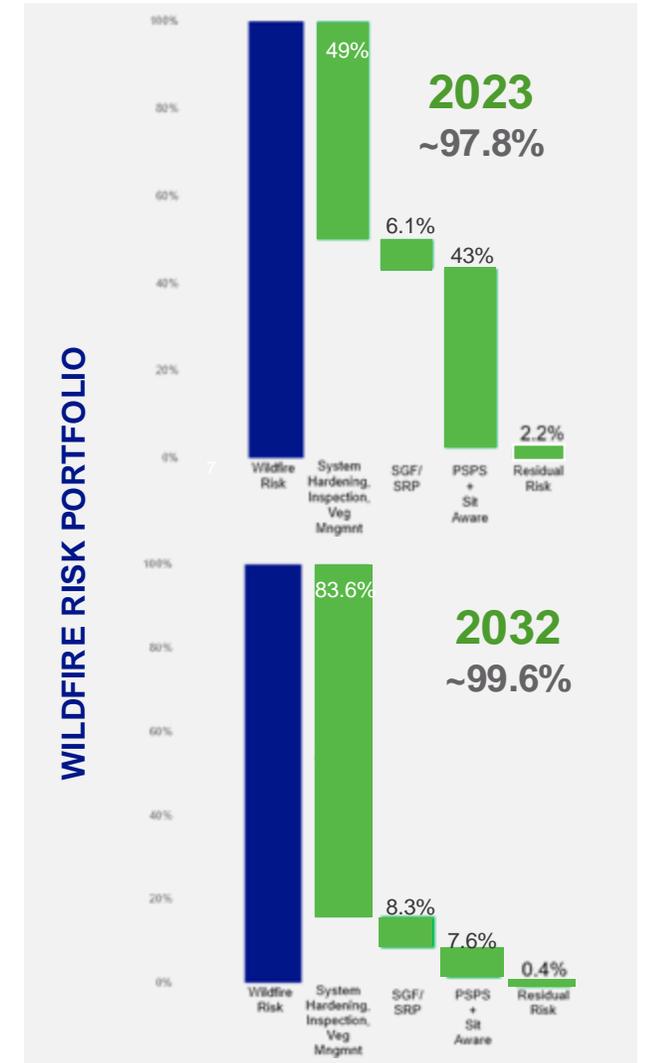
OPERATIONAL APPROACH

- Heavily reliant on **PSPS and situational awareness mitigations** such as setting sensitive relay profiles (SRP) or sensitive ground faults (SGF)
- Some of which require **human intervention** which potentially can introduce **human error**
- Does not provide **the highest risk reduction** on the system



SUSTAINED APPROACH

- Aims for a **permanent** and non-operationally dependent solution
- Seeking to minimize the **full-cycle cost of the hardening solution**
- Mitigate community impacts through a **data-driven methodology** that optimizes investment decisions.

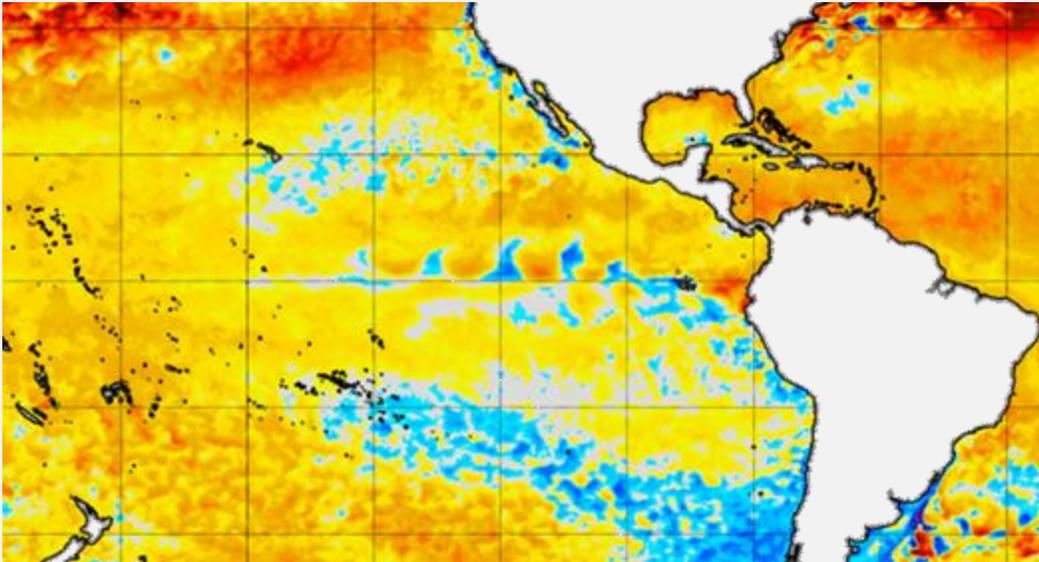




WEATHER FOR 2024 PSPS SEASON

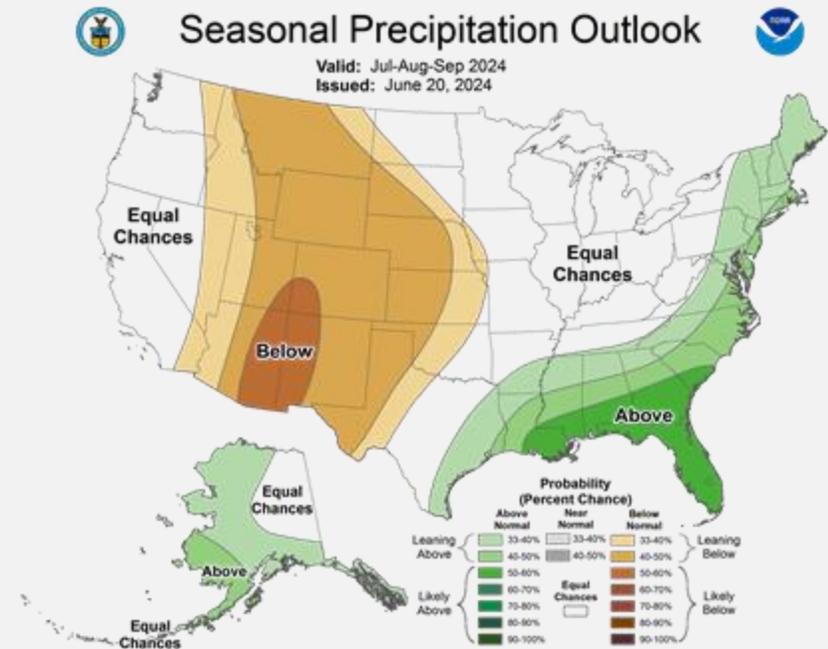
WEATHER FOR 2024 PSPS SEASON

CURRENT STATUS: LA NIÑA WATCH



“ La Niña is favored to develop during July-September and persist into the Northern Hemisphere winter 2024-25. ”

SO WHAT DOES THIS MEAN FOR US?



- La Niña conditions are typically associated with a delayed onset of winter rains/longer fire season.
- A lackluster summer monsoon season will greatly reduce the chance for seeing any improvements in fuel conditions as fall approaches.

FIRE WEATHER OUTLOOK

Large Fire Potential: Above normal inland in August, becoming above normal for all areas in September

Fuel Moisture: Grasses fully cured. Live fuel moistures declining, but remain higher than normal

FPI Outlook: The SDG&E Fire Potential Index is likely to remain Elevated for inland areas until the wet season begins this fall/early winter. Any Extreme ratings are expected to be limited to Santa Ana wind events this fall.





WILDFIRE MITIGATION FUNDING

WILDFIRE MITIGATION FUNDING

2019-2022 Actual Spend by Category (Capital & O&M)

CATEGORY	CAPITAL (\$K)	O&M (\$K)
Asset Management and Inspections	\$139,338	\$145,641
Data Governance	\$44,456	\$1,321
Emergency Planning and Preparedness*	\$7,686	\$42,203
Grid Design and System Hardening*	\$1,177,380	\$73,363
Grid Operations and Protocols*	\$33,452	\$35,380
Resource Allocation Methodology	\$0	\$13,198
Risk Assessment and Mapping*	\$1,869	\$1,824
Situational Awareness and Forecasting*	\$15,997	\$11,442
Stakeholder Cooperation and Community Engagement*	\$15,809	\$33,765
Vegetation Management and Inspections	\$0	\$47,550
Total	\$1,435,987	\$405,688

*Initiatives impact PSPS

WILDFIRE MITIGATION FUNDING

2023 Actual Spend by Category (Capital & O&M)

CATEGORY	CAPITAL (\$K)	O&M (\$K)
Grid Design, Operations, & Maintenance*	\$485,482	\$85,038
Vegetation Management & Inspection	\$880	\$82,433
Emergency Preparedness*	\$30,172	\$42,240
Wildfire Mitigation Strategy Development*	\$7,589	\$9,303
Situational Awareness & Forecasting*	\$1,578	\$4,334
Community Outreach and Engagement	\$0	\$435
Total	\$525,700	\$223,783

**Initiatives impact PSPS*



PSPS COMPARISON

2019-2023 PSPS COMPARISON

CRITERIA	2019	2020	2021	2022	2023
# PSPS events*	5 (1 non de-energization event)	7 (2 non de-energization events)	2 (1 non de-energization event)	0	1 (non de-energization event)
Counties Impacted	2	1	1	0	0
# Customers Notified	131,093	366,422	63,889	0	1,109
# Customers De-Energized	48,443	113,505	5,858	0	0
# Missed Notifications	N/A	8,790	6,983	0	0
Average Outage Duration	30h 02m	29h 49m	28h 13m	N/A	N/A
Average Restoration Times	3h 0m	2h 50m	3h 17m	N/A	N/A

*SDG&E counts a PSPS event if the EOC was activated, customers were notified, and a post-event report was filed.



LESSONS LEARNED

LESSONS LEARNED

**Joint IOU Coordination*

OBSERVATION	CORRECTIVE ACTION	STATUS
The address lookup tool on the website needs clarifying notes to proactively resolve potential errors in pasting addresses encountered by customers.	Add a tooltip on the SDGE website alerting customers/users to select the auto-generated address when using the address look-up tool, explore additional ways to improve the user experience using the address lookup tool	Completed
Customer confusion occurred due to a lack of alignment and coordinated timing of messages between SDG&E and telco providers*	Meet with the telecommunications partners to develop coordinated messaging to reduce customer confusion	Met with telecommunications partners to strategize timing and language of customer notifications
State Executive Briefing PowerPoint template is cumbersome and manual process to complete*	Joint IOUs meet with CALOES to discuss modifications to template	Joint IOUs (all 6 IOUs) met with CALOES twice, recommended modifications were submitted and we are pending a decision

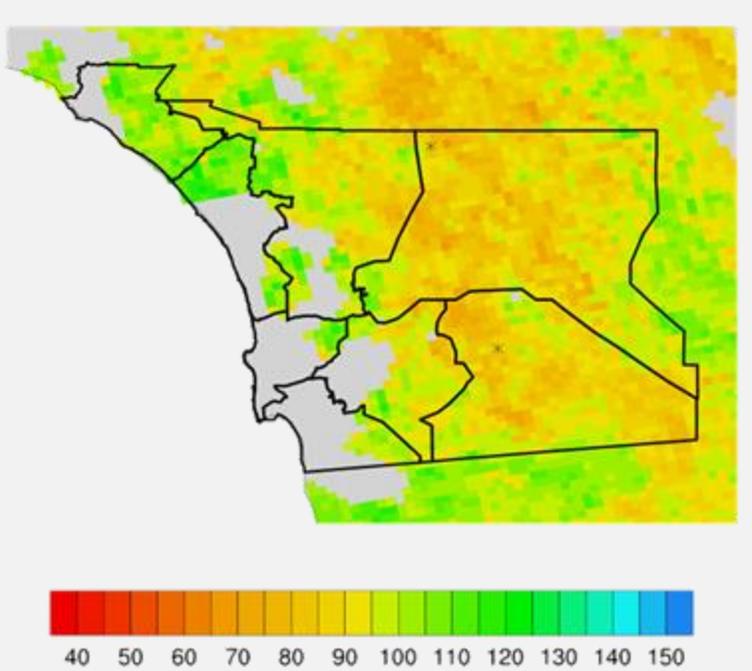
SDG&E continues to meet with PG&E and SCE as a working group monthly to discuss lessons learned and best practices related to PSPS. Key commonalities with lessons learned and coordination done as a working group in 2023 includes:

- Aligning on the timing and language used by telecommunication providers to message customers during PSPS events
- Coordinating the process for notifying and communicating with customers on shared circuits
- Aligning on recommendations to update the Statewide Executive Briefing deck for PSPS events

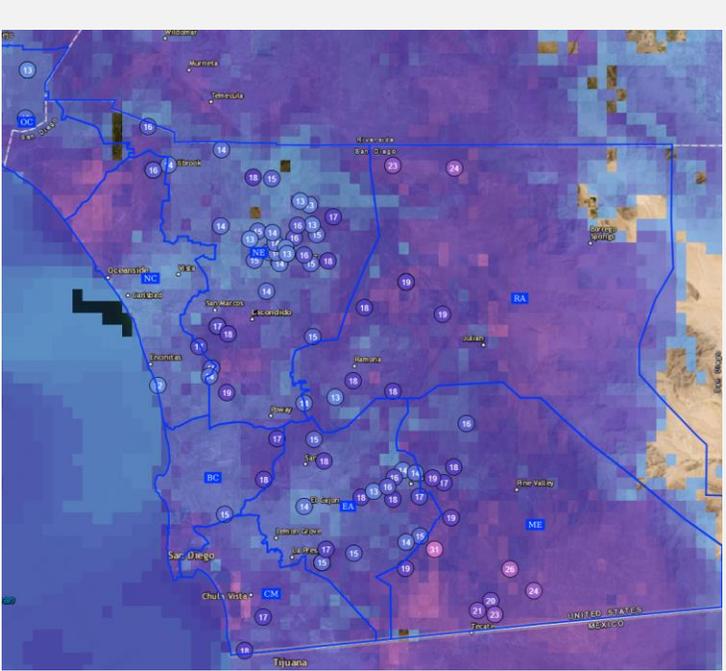


PLANNING AND PREPARATION FOR 2024

LEVERAGING AI TOOLS



Gridded AI-based fuels models provide more holistic look at fuel moisture content region-wide

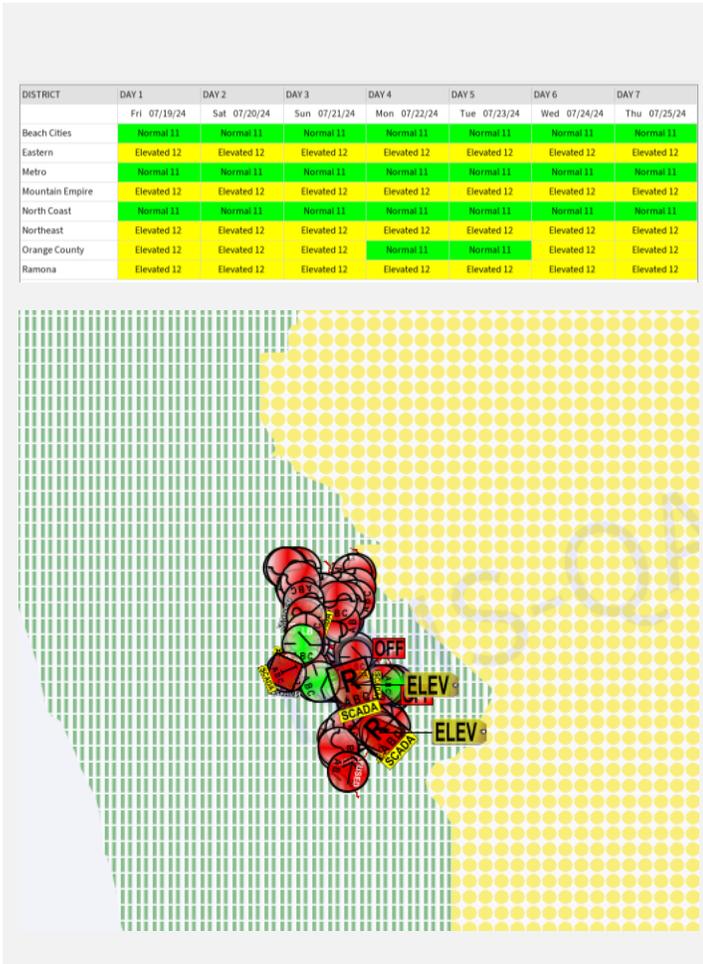


Machine learning wind gust models provide more accurate forecasts prior to PSPS events



AI smoke detection on the AlertWildfire network provides situational awareness of any potential fire events

OPERATIONAL ENHANCEMENTS



PSPS DIGITIZATION

- Adding efficiency in process and reporting on PSPS events through integration of PSPS processes with network management system, eliminating paper/manual forms for:
 - Authorization
 - To de-energize
 - To patrol
 - To re-energize
 - Observations
 - Observer locations
 - Observer forms
- To date, the observations process has been digitized.

FPI INTEGRATION

- For enhanced situational awareness the Fire Potential Index (FPI) calculated by meteorology can be added to our network management system.
- This data, previously shared via email, is now easier to access. FPI level changes our operational procedures.
- This layer opens up opportunities for continued enhancements for safety.

PSPS 2024 TABLETOP AND FUNCTIONAL EXERCISES



OVERVIEW

TABLETOP EXERCISE: APRIL 11, 2024

- Four-hour hybrid (in person and teams) discussion-based exercise.
- Primarily focused on notifications; detailed deep-dive on all notifications (SDG&E and public safety partner) during the full-spectrum of a PSPS.
- Participation included local jurisdiction, Telco, and other public safety partner attendance.

OVERVIEW

FUNCTIONAL EXERCISE: MAY 13-16, 2024

- Four-day functional exercise encompassing a full spectrum activation from decision to activate through all lines re-energized.
- Emphasis on new staff gaining proficiency, validation of plans, confirming functionality of systems/tools
- First activation in SDG&E's new EOC; tested in-person and hybrid procedures in the new facility.



156

Total Attendees



50% Increase in Overall Attendance



127% Increase in Partner Agencies' Participation

254

Participants

132

Players

28

Organizations

20

Hours

PSPS EXERCISES LESSONS LEARNED



IMPROVEMENT OPPORTUNITY

Develop and provide via the Public Safety Partner Portal a list of key terms or acronyms that partners should understand related to an electric utility involved incident.

Conduct continued refinement of the technology and communications equipment in the new EOC.

Work with joint IOUs and CalOES to refine process for State Executive Briefing and CalOES PowerPoint.

2024 PROGRAMMATIC RESPONSES

An acronym list was added to the Partner Portal Resource section that was developed with input from the Public Safety Partner Focus Group.

Identified and fixed audio technical issues during the Functional exercise.
Conducting additional planning and training on the use of new EOC equipment

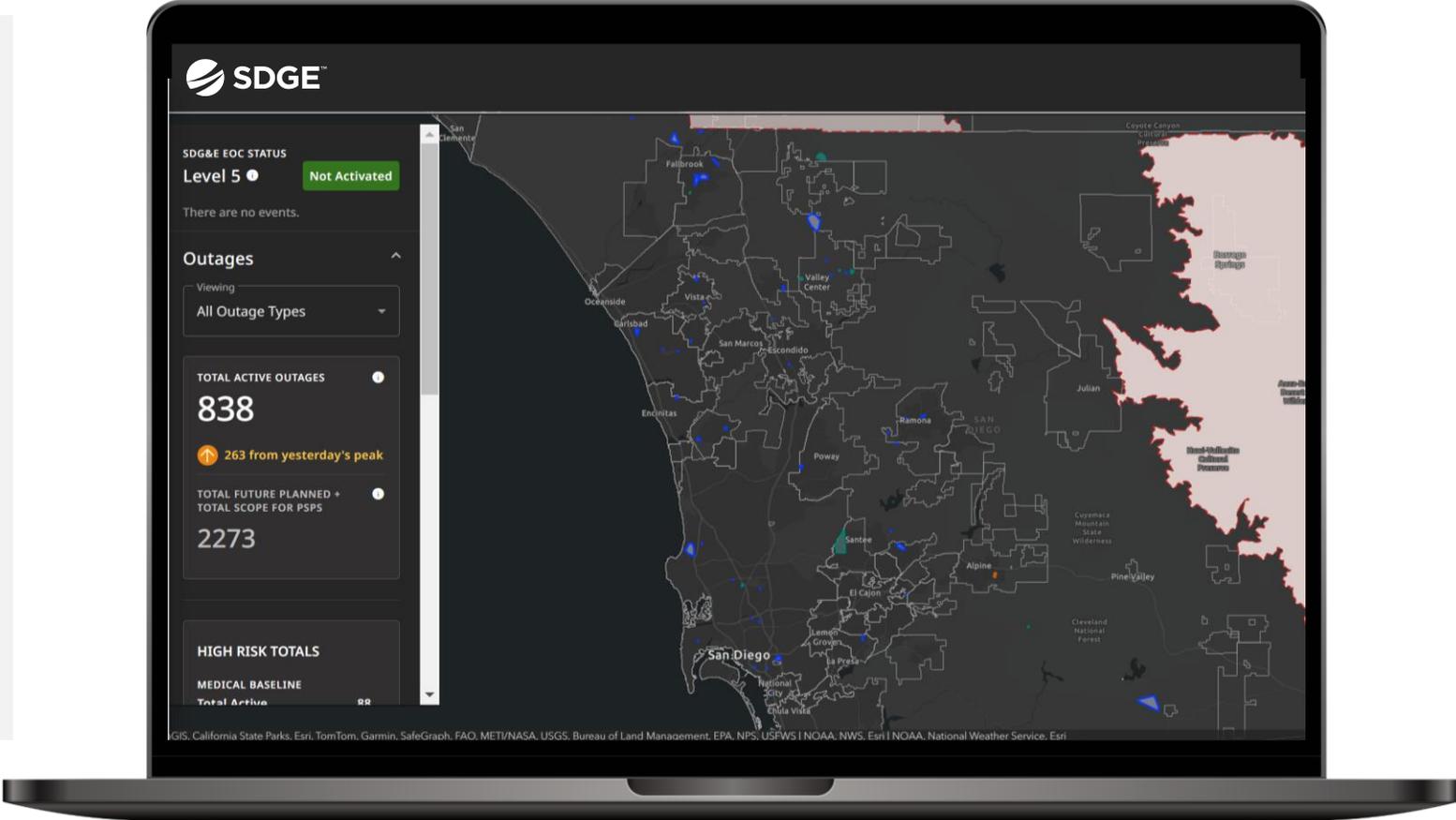
Joint IOU development of proposed Executive Briefing PowerPoint was sent to CalOES for review.

PARTNER PORTAL



ENHANCEMENTS

- Partner Notifications
- All-hazard Electric
- Export Capabilities
- WCAG 2.0 Compliant (AFN)
- Advanced Map Filters and Layering
- Improved data quality and integrity



For assistance, reach out to PartnerPortal@sdge.com

PARTNER PORTAL MOBILE APP



Current state

Stay updated on PSPS impacted communities

Track shutoff progress

Follow your communities for customized notifications

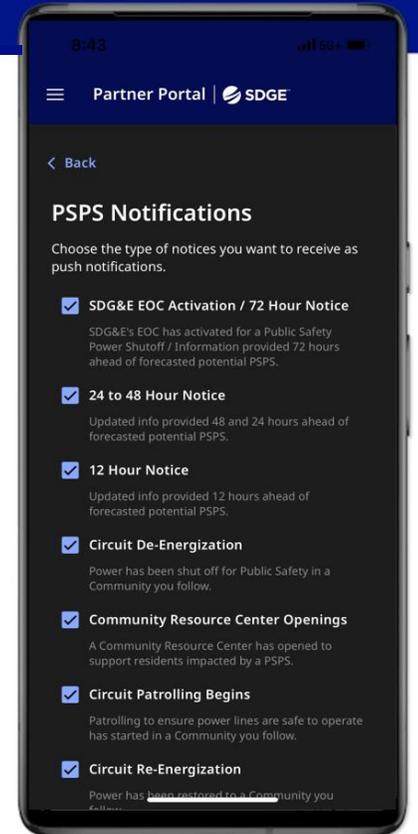
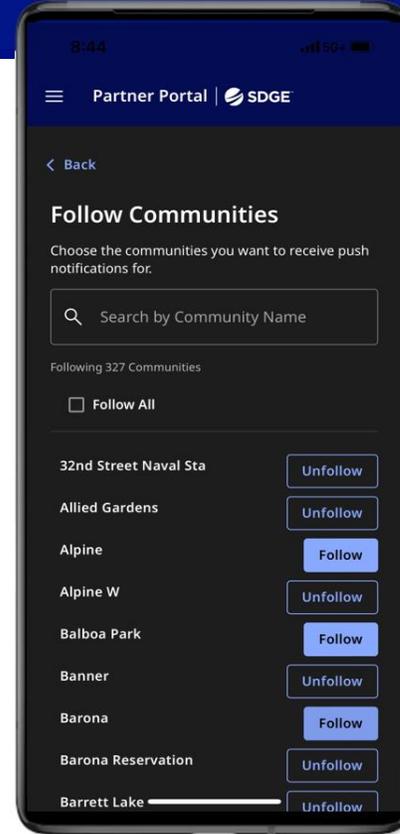
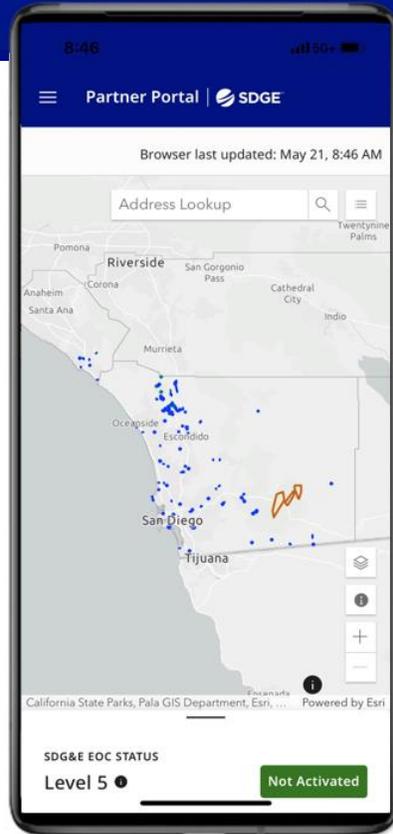
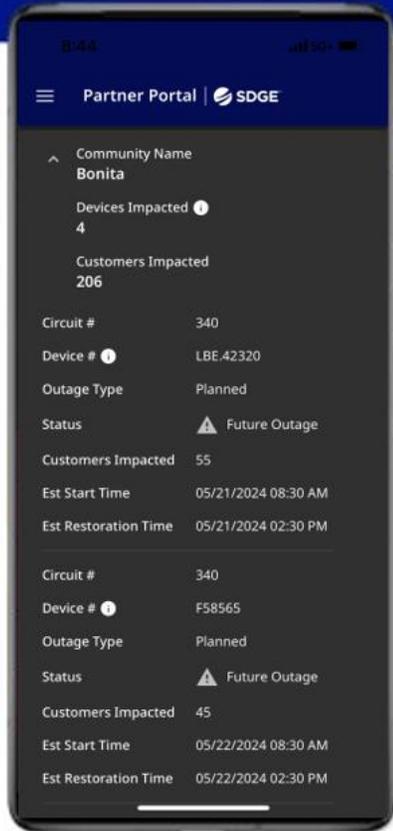
Modify your notification preferences

Same functionality as web platform

Customizable Push Notifications

Follow communities

Dark Mode/
Light Mode



PLAN CHANGES AND IMPROVEMENTS

Notification Plan / Education and Outreach:

- 2024 public education/marketing campaign has launched with new creative assets, including refreshed imagery for print and video
- SDG&E has reviewed PSPS and wildfire notifications for clarity and regulatory compliance, updated and translated into 22 languages and ASL
- SDG&E is modifying 2024 customer surveys with stronger evaluation of customer awareness of PSPS resources, especially within the AFN community

Critical Facilities and Infrastructure Plan:

- Plan outlines SDG&E's enhanced efforts to assess CFI customers' PSPS preparedness through refined survey questions aimed at obtaining updated information regarding PSPS contacts and backup generator capabilities

Community Resource Center Plan:

- Plan outlines SDG&E's efforts in PSPS community resiliency through partnerships with various communities that activate Community Resource Centers



GRID HARDENING AND MITIGATION MEASURES

2023 WILDFIRE MITIGATION BY THE NUMBERS



**COVERED
CONDUCTOR**
60 miles

100% target complete



**STRATEGIC
UNDERGROUNDING**
72 miles

86% target complete



**ASSET INSTALLATIONS /
REPLACEMENTS**
3,900 assets

165% target complete

**POLES
BRUSHED**
**>35,000
poles**

107% target complete



**TREES TRIMMED /
REMOVED**
**>13,000
trees**

120% target complete



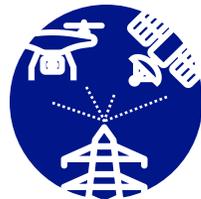
**VEGETATION
INSPECTIONS**
**>514,000
inspections**

120% target complete



**DETAILED ASSET
INSPECTIONS**
**>13,500
inspections**

101% target complete



**DRONE
INSPECTIONS**
**>15,000
inspections**

111% target complete



**PATROL
INSPECTIONS**
**>92,000
assets**

100% target complete

2024 WILDFIRE MITIGATION BY THE NUMBERS



**COVERED
CONDUCTOR**
40 miles

Planned to be installed in 2024
13 miles installed YTD



**STRATEGIC
UNDERGROUNDING**
125 miles

Planned to be installed in 2024
8 miles installed YTD



**ASSET INSTALLATIONS /
REPLACEMENTS**
2,500 assets

Planned to be replaced in 2024
> 1300 replaced YTD

**POLES
BRUSHED**
**>33,000
poles**

Planned to be brushed in 2024
> 32,500 brushed YTD



**TREES TRIMMED /
REMOVED**
**>11,000
trees**

Planned to be trimmed/removed in
2024 > 5,900 trimmed/removed YTD



**VEGETATION
INSPECTIONS**
**>485,000
inspections**

Planned to be performed in 2024
> 245,000 performed YTD



**DETAILED ASSET
INSPECTIONS**
**>17,000
inspections**

Planned to be performed in 2024
> 16,000 performed YTD



**SUBSTATION
INSPECTIONS**
**>350
inspections**

Planned to be performed in 2024
>200 performed YTD



**PATROL
INSPECTIONS**
**100%
assets**

Planned to be patrolled in 2024
72% completed YTD

MICROGRIDS

MICROGRID NAME	DATE OPERATIONAL	CUSTOMERS
Ramona Air Attack Base	2020	CAL FIRE Air Support United States Forest Service Air Support, and Fire-retardant mixing stations
Cameron Corners*	2020	Support 10+ critical facilities, including CAL FIRE
Butterfield Ranch*	2020	Residential customers
Shelter Valley*	2020	Residential customers and critical customers



Ramona Air Attack Base Microgrid



Cameron Corners Microgrid



Butterfield Ranch Community



Shelter Valley Community

*Permanent renewable solutions (Solar/Energy Storage) anticipated for completion by Q4 2024/2025.

FREQUENTLY IMPACTED CIRCUITS

Provide examples of grid hardening measures effect on most frequently impacted circuits. Have any frequently impacted circuits been mitigated to the point of no longer being under the potential of a future PSPS event?

CIRCUIT ID	NUMBER OF TIMES DE-ENERGIZED (IN LAST FOUR CALENDAR YEARS)	TOTAL MBL CUSTOMERS	TOTAL AFN CUSTOMERS	TOTAL CFI	TOTAL CUSTOMERS	STEPS TOWARD RISK-REDUCTION AND PSPS MITIGATION
79	5	50	178	33	894	Undergrounding, Generator Programs
157	4	65	326	45	1,019	Generator Programs
176	1	127	198	52	1,413	Sectionalizing, Generator Programs
214	4	34	175	82	681	Generator Programs
221	1	62	322	70	1,350	Undergrounding, Sectionalizing, Generator Programs, Microgrid
222	3	76	232	59	1,360	Undergrounding, Sectionalizing, Generator Programs
237	2	139	475	45	1,595	Sectionalizing, Generator Programs
357	3	301	464	31	1,939	Undergrounding, Generator Programs
441	3	4	14	54	113	Undergrounding, Generator Programs
442	1	71	219	61	1,133	Undergrounding, Sectionalizing, Generator Programs
445	4	70	360	68	965	Undergrounding, Sectionalizing, Generator Programs
448	2	79	419	42	1,030	Undergrounding, Generator Programs, Microgrid
972	1	203	1060	76	2,862	Undergrounding, Generator Programs, Microgrid
1030	4	96	394	63	1,381	Undergrounding, Sectionalizing, Generator Programs



IMPROVEMENTS TO DATA ACCURACY IN POST EVENT REPORTING

IMPROVEMENTS TO DATA ACCURACY IN POST EVENT REPORTING

Improvements to foundational data and working on enhancements to automation data.

FOUNDATIONAL DATA

Data sets impacting PSPS reporting are automated and centralized

- Distribution and Transmission outage data
- Wire Down data
- Ignition data
- Meteorological data
- Vegetation data

Data sets refreshed routinely; capable of refresh as needed

Data governance framework is established

POST-EVENT REPORTING

Dashboard and data repository enhancements for post-event reporting

- Adds consistency and accountability
- Automating data where possible
- Creating consistent forms where automation is not possible
- Including data governance
- Sign offs at SME and Management level
- Ability to compile data for ease and consistency of post-season reporting



NOTIFICATION / COMMUNICATIONS

NOTIFICATION PLAN



In-language translations: PSPS notifications translated into 22 prevalent languages and interpreted into American Sign Language (ASL) with video



Consistency across platforms: Develop customized talking points for each audience to ensure consistent OneVoice communications



Coordination with stakeholders: Coordination with public safety partners key to operational coordination and synchronized and magnified messaging



Lessons learned: After-Action Reviews (AAR) are used to identify, document and incorporate PSPS-related decisions and actions into the continuous process, quality improvement and learning cycle

OBJECTIVES

- Develop strategies to ensure timely notifications are made as prescribed
- Promptly acknowledge the incident with a commitment to provide stakeholders more information
- Speak with “OneVoice” to provide a consistent message to all stakeholders
- Be transparent by proactively offering a continuous stream of updated & relevant information
- Reach all stakeholders by communicating across every possible channel
- Tell our story leveraging visual communications & third-party support to help tell that story

NOTIFICATION/COMMUNICATIONS

Updates and Improvements

NEW MY ENERGY CENTER PLATFORM

- Transitioning from 'My Account' platform to 'My Energy Center'
- Customers can update contact information/sign up for notifications
- Will be promoted in refreshed Wildfire/PSPS public education campaign

NOTIFICATION UPDATES

- Customer account data was audited for missing emergency contact information. Outreach to gain emergency data and update account records completed for MBL and HFTD residential customers
- All PSPS and wildfire notifications have been reviewed and refined for the new notification platform, including translations into 22 languages and American Sign Language
- Public Safety Partner database updated quarterly
- Proactively obtain and update critical infrastructure/facility contact information through an annual outreach campaign (letters, emails, calls), in addition to regular reviews and updates throughout the year

AFN IDENTIFICATION

- SDG&E continues to leverage the AFN self-ID campaign to identify specific needs and communication preferences within the service territory
- MBL campaign to AFN self-identified households to update contact information

NOTIFICATION / COMMUNICATION

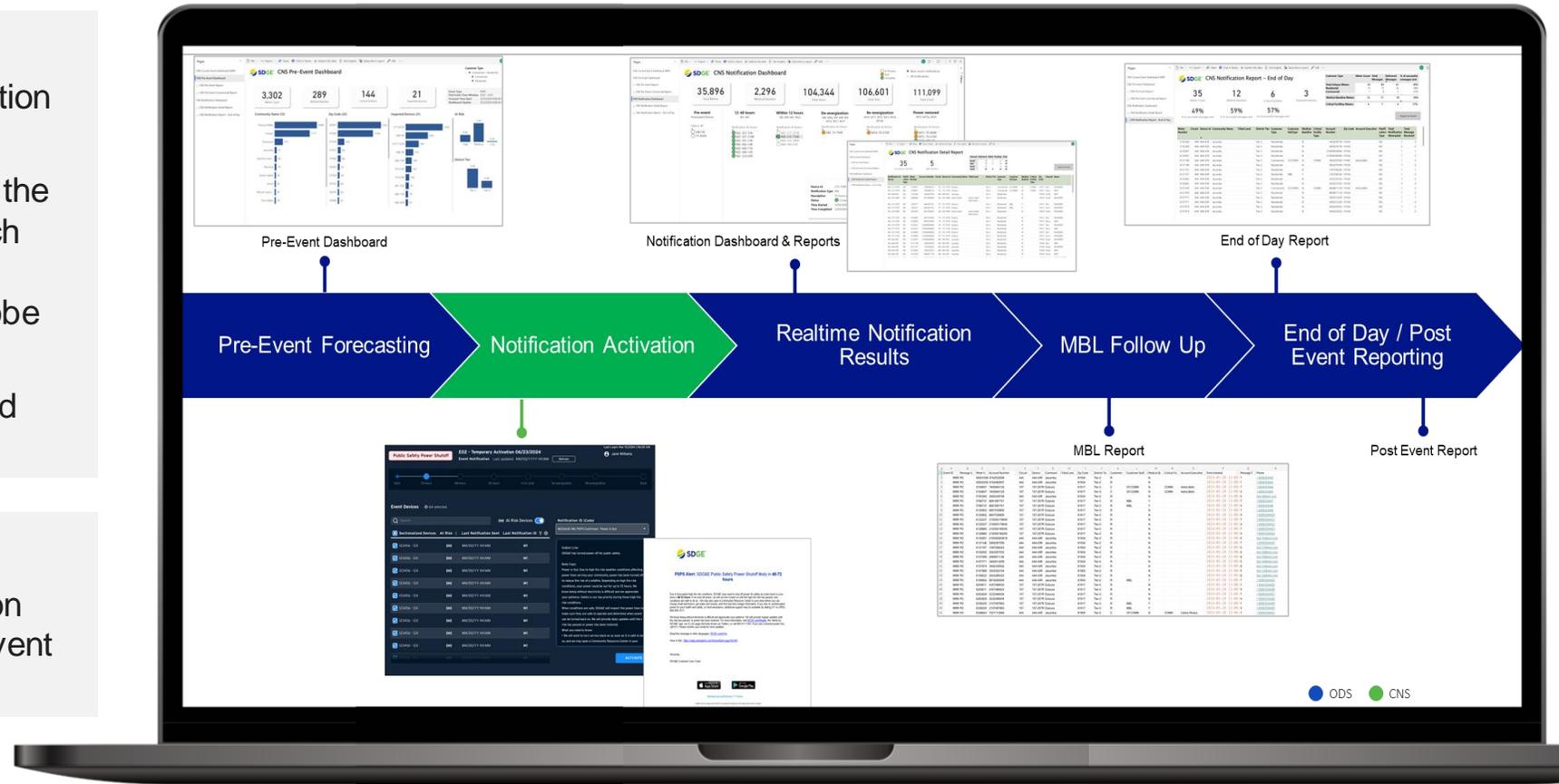
Updates and Improvements

CUSTOMER NOTIFICATION SYSTEM

- Implemented new customer notification system leveraging AWS Pinpoint.
- Stable and Reliable: Amazon offers the concept of “Global Resiliency”, which allows functionality to shift between different data centers across the globe should disasters occur.
- Improved notification processing and delivery speed to customers

NOTIFICATION REPORTING

- Centralized customer and notification reporting to ensure accurate post event reporting metrics.



COMMITMENT TO ACCESSIBILITY

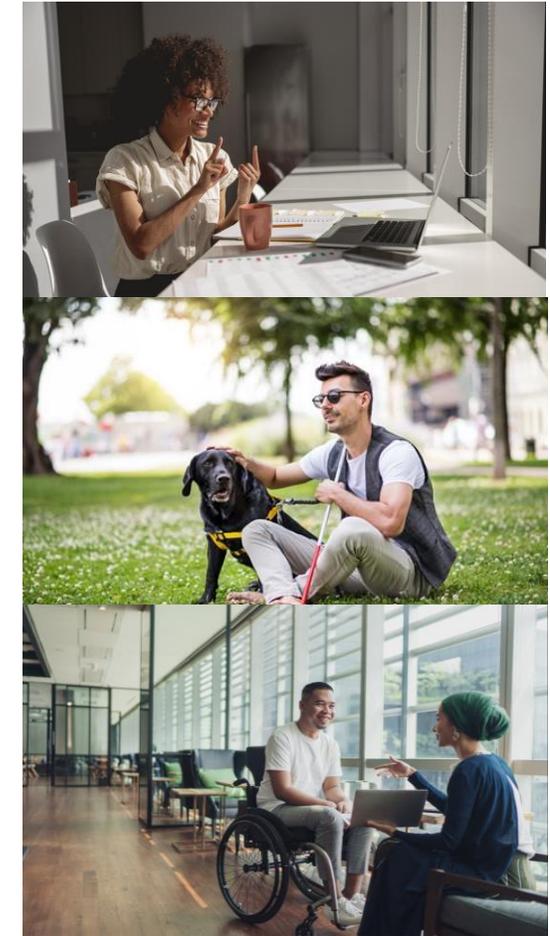
More Inclusive Through Accessibility

DIGITAL ACCESSIBILITY

- Continual testing & remediation of websites to WCAG 2.2 AA success criteria.
 - [SDGE.com](https://www.sdge.com)
 - [SDGenews.com](https://www.sdgenews.com)
 - [MyAccount.SDGE.com](https://myaccount.sdge.com)
- Dedicated webpage for customer resources
 - [SDGE.com/AFN](https://www.sdge.com/AFN)
- Accessibility Statement with contact for accessibility support
 - ADAsupport@sdge.com

COMMUNICATIONS

- In-person communication via Video Remote Interpreting (VRI)
- Emergency Notifications via Accessible Hazard Alert System (AHAS)
- Dedicated email for direct customer support: ADAsupport@sdge.com



WILDFIRE AND CLIMATE RESILIENCY CENTER (WCRC) METRICS

570 EXTERNAL VISITORS

ORGANIZATIONS

- 109 Industry Partners
- 33 Government Agencies
- 26 Stakeholders
- 21 Community-based Organizations
- 8 Higher Education
- 8 Tribal
- 4 Schools
- 4 Emergency Services

76 Tours | 154 Visitors | 208 Organizations





BATTERY BACKUP PROGRAMS

BACKUP GENERATOR & BATTERY PROGRAMS

PROGRAM	GENERATOR GRANT PROGRAM	GENERATOR ASSISTANCE PROGRAM	STANDBY POWER PROGRAMS
<p>OVERVIEW</p>	<p>Portable backup battery provided to MBL & AFN customers in the HFTD with prior PSPS (active August-Dec)</p> 	<p>Portable fuel generator & portable power station rebates for HFTD customers with prior PSPS, additional rebate for CARE customers (active June-Dec)</p> 	<p>Provides a permanent generator or backup battery to customers that have a high risk of experiencing a PSPS</p> 
<p>2023 PROGRAM RESULTS</p>	<ul style="list-style-type: none"> Delivered 800 units; 5,500 total since 2019 93% of customers feel more prepared for a power outage 	<ul style="list-style-type: none"> Provided 250 rebates; 2,400 total since 2020 Streamlined customer rebate process 84% of customers feel more prepared for a power outage 	<ul style="list-style-type: none"> 360 residential projects; 1,200 total since 2020 10 commercial projects; 17 total since 2020 1 mobile home park project; 3 total since 2021
<p>2024</p>	<ul style="list-style-type: none"> Target: 200 customers Emergency, on-demand deliveries available Enhancing customer resiliency assessment and education 	<ul style="list-style-type: none"> Target: 500 rebates Including more models with safety features to qualified product list Increased rebate amounts 	<ul style="list-style-type: none"> Target: 75 residential projects Integrate permanent backup batteries 3-4 commercial / mobile home park projects Continue with schools, & Community Resource Centers

Of those within HFTD, and 1+ PSPS, with MBL, Life Support, or AFN (Disabled, Low Vision, Hard of Hearing, Temperature Sensitive, Self-Identified), 70% are supported via backup program



FORECASTING AND PSPS DE-ENERGIZATION DECISION-MAKING

PSPS DECISION-MAKING FRAMEWORK

Improved FPI and SAWTI models to flag and evaluate discrepancies between predictions and observations

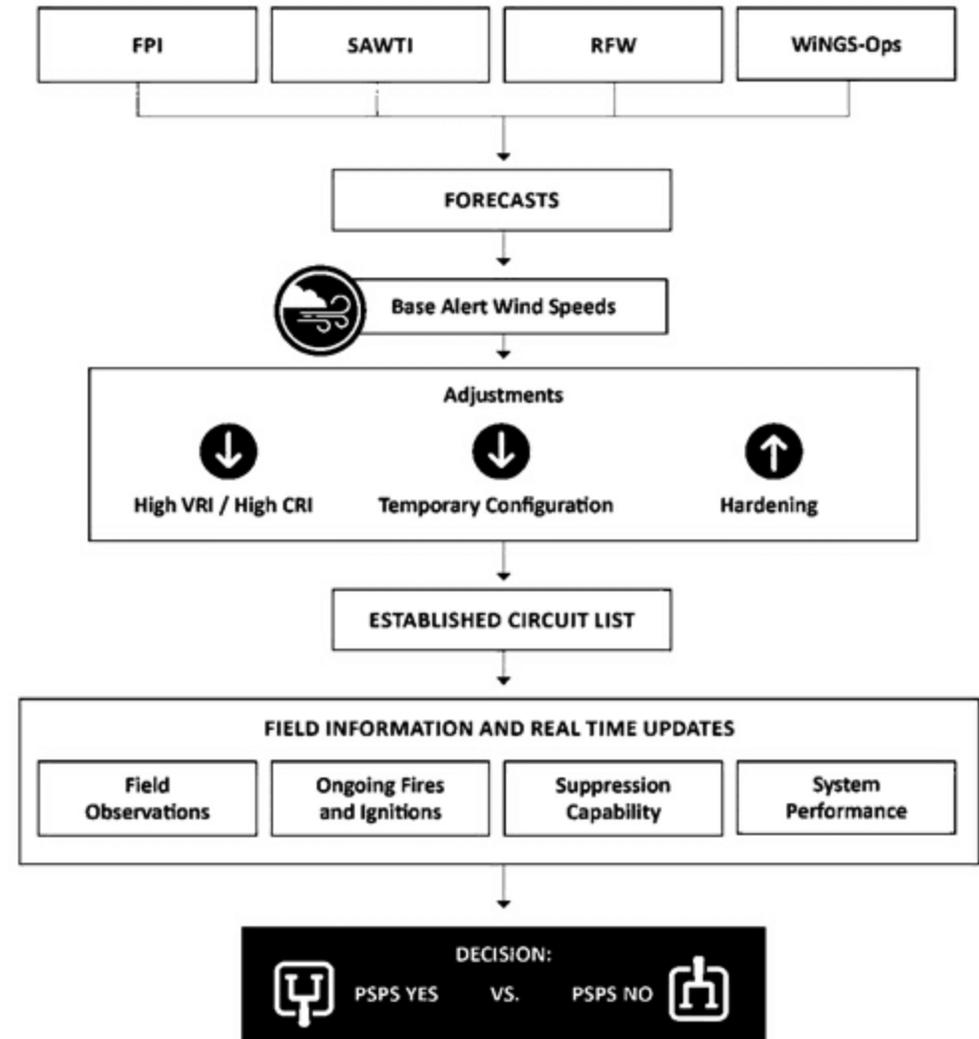
- An internal review of 4.5 years of data showed that Fire Potential Index (FPI) calculations were 87% accurate
- We are updating Santa Ana Wind Threat Index (SAWTI) thresholds, working with the US Forest Service to align with new outputs

Progressing wildfire and PSPS consequence analysis to account for impacts to **Access and Functional Needs** customers

- Factors that artificially elevate the safety risk estimates for PSPS critical facilities, urgent, essential, sensitive, and AFN customers

Complementing our Vegetation Risk Index with a predictive component of the WiNGS-Ops model to **assess the probability of vegetation-related outages** given forecasted weather conditions

- Vegetation model designed to assess the probability of vegetation contact with our assets



OPERATIONAL RISK MODELING ADVANCEMENTS



Improved accuracy of predictive models by adding wind and tree-related outages from conductor model, updating vegetation model, and implementing automated validation scripts



Regularly conduct back-casting analyses to assess how modes behaved during previous PSPS activations for **continuous improvement**



Refined consequence modeling through incorporation of soil moisture to inform probability of ignition (POI) with **more relevant, real-time conditions**



Migration of models to the cloud environment to meet internal cybersecurity requirements, supports reproducibility, code version control, and audibility



Enhanced platform to **visualize wildfire risk estimations** in the form of acres burned and buildings destroyed

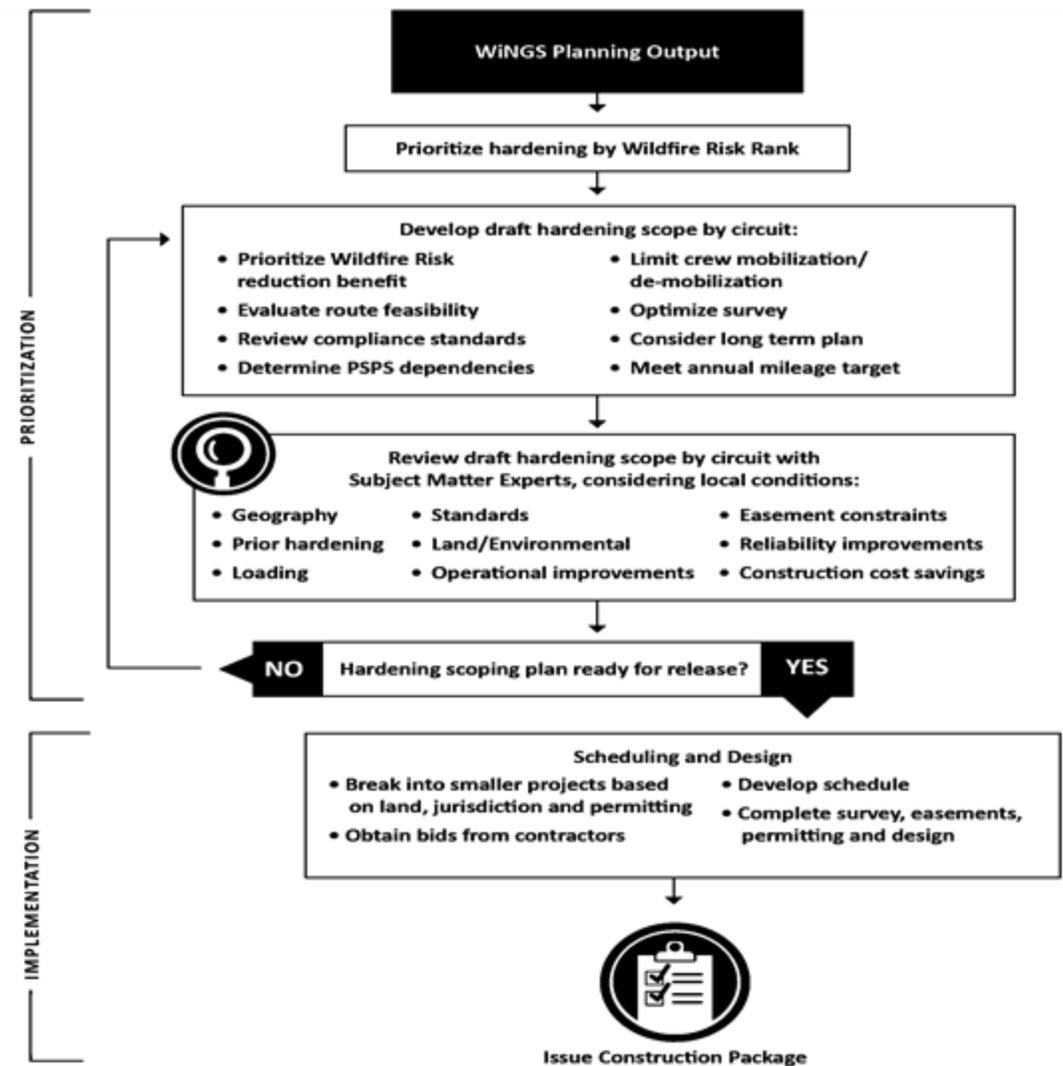


Established a more formalized procedure for conducting **independent reviews** of data and models

MITIGATION PRIORITIZATION TO REDUCE WILDFIRE AND PSPS RISK

IMPROVEMENTS UNDERWAY:

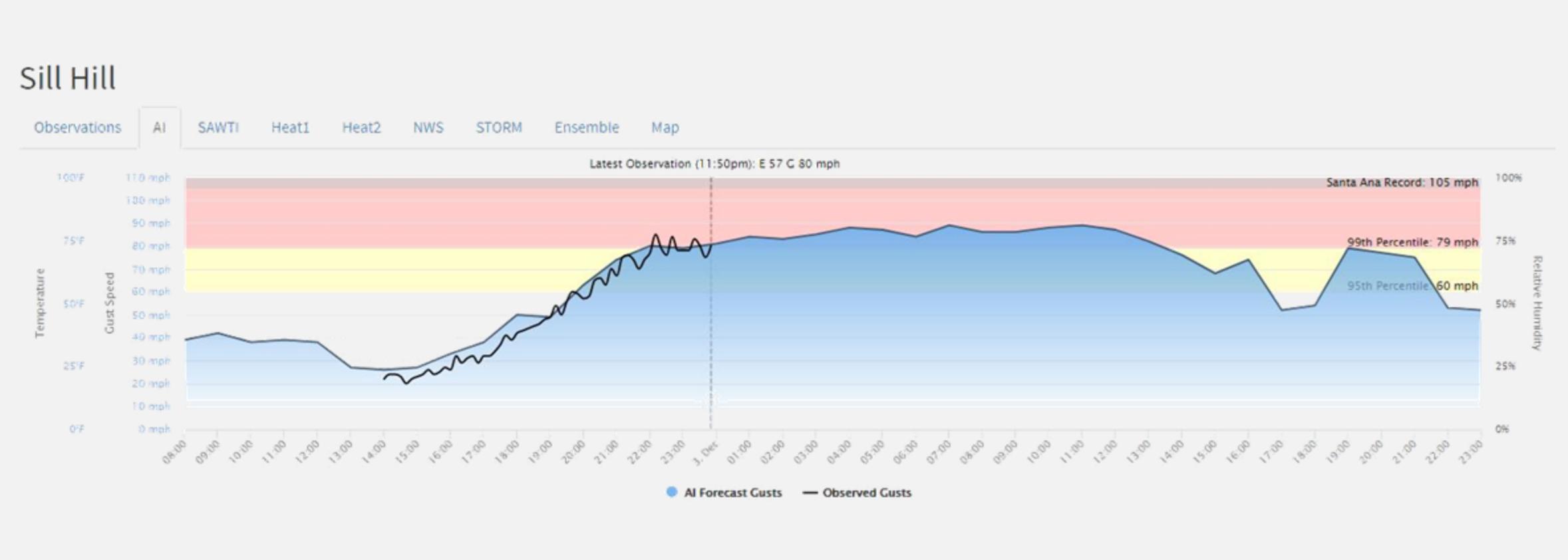
- Integrate POI from WiNGS-Ops
- Incorporate Social Vulnerability Index (SVI) and egress factors into consequence calculations
- Incorporate PSPS Risk into decision framework
- Implement Cost Benefit Ratio framework to normalize consequence values to inform mitigation decision making





RESTORATION

RESTORATION



AI-generated forecasts create an hour-by-hour outlook that is leveraged in creating timelines for the initiation of restoration efforts.



EPSS/FAST TRIP/FAST CURVE SETTINGS

EPSS/FAST TRIP/FAST CURVE SETTINGS

- There is no correlation between Sensitive Relay Profile (SRP) and PSPS.
- SRP and PSPS are distinct mitigations and should not be treated the same or used as substitutes for one another.
- SDG&E will enable SRP setting if PSPS de-energizations are predicted or if the FPI is Extreme. These settings are implemented only during the at-risk period, not seasonally, & only in regions impacted by extreme weather.

Program (2017-2022)	Outages	CMI	SAIFI	SAIDI	Customer Impact	CAIDI	Ignitions
PSPS	368	356,540,099	0.141	241.288	216,282	1705.895	0
SRP	102	45,455,514	0.049	30.684	73,026	626.830	0
Program (2023)	Outages	CMI	SAIFI	SAIDI	Customer Impact	CAIDI	Ignitions
PSPS	0	0	0	0	0	0	0
SRP	5	295,816	0.001	0.196	1,471	169.523	0

- When SRP is enabled, SDG&E has dedicated crews staffed for restoration and readiness response. Line SCADA crews are staffed 24/7, ready to respond to collect relay event records.
- A complete patrol is required, and step restore is performed for all outages.
- SRP enhances sensitivity during specific conditions, while PSPS is a planned safety measure during extreme weather.



MEDICAL BASELINE (MBL) / ACCESS AND FUNCTIONAL NEEDS (AFN)

MEDICAL BASELINE (MBL) / ACCESS AND FUNCTIONAL NEEDS (AFN)

MBL IMPROVEMENTS

Medical Baseline Enrollment Forms Simplified:

- Streamlined customer experience
- Reduced processing time

Recertification Cycles Modified:

- Permanent disability: Self-certify every four years (previously two)
- Non-permanent disability: Doctor's certification every two years (previously annually)

Collaboration with local medical centers for MBL participation.

- Relationship with Kaiser Hospital
- Plan to replicate with other hospitals

MBL/AFN MARKETING & OUTREACH

MBL Update Contact Information Campaign

- Annual campaign for updated contact info

AFN/HFTD Preparedness Campaign

- AFN & MBL customers receive PSPS preparedness information

Prepare for Power Down Joint IOU Website

- MBL program details and applications
- Improved website campaign Aug- Dec

MBL Focused Presentations & Community Events

- Outreach events during fall campaign
- FEMA events for flood victims
- Tribal events for PSPS notifications
- Presentations & Training with AFN CBO's
- Applications at DME facilities

MBL Campaign to AFN Self-Identified Households.

- AFN Customers not signed up for MBL

AFN IDENTIFICATION



Data automation tool using **BOT** system that captures customer data with unique AFN identifiers



AFN Webform to **encourage self-identification** and expand awareness of SDG&E's customer-base and their unique needs



AFN Heat Map to identify where individuals with AFN reside within SDG&E's service territory



Dedicated AFN marketing campaigns through direct mail and email

~33%

Total AFN customers throughout SDG&E service territory

~11%

Total AFN customers in HFTD

15

Unique AFN identifiers

~9,800

Total AFN identified through Self-ID



2023 PSPS SURVEY RESULTS

2023 PSPS SURVEY RESULTS

Soliciting customer feedback through continuous improvements and tailored communications

YEAR OVER YEAR COMPARISON, AND TAKEAWAYS

Past survey results show a high degree of awareness and understanding of PSPS in the High Fire Threat District areas.

SDG&E continuously works to raise awareness throughout the territory as well as through territory-wide Public Education campaign.

SDG&E is expanding 2024 surveys to test awareness of PSPS resources.

Working to overcome public complacency as no PSPS outages for several years.

CUSTOMER COMPLAINTS

NATURE OF COMPLAINT	NUMBER OF COMPLAINTS
Communications/Notifications	16
General PSPS Dissatisfaction/Other	1
Safety/Health Concern	1
Grand Total	18

- Majority of complaints were related to telecommunication providers sending confusing messages to customers.
- One customer expressed concern for an elderly relative who lives alone.
- One customer received PSPS brochures for occupants of a building that had been demolished.
- SDG&E partnered with Cox Communication to ensure that both utilities are delivering a unified message to customers to avoid confusion.
- Prior to the start of fire season, Medical Baseline Customers are notified to update their contact information.
- Customers are referred to our dedicated PSPS section on our website.
- Customers can set up their preferred method of communication to receive alerts from SDG&E on My Account.

PSPS AFN CUSTOMER IMPACT STUDY

Launched in Q4 2023 and identifying opportunities to enhance support in 2024.



MISSION

Develop data-driven recommendations to...

1. **Evolve understanding** of climate-driven customer impacts
2. **Enhance PSPS mitigation** efforts
3. **Advance support services** to meet the needs of SDG&E's customers, specifically those who are most vulnerable or rely on uninterrupted power

APPROACH

 **Review** of relevant documentation, guidelines, policies, and available insights

 **Secondary research** into market trends, community resources, reports on PSPS and households with and without AFN

 Comprehensive **synthesis and analysis of information** provided by SDG&E stakeholders, IOUs, etc.

 **Interviews with SDG&E stakeholders**, industry experts, and community members

 **Baseline survey** with SDG&E employees living in the HFTD to ideate and validate survey

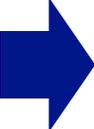
 **Customer survey*** to households with AFN and without AFN to identify impacts and feedback

OUTCOMES

Quantify customer impacts and develop repeatable models and frameworks to understand impact over time

Continuously improve and adapt to our customer's needs and changing circumstances

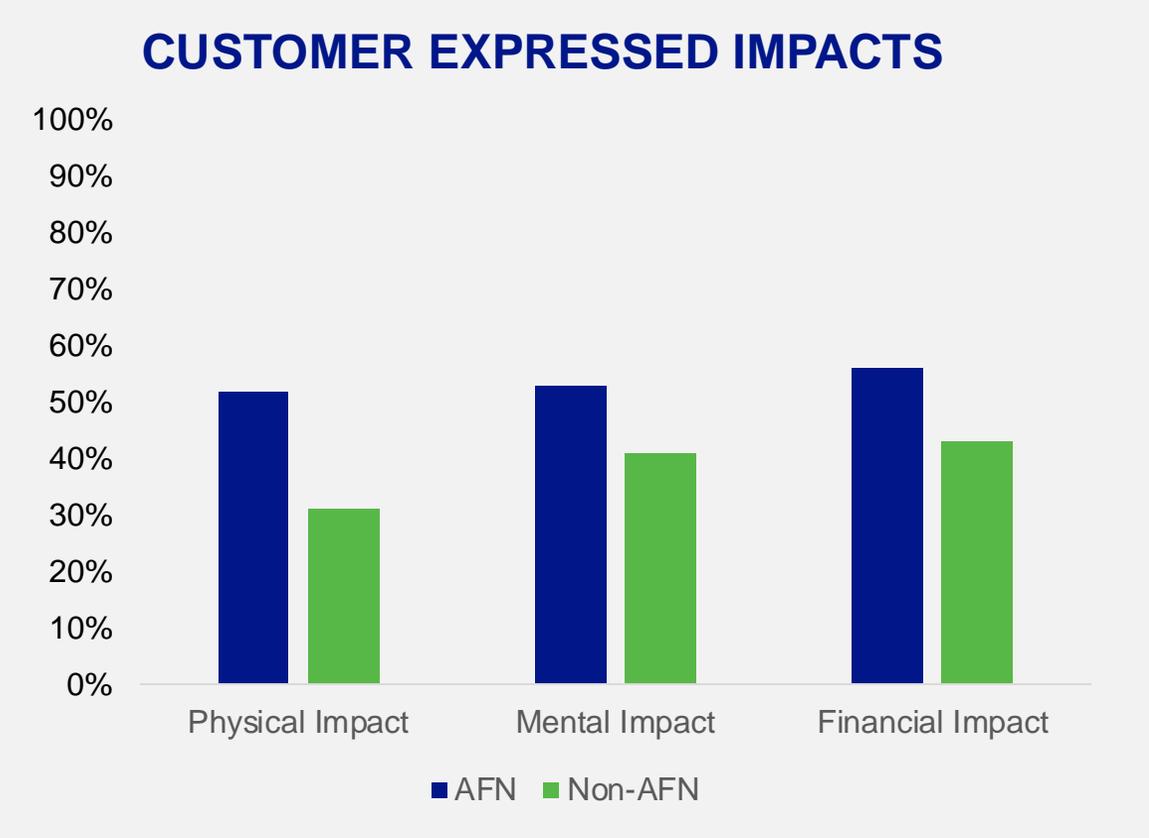
Leverage information to enhance customer communications and offerings



*Survey screening questions were included to narrow down customers and employees who have experienced PSPS

KEY CONSIDERATIONS AND OPPORTUNITIES

Customers express physical, mental, and financial impacts throughout the PSPS lifecycle.



CONSIDERATIONS MOVING FORWARD



Expand Existing Partnerships to allow partners to proactively assist vulnerable customers (e.g. customized evacuation checklists).



Share AFN & Resource data cross-functionally within SDG&E to accelerate decision-making and drive improved customer outcomes.



Broaden Healthcare Partnerships to bring awareness to programs and support MBL enrollment as patients are discharged from facilities.



Enhance Outage Map to better illustrate outage footprint, which can help inform customers of unimpacted areas where stores will be open and operating.

*Survey screening questions were included to narrow down customers and employees who have experienced PSPS



OVERVIEW OF CUSTOMER SUPPORT AND RESOURCES

CBO COORDINATION AND ENGAGEMENT



Wildfire Safety Fairs

- Four fairs targeted in High Fire Threat District in Ramona, Alpine, Valley Center and Rancho Bernardo
- “Go bag” & preparedness demos for children and adults



Mini-Wildfire Safety Fairs

- 3rd year with goal of 65 fairs
- Focus on expanding reach to rural customers in partnership with CERT, Fire Safe Councils, Tribes, local Fire Departments and key CBOs



Energy Solutions Partners

- Network of ~200 community-based organizations reaching key customer segments
- Engaging community through events, social media, workshops and trainings

CUSTOMER SUPPORT AND RESOURCES



Community Resource Centers

- 11 facilities in the HFTD
- Provides a local center for impacted customers to receive support and resiliency items, with a focus on AFN



Transportation

- Partnership with FACT paratransit
- Provides accessible transportation to customers' location of choice including CRCs



Tribal Partnerships

- Partnerships with Southern Indian Health Council (SIHC) and Indian Health Council (IHC)
- Provides resiliency items and resources



Hotel Stays

- Partnership with Salvation Army
- Provides no-cost hotel stays if staying in place is not an option (SDG&E may provide an emergency battery)



Centralized Resource Hub

- Partnerships with 211 San Diego/OC United Way
- Connects customers to resources and direct support from 1,000+ orgs, 24/7/365, over 200 languages



Wellness Checks

- Partnerships with local CERTS and YANA
- Provide wellness checks to individuals with AFN who may need additional support



Pantry & Warm Food

- Partnership with SD Food Bank & Feeding SD to provide mobile food pantries at rural, tribal and PSPS sites
- Warm Food vendors to provide additional options, as needed



Community Engagement

- ~50 CBOs within SDG&E's Energy Solutions Partner Network
- Amplified PSPS notifications to expand reach in HFTD

2024 AFN RESOURCE ENHANCEMENTS

Continuous enhancements to support individuals and households with Access and Functional Needs.



Best Practices Blueprint

- Tool to showcase best practices and support for PSPS with focus on AFN
- Collaboration with Joint IOUs and Cal OES
- Socialization in Q3



Prepare for Power Down Website

- Joint IOU & CalOES collaboration of before, during and after prepared resources for a potential PSPS
- Easy search to find programs and tools available statewide or by zip code
- Phase 3 launch and campaign August-December 2024



Blue Envelope Program

- Launched by SD County Sheriff's Department
- Enhanced communication awareness tool used by community personnel
- Coordinating training with SDG&E Customer Service Field



Strategic Partnerships

- Expansion of Energy Solutions Partner Network
- Expansion of PSPS preparedness training with AFN CBOs
- Refinement of support services with AFN CBO partners



THANK YOU

JOINT IOU WORKING GROUP LESSONS LEARNED



PSPS Joint IOU Working Group continues to meet monthly. 2023 Shared discussions include:

- Benchmarking on successes and areas of opportunity for the PSPS customer notification process
- Building synergies on customer outreach methods, customer notification testing, and approaches to customer data quality
- Sharing approaches to estimated restoration customer notifications and notification curfew hours
- Calculating customer positive notifications during PSPS events
- Notifying public safety partners during a PSPS event
- Developing message language and process for CBO notifications
- Outreaching to and engaging with non-account holders during a PSPS event
- Confirming receipt of in-event notifications for local governments and tribal nations
- **Working with telecommunication providers to align on the timing and language used for customer notifications**
- Aligning on Enhanced Community Support Standard
- Translating PSPS best practices to all-hazards response efforts
- Determining in-scope circuits/customers for PSPS events which informs the notification send-out process
- **Discussing IOU-shared customers and the process to identify and notify these customers affected by a PSPS event**
- Updating the risk model which drives the PSPS decision-making process
- Outlining shared approaches to the PSPS restoration planning process
- Aligning on common data definitions, calculation methodologies, and count criteria for PSPS reporting
- Coordinating appropriate sensitivity and confidentiality declarations for PSPS post-event reports
- **Content alignment for State Executive Briefing templates for PSPS events**

Break

Bear Valley Electric Service



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BVES 2024 PSPS Post-Season/ Pre-Season Workshop

Paul Marconi, President, Treasurer, Secretary, & Safety Committee Chairman

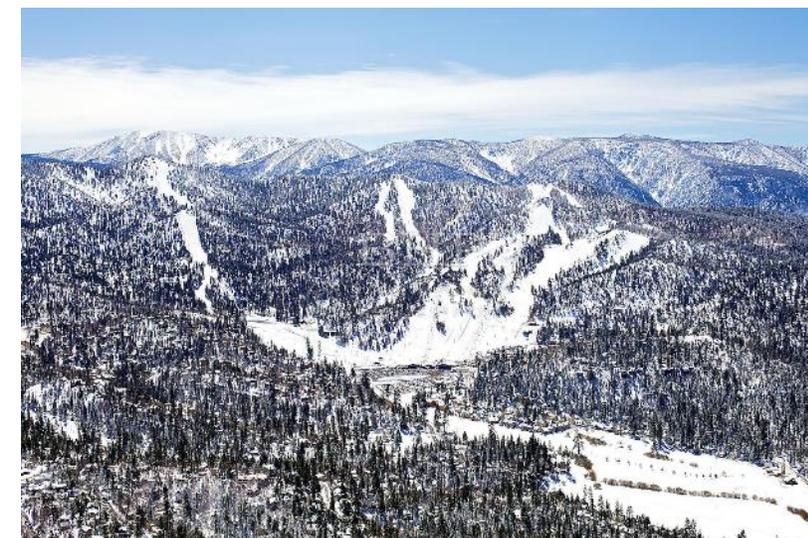
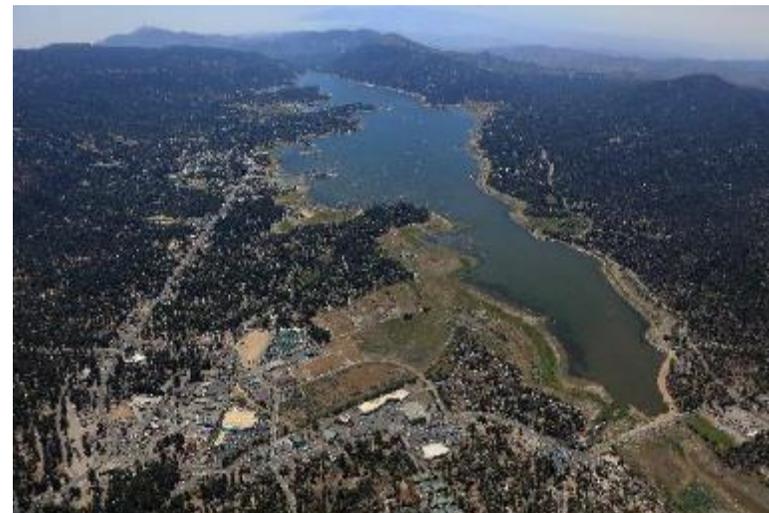
Sean Matlock, Energy Resource Manager & Assistant Corporate Secretary

August 2024



Agenda Outline

1. **Introduction & BVES Overview**
2. **2023 PSPS Season Review**
 - Wildfire Mitigation Funding Accountability
 - Prior Year Performance
 - Lessons Learned
 - 2023 PSPS Survey Results
3. **2024 Planning & Preparation**
 - Mitigation Measures
 - Meteorology/ Weather for 2024 PSPS Season
 - Improvements to Data Accuracy
 - Notifications/Communications
 - Battery Backup Programs
4. **Forecasting**
5. **PSPS De-Energization Decision-Making**
6. **Restoration**
 - EPSS/Fast Trip/ Fast Curve Settings
7. **Overview of Customer Support and Resources**
 - MBL/AFN Groups





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BVES Service Area Overview

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Service Area Overview



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Location: 32-sq. miles of rural and mountainous terrain at approximately 7,000 ft. in San Bernardino Mountains (80 miles East of Los Angeles).

- Entire Service Area is > 3,000 ft. elevation requiring more resilient construction standards.

Key jurisdictions: County of San Bernardino, City of Big Bear Lake, U.S. Forest Service, CALTRANS.

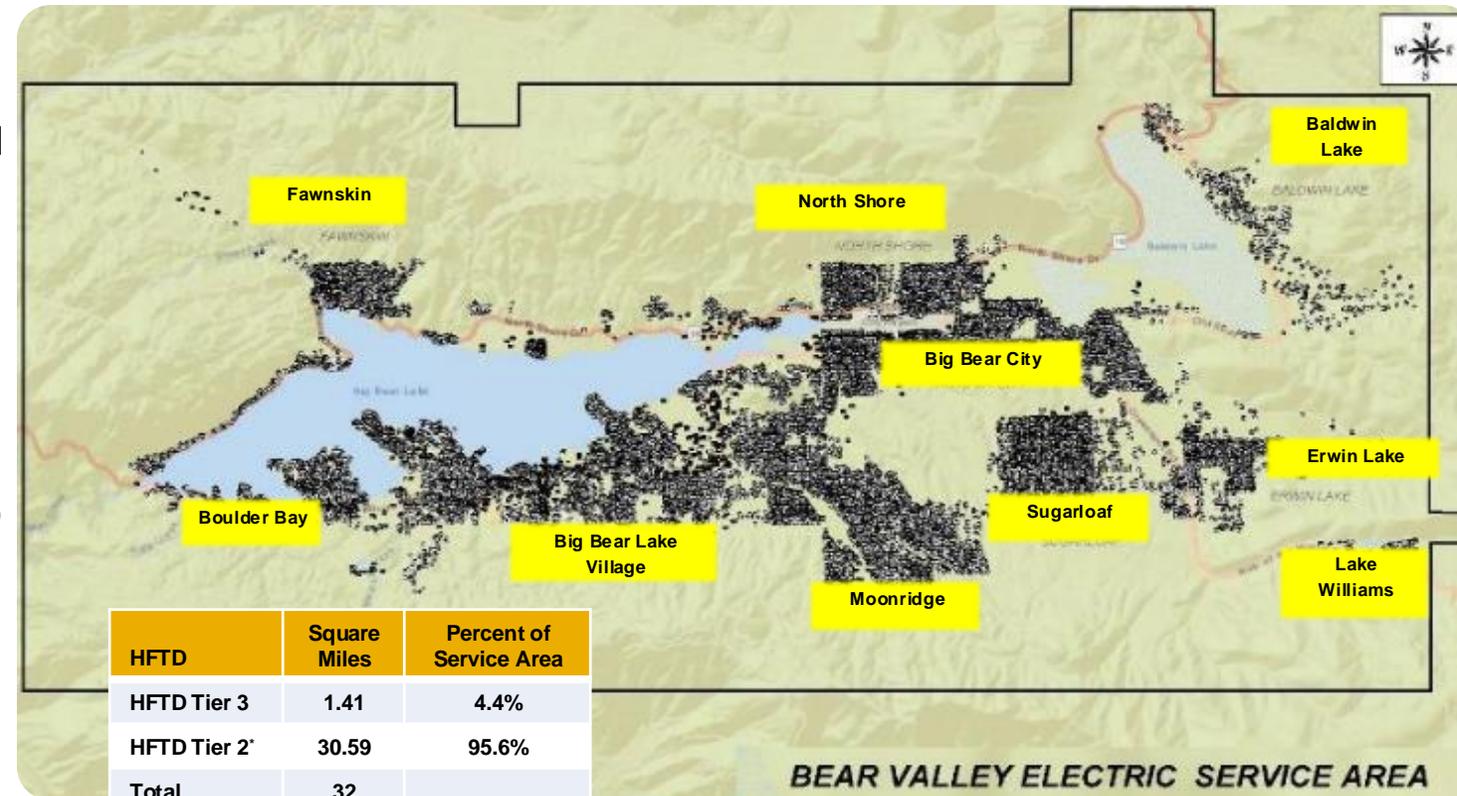
Customer Meters: 24,822 total [Residential: 23,331; Commercial: 1,491; CARE: 1,775; AFN: 716; MBL: 163].

As of July 25, 2024, BVES's safety record:

- **No ignitions in over 20 years.**
- **No BVES caused wildfires ever.**

Electrical System:

- Transmission – Does not own or operate circuits 66 kV or greater
- Sub-transmission (34.5 kV)
 - 9.8 circuit miles bare overhead (OH) conductor (32.9%)
 - 19.1 circuit miles covered OH conductor (64.1%)
 - 0.9 circuit miles underground (UG) (3.0%)
- Distribution (4 kV)
 - 143.1 circuit miles bare OH conductor (60.8%)
 - 38.9 circuit miles covered OH conductor (16.6%)
 - 53.2 circuit miles UG (22.6%)
- Substations: 13
- Supply Lines: 39 MW total
- Bear Valley Power Plant: 8.4 MW
- Service Area Renewable Generation: 6.16 MW
- Load is winter & evening peaking
 - Historical peak: 46 MW (2021)
 - Load delivered: 138,272 MWh (2023)
 - 41.3% qualified to Renewable Portfolio Standards



*1.78 sq. mi. (5.6%) is Big Bear Lake (no assets).



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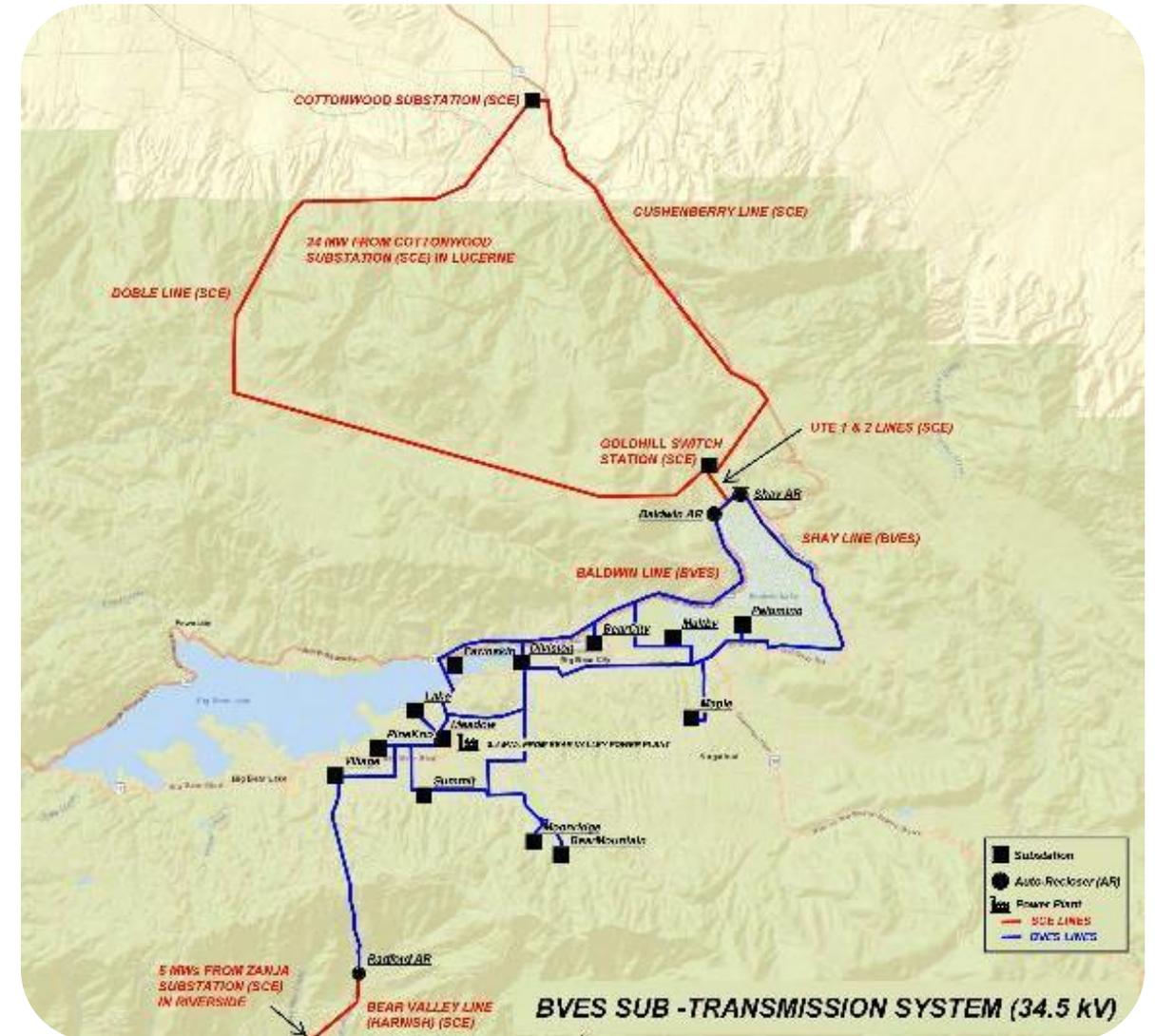
Section 1: 2023 PSPS Season Review

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Power Supplies

- Electric power is provided to the BVES service area via Southern California Edison (SCE) owned and operated lines that come up the mountain and supplied at 34.5 kV.
 - Transmission and Access fee to SCE.
- BVES system is located entirely within the balancing area under the control of the California Independent System Operator (CAISO).
- Bear Valley Power Plant (8.4 MW) available for peak hours and emergencies.
- BVES in the planning and development phase to construct:
 - **Solar Energy Generating Facility:** 5 MW AC Bi-Facial single axis tracker system.
 - **Battery Energy Storage System (BESS):** 5 MW | 20 MWh Lithium Ion Phosphate (LFP).



Wildfire Mitigation Funding

Accountability

- Bear Valley Electric Service, Inc. (BVES) continues to spend on Wildfire Mitigation initiatives in compliance with its approved Wildfire Mitigation Plans (WMP).
 - Confirmed in the results of annual Independent Evaluator audits on BVES's compliance its WMPs each year since the first 2019 WMP.
- BVES is awaiting a decision on its General Rate Case (GRC) application filed on August 30, 2022, which will adopt wildfire mitigation funding for the years 2023 through 2026 and allow BVES to recovers costs incurred between 2019 and 2022.

Expenditures Already Made by BVES to Reduce Ignition and PSPS Risk and to Comply with Approved WMPs (Recovery Pending CPUC Approval)

	2019-2022	2023
Capital Improvement Projects	\$28.4 million	\$21.9 million
Fire Hazard Prevention Memorandum Account (Vegetation Management)	\$9.3 million	\$2.6 million
Wildfire Mitigation Plan Memorandum Account	\$1.5 million	\$0.6 million
Fire Risk Mitigation Memorandum Account	\$2.9 million	\$0.7 million

2023 PSPS Performance & Execution

Overview Comparison of Prior Years



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Years	PSPS Event Count	Counties Impacted	Customers Notified (#)	Missed Notifications (#)	Outage Duration (Average)	Restoration Time (Approx.)
2019-2023	0	N/A	N/A	N/A	N/A	N/A

BVES has not executed a PSPS activation though remains prepared for potential fire behavior weather.

2023 Lessons Learned

Socialized Insights



Improved grid hardening:

- Utilities are replacing bare power lines with covered conductor and undergrounding power lines in high-risk areas.
- This helps reduce the risk of equipment failures that could spark wildfires during extreme weather.



Enhanced weather monitoring and forecasting:

- Utilities are using advanced weather stations, fire modelling, and collaboration with research labs to better predict and respond to severe fire weather conditions.
- This allows them to make more targeted and informed PSPS decisions. AI is becoming increasingly important in the prediction.



Increased customer support:

- Utilities are providing more resources to help customers prepare for and cope with PSPS events, such as portable battery programs, generator rebates, and community resource centers.
- This helps mitigate the impacts on customers and increase overall satisfaction post event.



Improved communication and coordination:

- Utilities are enhancing their notification systems and collaborating more closely with local agencies, tribes, and critical customers to ensure timely and effective communication before, during, and after PSPS events.

2023 Lessons Learned

Joint IOU Commonalities



Communication and Notification Improvements

Ensuring timely and accurate dissemination of information across various platforms and to Public Safety Partners is crucial.

- Nearly all utilities report having a percentage of communication undelivered with uninformative responses from best-in-class providers.

Addressing concerns regarding excessive or inaccurate notifications to customers and Public Safety Partners.

- Customers report being frustrated with too much communication.

Clarifying the necessity and compliance with CPUC guidance for overnight notifications during PSPS events.

- Some utilities reported not fully understanding this requirement and need updated guidance.

Addressing gaps in customer data impacting notifications and reporting.

Develop strategies to ensure customers are enrolled in PSPS alerts and validating customer-to-circuit mapping for proper assignment.

Solutions Reported:

Utilities are reporting that there is an awareness to covering multiple avenues per customer to ensure maximized communication effort.

Solutions Discussed:

Allow options to select number of updates received in addition to ensure the communication is accurate and efficient.

Refine roles and procedural job descriptions with additional redundancies and coverage.

Operational Coordination and Standardization

Standardizing naming conventions and processes across different operational aspects to minimize confusion and errors.

- During tabletop exercises, participants reported confusion in the naming convention.

Ensure simple naming conventions when disseminating information. Consider colors/numbers and clear/concise naming. Consider using an unfamiliar audience to see if they can understand the convention.

Situational Awareness and Training

Providing further training and standardization to ensure all personnel are proficient in hosting operational briefings and calls.

- During tabletop exercises, participants reported confusion in the naming convention.

Adopt a standard template and memo for communication per topic and customer group. Conduct position-specific training to improve situational awareness, especially regarding scope changes during PSPS events.

2023 Lessons Learned

Socialized Insights



Public Safety Partner Coordination:

- Collectively reported that utilities made strides to enhance collaboration with Public Safety Partners

Infrastructure and Facility Readiness:

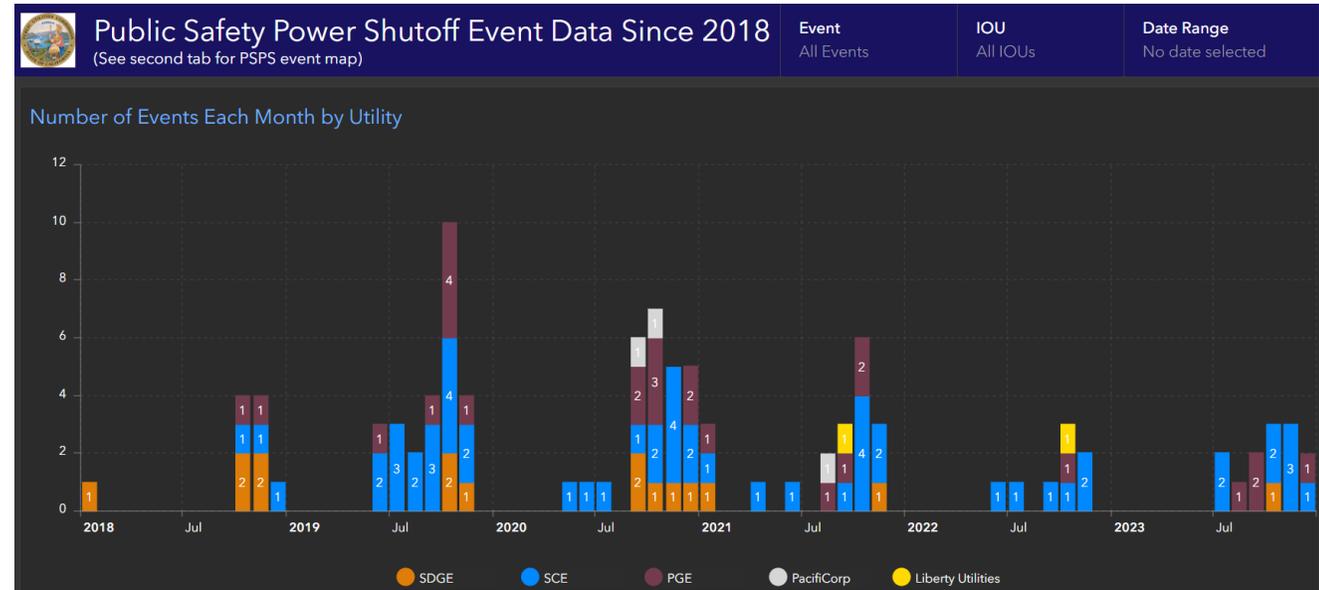
- Focused effort to ensure critical facilities had support and backup power options during PSPS events

Customer Impact Mitigation:

- Reduce customer burden for the access and functional needs (AFN) population and disadvantaged communities (DACs), through improved notification systems and Community Resource Centers (CRCs)
- Additional CRC amenities considered with a focus on additional charging units

Adaptive Action and Processes:

- Utilities note revisions to PSPS procedures to address recurring issues, with a primary objective to reduce impact scale and scope



Source: California Public Utilities Commission

Socialize Lessons Learned:

- Post-event reports and public briefings should detail and highlight key learnings
- Avenues for synergistic approaches for community engagement
- Better predictive tools for decision-making and methods
- Considerations of backup power and microgrid developments to mitigate PSPS

2023 PSPS Survey Results



Category	2022	2023	Takeaways
Overall Satisfaction	75%	80%	Slight improvement, targeted outreach effective
Communication Effectiveness	70%	78%	Enhanced notification systems well-received
Notification Timeliness	65%	72%	Improvements in early warnings appreciated
Support Services	68%	74%	Better support for AFN and critical customers
CRC/CCV Usage Satisfaction	NA	70%	Introduction of CRCs and transport services positively received

Complaint	2022	2023	Details
Excessive Notifications	25%	20%	Customers prefer fewer, more informative updates
Inadequate Advance Notice	30%	22%	More timely notifications still needed
Lack of AFN Support	28%	15%	Significant improvement, but more efforts needed
Accessibility of CRC	NA	18%	Issues with transportation and physical address



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Section 2: 2024 Planning & Preparation

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Planning and Preparation for 2024



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BVES Goals and Improvements

PSPS Risk Reduction

- Continue to reduce risk of PSPS activations wherever possible
- If subject to a PSPS event, minimize the scope, scale, and duration of impact on affected customers and communities
- Segmentation of lines – already established
- Messaging to incorporate individual planning and preparation
- Inventory Community Resource Center equipment and material

Community Awareness & Outreach

- Leveraging traditional and digital channels for coordination and operational schema
- Focus outreach to individuals within the AFN population (no DACs identified)
- Enhancing self-identification process
- PSPS surveys indicate positive feedback for awareness updates
- Review of California utility PSPS events for applied lessons learned

BVES and Public Safety Partner Training

- Enhancements for training PSPS response teams
- Elevated exercise complexity with interactive elements to simulate real-world scenarios
- Role-specific training and action cards for individual practice and training
- Backup training to bolster operational readiness and response capability

Improvements to Plans

- Updates to:
 - key stakeholder contact information
 - critical facility/infrastructure list and points of contact
 - Telecommunications Companies points of contact
 - PSPS procedures with new forecasting methodology
- AFN self-identification and reach out process and overlap with Medical Baseline (MBL) customers
- Updated Situation Manual for routine PSPS exercise practices and review



Grid Hardening and Mitigation Measures Planned/Completed in 2024 vs 2023 statistics

On target
On target
Off target
Off target

***2023 targets missed due to delays in obtaining USFS permit.**
****Missed Q2 2024 target but on track to achieve annual target.**

Initiative	Target Units	2023 Actuals	2024 Target	2024 Q1 + Q2 Actuals
Install Fault Indicators (FIs) Project	# of FIs Automated	NA	30	9**
Covered Conductor Project	Circuit Miles	20.7	12.9	5.8
Radford Line Replacement Project	Circuit Miles	0*	2.7	0.8
	# of Fire Resistant Poles Installed	0*	70	3
Pole Loading Project (Under Covered Conductor Project)	# of Poles Replaced	309	200	166
	# of Poles Assessed	349	260	123
Tree Attachment Removal Program	# of Tree Attachments Removed	114	100	84
Evacuation Route Hardening Project	# of Poles Hardened with Wire Mesh Wrap	909	500	1,012
Substation Automation Project	# of Substations Connected to SCADA	3	3	1
Switch and Field Device Automation	# of switches connected to SCADA	13	10	2**
Capacitor Bank Upgrade Project	# of units replaced & connected to SCADA	6	6	1
Fuse TripSaver Automation	# of TripSavers connected to SCADA	10	50	11**
Achieving Line Clearances from Vegetation	Circuit Miles	72.0	72.0	41.1
Removal of Trees with Strike Potential on Lines	# of Trees Removed	168	88	63

Grid Hardening and Mitigation Measures

WMP Initiative Highlights



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Grid Hardening Efforts

- Covered Conductor Program replaces approximately 12.9 circuit miles per year of bare conductors with covered conductors. Results as of June 30, 2024:
 - Sub-transmission system: 32.9% Bare Conductors 64.1% Covered Conductors 3.0% Underground
 - Distribution system: 60.8% Bare Conductors 16.6% Covered Conductors 22.6% Underground
- Radford Line Replacement Project replaces a 2.79 circuit mile bare wire sub-transmission line and 79 wood poles, with high-performance covered conductor and ductile iron poles. Circuit is located in the High Fire Threat District Tier 3 (“extreme fire risk”).
 - USFS permit cleared and construction is in progress. 55 poles have been installed and 1.75 circuit miles of covered wire installed. ECD December 31, 2024.
- BVES has already installed sectionalizing switches with efforts now focused on automating and connecting those switches to the SCADA system.
- Grid Hardening efforts reduce the likelihood of PSPS by mitigating the threat posed by “blow-ins.”
 - By the end of 2026 (possibly 2025), we will have no bare conductors on our sub-transmission system significantly reducing PSPS risk.



Covered Wire



Priority Wire
394.5 AAAC



Southwire
336.4 ACSR



Vegetation Management

- Implemented increased radial clearances on all power lines and “blue-sky” requirement on sub-transmission lines.
- Since 2018, BVES has removed 830 hazard trees and trimmed 37,772 trees.
- Established routine of conducting annual LiDAR, UAV Photography & Videography, UAV Thermography, and 3rd Party Independent Patrols of the entire system. Also, using satellite imagery to aid in monitoring vegetation. These are in addition to GO-165 Detailed & Patrol Inspections and conducting 850 intrusive wood pole inspections per year.

Vegetation density in right of ways has been significantly reduced (as measured by LiDAR):

2020: 25.4%
2022: 20.2%
2023: 15.4%



Microgrid

- Solar/Battery Facility: BVES’ recently filed an application to develop a 5 MW AC/6.10 MW DC solar photovoltaic project and 5 MW/20 MWh battery energy storage system with a minimum energy capacity of 20 MWh and a minimum power capacity of 5 MW within BVES’ service territory.
 - Leveraging solar production with the power plant and battery, Bear Valley would be able to handle loss of SCE supply lines due to PSPS and eliminate the necessity for rolling blackouts.
 - Furthermore, the battery would obviate the necessity for conducting a black start on the power plant in the event of an SCE supply line loss. In fact, with the battery in place, the power plant could be swiftly placed into service, carrying load within minutes.



Grid Hardening and Mitigation Measures

Notable Updates Reducing PSPS Risk



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FPI Model Enhancement & Implementation

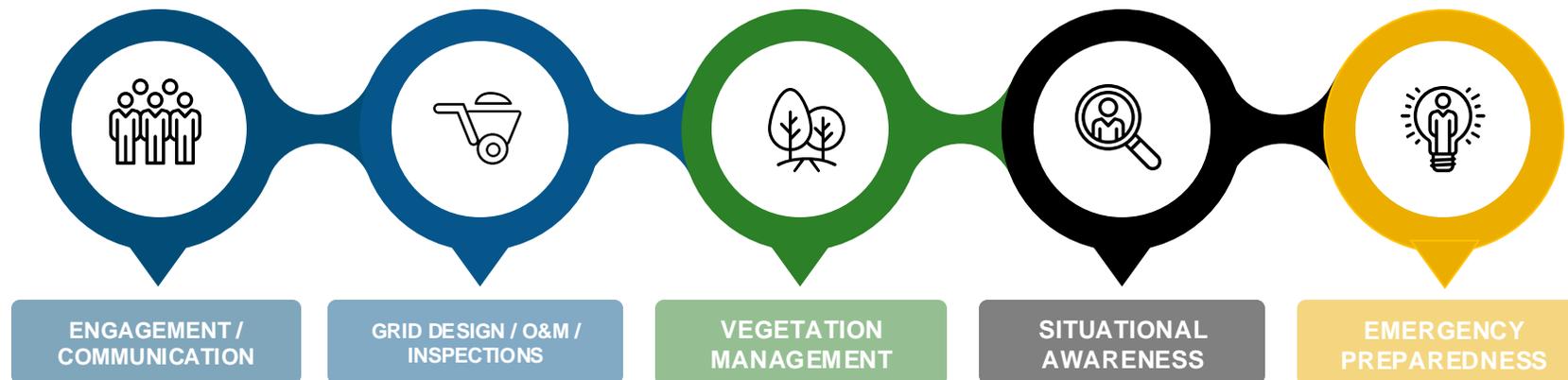
- Developed and tailored to BVES's service territory
- Daily use in operations, wildfire potential assessment, and with PSPS decision-making

Continued Improvement Areas

- QA/QC process updated for asset inspections
- Focus on Technology and Risk-Based Decision Making
- Further investigation regarding fast trip settings

Situational Awareness & Infrastructure Screening

- AiDash – satellite imagery for rapid assessment / prioritization of vegetation management
- iSIU Pilot Program – installing camera systems on poles for continuous monitoring in collaboration with Green Grid, Inc.



Meteorology/Weather for 2024 PSPS



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BVES typically has low PSPS forecast projections, and this is expected to continue during La Niña

- May lead to drier conditions in California, potentially increasing wildfire risk
- Expected to persist through winter 2024-2025
- Predicting a below-average precipitation pattern, exacerbating dry conditions

Meteorological Trends

- Increased likelihood of heatwaves
- Lower than average rainfall is expected
- Resulting high fuel density



Improvements to Data Accuracy in Post Event Reporting



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0

PSPS Events

0

Filed Post Event Reports

Notifications/ Communications



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- **Public Awareness and Outreach:**

- Stakeholder Leadership PSPS briefing pre-fire season
 - Coordination with city and county officials, community-based organizations (CBOs), and other local entities to enhance public education on PSPS
- Community PSPS brief and tabletop and full-scale functional exercises for PSPS scenario planning
 - Emphasis on providing early notifications and regular updates to keep customers informed throughout the event
- Media advertising campaign (news media, website, social media, bill inserts)

- **Targeted Communication Efforts:**

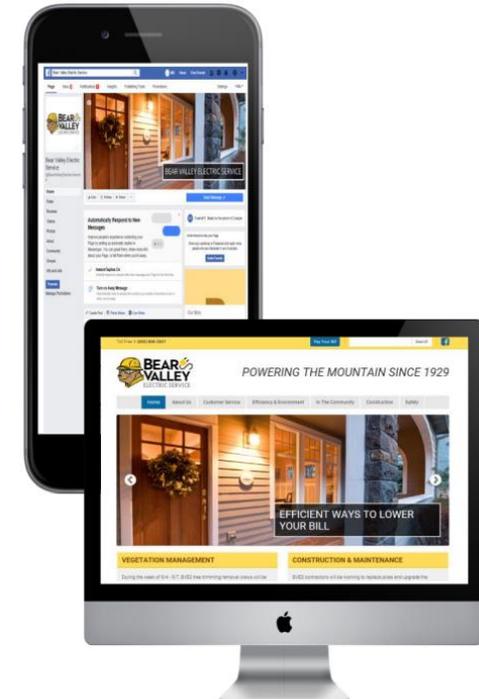
- Notifications dispelled at various points of a PSPS event (e.g., 72-hour, 48-hour, and 24-hour mark)
- Language inclusivity for information provided in English and Spanish with no tribal communities within the service area

- **2023 Improvements:**

- Notification scripts developed, practiced, and refined for clarity per customer group
- Enhanced real-time updates for website and social media dissemination
- Automation in notification for system capacity backup
- Use of OMS alerts, two-way text communications, email, website updates, and social media to notify customers
- Specific steps to ensure MBL customers are notified and reached out to through multiple methods, including site visits if necessary

- **CRC and Community Crew Vehicles (CCV) Updates:**

- BVES operates a centrally located CRC at its office in Big Bear Lake, equipped with essential services such as device charging, Wi-Fi, water, and ADA accessible restrooms
 - Pre-season inventory checklist and training implemented and tested
- Continuous improvement based on feedback and lessons learned from other utilities, as BVES did not set up CRCs last year due to no PSPS events
- BVES does not have a CCV program, but made arrangements with local transit authorities for PSPS support when available





Battery Backup Programs

- BVES does not have a formal battery backup program
- Discussions on need based on critical infrastructure were carried out during the PSPS exercises in April and May
- **Future considerations**
 - Formal program will be routinely investigated if projections revealing worsening potential for customer impact
 - BVES is monitoring programs such as Southern California Edison's Critical Care Backup Battery Program for utilization results and feedback

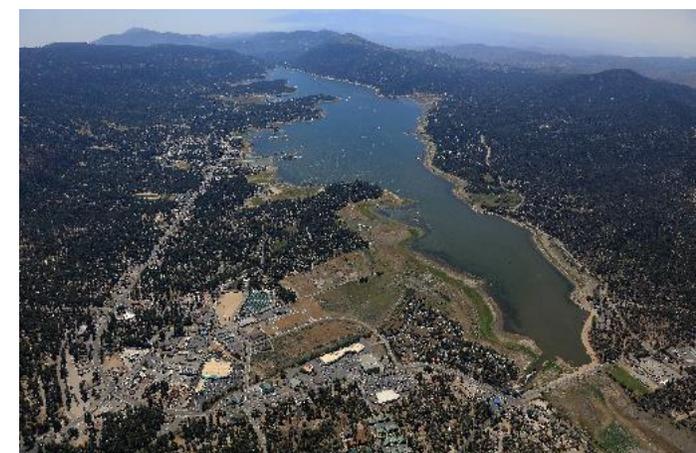




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Section 3: Forecasting

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Forecasting



Risk Model Enhancement

- DIREXYON advanced fire risk modeling
- Key areas for enhancement:
 - *Equipment ignition likelihood;*
 - *Contact from vegetation/object ignition likelihood;*
 - *Wildfire spread likelihood;*
 - *Wildfire hazard and exposure intensity;*
 - *Wildfire vulnerability;*
 - *PSPS exposure potential; and*
 - *Vulnerability of community to PSPS*
- Full operation expected by Q4 2024
- Focus on integrating decision-making policies and a comprehensive evaluation of network conditions

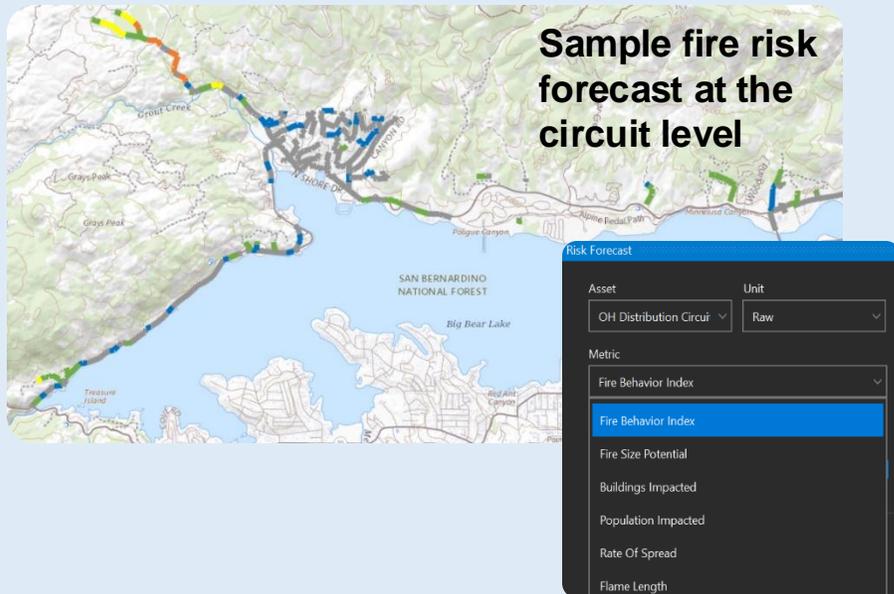
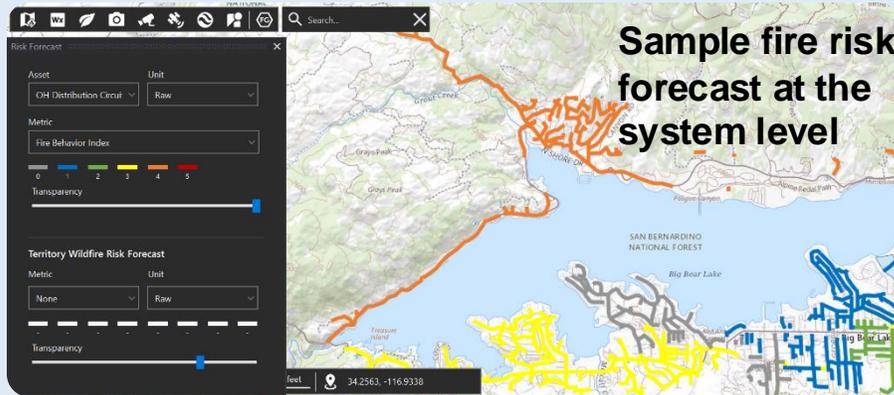
FPI Categories:

- Very Low and Low: Automatic reclosers and protective switches; no special patrols.
- Moderate: Manual switches, patrolling required, review of medical baseline and AFN customer lists.
- High: Manual switches, patrolling required, notification and coordination with local agencies, potential EOC activation.
- Very High/Extreme: Comprehensive response including manual switches, patrolling, customer and agency notifications, EOC activation, and PSPS initiation if conditions warrant.

- BVES utilizes a customized Fire Potential Index (FPI) model developed by Technosylva to quantify fire risk across its service area.
 - Various parameters including fuel, terrain, and weather conditions to categorize fire risk levels from Very Low to Extreme.
- The FPI model is integral to BVES's operational decision-making process, especially regarding sub-transmission and distribution system.
 - **Daily Monitoring**: The Wildfire Mitigation & Safety Engineer reviews WFA-E fire risk forecasts and FPI data daily to inform operational decisions.

Forecasting

Wildfire Analyst Enterprise (WFA-E)



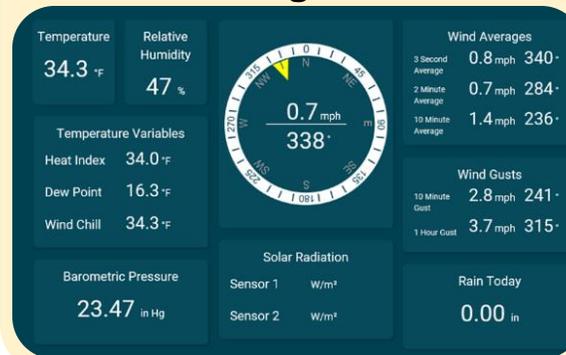
BVES Weather Stations



Columbia Orion Weather Station

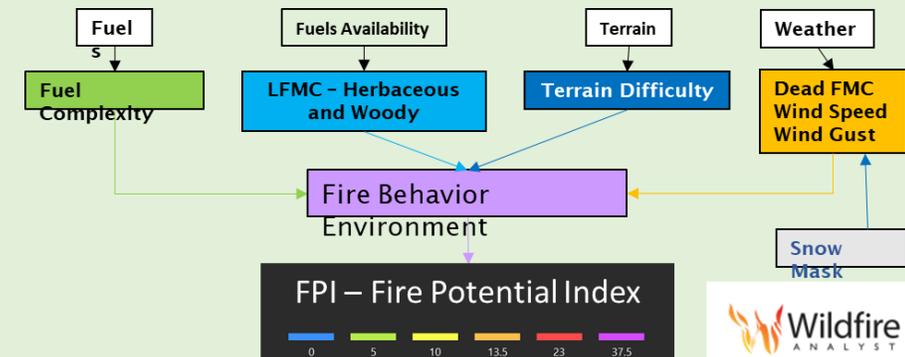
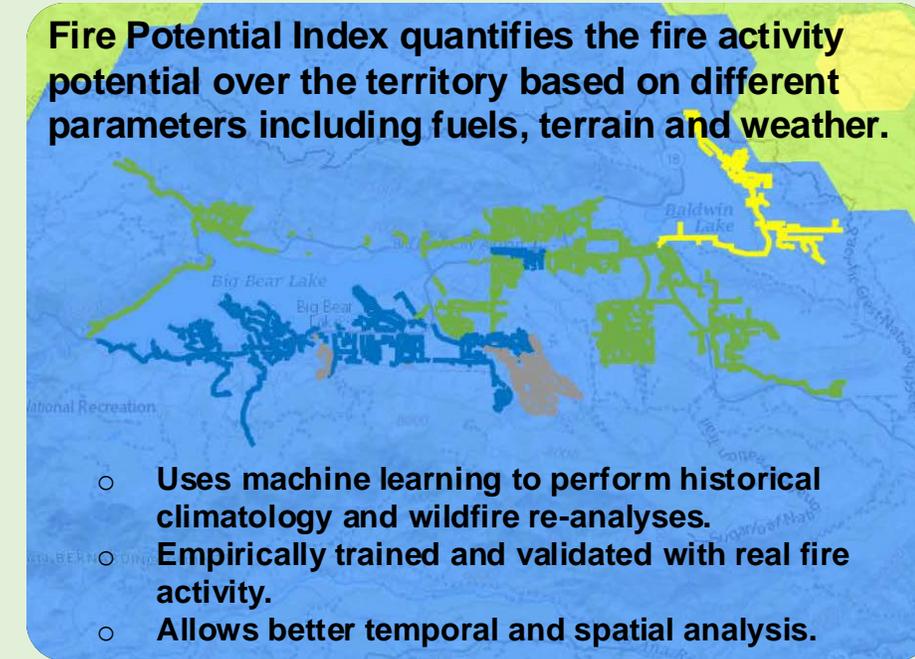


Contracted weather forecasting services



Fire Potential Index (FPI)

Fire Potential Index quantifies the fire activity potential over the territory based on different parameters including fuels, terrain and weather.





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Section 4: PSPS De-energization Decision Making

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**

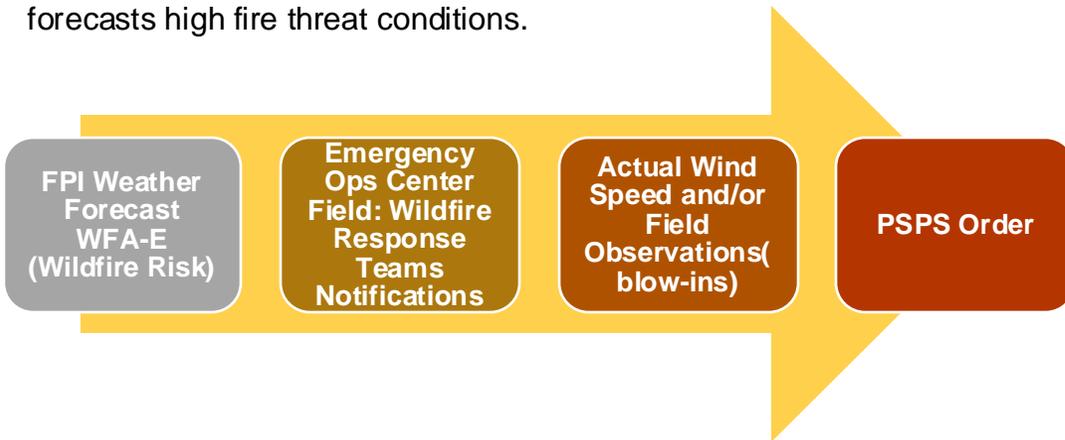


PSPS De-energization Decision Making



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“Extreme fire weather conditions” are deemed to be forecasted or exist when the FPI is High, Very High, or Extreme, high winds (45 mph or greater) are forecasted or measured, and the BVES meteorologist forecasts high fire threat conditions.



In determining whether to invoke PSPS, BVES staff considers factors driving “extreme fire weather” and dangerous threat conditions including, but not limited to, the following:

- Design, strength, and other characteristics of distribution overhead facilities
- Vegetation density
- FPI
- High winds
- Humidity
- National Weather Service advisories
- Local weather forecasts and advisories
- BVES meteorologist’s forecast
- Observed conditions in the field
- Information from BVES-installed weather stations
- Real-time information from trained personnel positioned in high-risk areas
- Input from state and local authorities and Emergency Management Personnel
- Fire threat to electric infrastructure
- Public Safety Risk

Operational actions, PSPS preparatory actions, and PSPS activation are dependent on FPI value and actual field conditions.

FPI Category	Very Low and Low	Moderate	High	Very High/Extreme
Auto-Reclosers and Protective Switches with Reclosing Capability	Automatic ¹	Manual	Manual (Non-Automatic)	Manual (Non-Automatic)
Fuse TripSavers	Automatic ¹	Automatic ¹	Manual (Non-Automatic)	Manual (Non-Automatic)
Designate which circuits are under: (1) Consideration (2) In Scope	No	No	Yes	Yes
Deploy Wildfire Risk Team(s) to circuits “In Scope”.	No	No	Yes ⁴	Yes
Cease using any spark producing tools and equipment for circuits under consideration or in scope.	No	No	Yes	Yes
Cease vegetation management work for circuits under consideration or in scope.	No	No	Yes ⁵	Yes
Cease “high risk” energized line work for circuits under consideration or in scope. ⁶	No	No	Yes	Yes
Forward to Field Operations updated list of medical baseline customers and impacts access and functional needs population.	No	Yes	Yes	Yes
Review Local Government, Agencies, First Responders, Critical Infrastructure, and Stakeholder notification lists and procedures.	No	Yes	Yes	Yes

FPI Category	Very Low and Low	Moderate	High	Very High/Extreme
Review customer notification procedures.	No	Yes	Yes	Yes
Activate EOC.	No	No	Yes ⁷	Yes
Initiate Local Government, Agencies, First Responders, Critical Infrastructure, and Stakeholder notification in accordance with BVES PSPS Procedures.	No	No	Yes ⁸	Yes ⁸
Initiate customer notification in accordance with BVES PSPS Procedures.	No	No	Yes ⁸	Yes ⁸
Prepare Bear Valley Power Plant for sustained operations.	No	No	Yes	Yes
Conduct switching operations to minimize impact of potential PSPS activity	No	No	Yes	Yes
Activate first responder, local government and agency, customer and community, and stakeholders PSPS communications plan.	No	No	Yes ⁹	Yes ⁹
Activate Community Resource Centers.	No	No	Yes ¹⁰	Yes
Invoke Public Safety Power Shutoff.	No	No	Yes ¹¹	Yes ¹¹

FPI categories	FPI value	FPI percentile
Very Low	< 5	<60
Low	5-10	60-80
Moderate	10-13.5	80-85
High	13.5-23	85-95
Very High	23-37.5	95-99
Extreme	> 37.5	>99

PSPS de-energization of circuits is a measure of last resort invoked based on actual extreme fire threat conditions in the field.

PSPS De-energization Decision Making



Example Scenario from FSX

FPI Categories	FPI Value	FPI Percentile
Very Low	< 5	< 60
Low	5-10	60-80
Moderate	10-13.5	80-85
High	13.5-23	85-95
Very High	23-37.5	95-99
Extreme	> 37.5	> 99

Date	Fire Risk	FPI Percentile	FPI Value	Required Actions
Wed. 9/4	Moderate	80-85	10-13.5	Monitor conditions, prepare resources, communicate with stakeholders.
Thurs. 9/5	Moderate	80-85	10-13.5	Monitor conditions, prepare resources, communicate with stakeholders.
Fri. 9/6	High	85-95	13.5-23	Activate pre-PSPS protocols, conduct internal briefings, initiate public awareness campaigns.
Sat. 9/7	Very High	95-99	23-37.5	Implement PSPS watch, pre-stage field crews, notify public safety partners, prepare for possible de-energization.
Sun. 9/8	Extreme	>99	>37.5	Activate PSPS protocols, de-energize affected circuits, deploy response teams, communicate with all stakeholders.
Mon. 9/9	Extreme	>99	>37.5	Maintain PSPS protocols, continue de-energization, coordinate with SCE and emergency services, ensure public safety.
Tues. 9/10	High	85-95	13.5-23	Monitor conditions closely, prepare for re-energization, communicate re-energization plans with stakeholders.

EXAMPLE



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Section 5: Restoration

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Restoration Technology Utilization

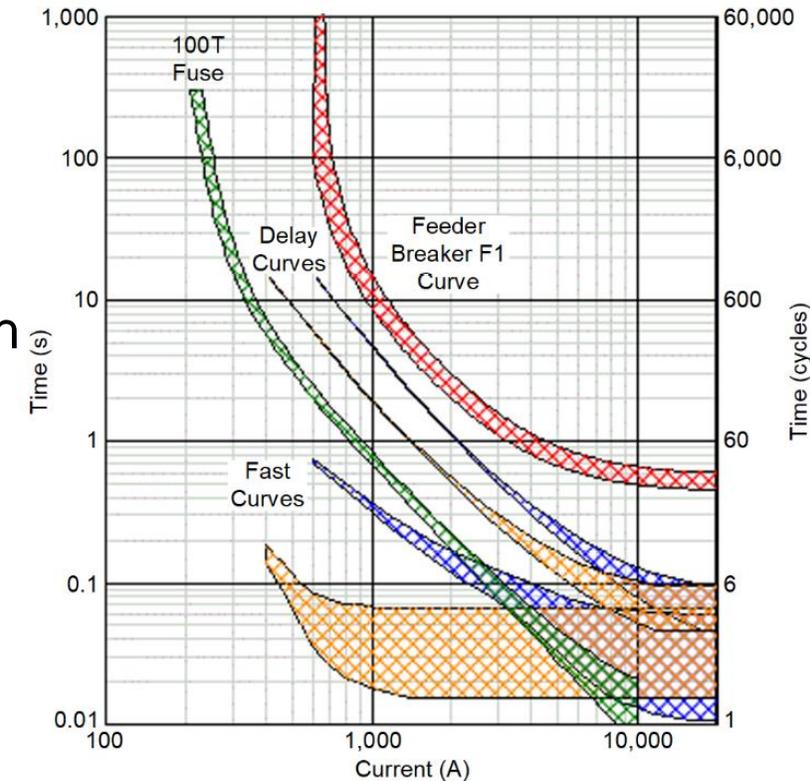
- Timing is already maximized through ability to survey the service area in under a few hours
- BVES simulated delays in restoration timelines in its full-scale PSPS exercise
 - Developing potential strategies to minimize the number of affected customers during extended restoration periods
- Grid hardening and enhanced operational procedures can optimize restoration processes and decrease downtime
 - E.g., Evacuation route hardening
 - Provides quicker access for down-hill support, fueling, materials share, and other dispatch mutual aid resources requiring adequate drive time and mountainous terrain access capabilities

EPSS/Fast Trip/ Fast Curve Settings



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- BVES operates its protective devices on the fast curve trip settings (provided by manufacture) all the time.
 - BVES has operated in this mode since 1995.
 - Ensures reliability of the system due to protective coordination with SCE power supplies.
- BVES has discussed fast trip programs with other IOUs to better understand their approach on this issue.
- BVES has engaged an expert consultant firm to evaluate protective settings policy and provide recommendations to improve settings to reduce ignition probability.



2022 SAIDI Major Events Excluded (minutes)

National Average	California Average	CA IOU Average	BVES
145.93	145.23	148.54	118.99



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Section 6: Customer Support & Resources

**BVES 2024 PSPS Post-Season/ Pre-Season
Workshop**



Medical Baseline / Access and Functional Needs



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716 AFN customers
163 MBL customers
as of July 2024

• MBL/AFN Program Improvements

- Conducted targeted outreach to increase self-verification options
 - All new customers are queried about MBL and AFN classification
 - All customer calls include MBL/AFN inquiry
 - Mailer sent to all customers regarding AFN
 - Survey results captured and applied to messaging notes and notifications
- Streamlined enrollment through series of outreach methods with available customer service assistance
 - Enhanced training for staff on the needs of AFN customers
- Updated tracking mechanisms for MBL/AFN customer data

• Communication and Expansion Minimization

- Utilization of multiple communication channels including mail, email, and social media
- Planned healthcare coordination to alert local healthcare providers whether their clients may qualify

• Serving AFN Populations

- Self-identification process and set up for customer preference
- Community workshops and informational sessions to educate on the AFN and MBL program
- Enhanced coordination with local agencies and other critical services during PSPS events

• Backup Program

- BVES does not have a backup battery program at this time
 - The CRC will have portable batteries and satellite phones along with areas for outlet charging

Customer Support & Resources

Overview



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Customer Outreach

- Community workshops and informational sessions on PSPS preparedness
- Regular updates via multiple communication channels: mail, email, social media, website

CRC Accessibility & Services

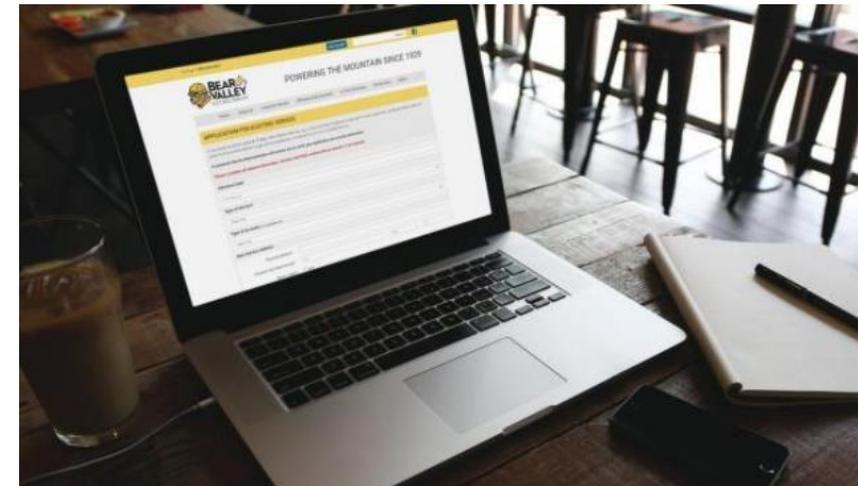
- Equipped with portable batteries, satellite phones, and charging stations
- BVES will also provide snacks, water, device charging, Wi-Fi, and assures the grounds have ADA accessible restrooms
- Limited transportation support with regional transit authority and community mutual aid and support

MBL Program Support & AFN Customer Enrollment

- Targeted outreach and streamlined enrollment
- Enhanced staff training on AFN customer needs
- Collaboration with local agencies and local transit for transportation
- Partnership with healthcare providers for emergency planning

CBO Coordination

- BVES has established working relationships with:
 - Chamber of Commerce
 - DOVES
 - Faith based organizations
 - Local radio and news channels
 - Lodging and transportation
 - BVES Community Resource Center





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Questions

CONTACT

Paul Marconi

President, Treasurer, Secretary, & Safety Committee Chairman

Paul.Marconi@bvesinc.com

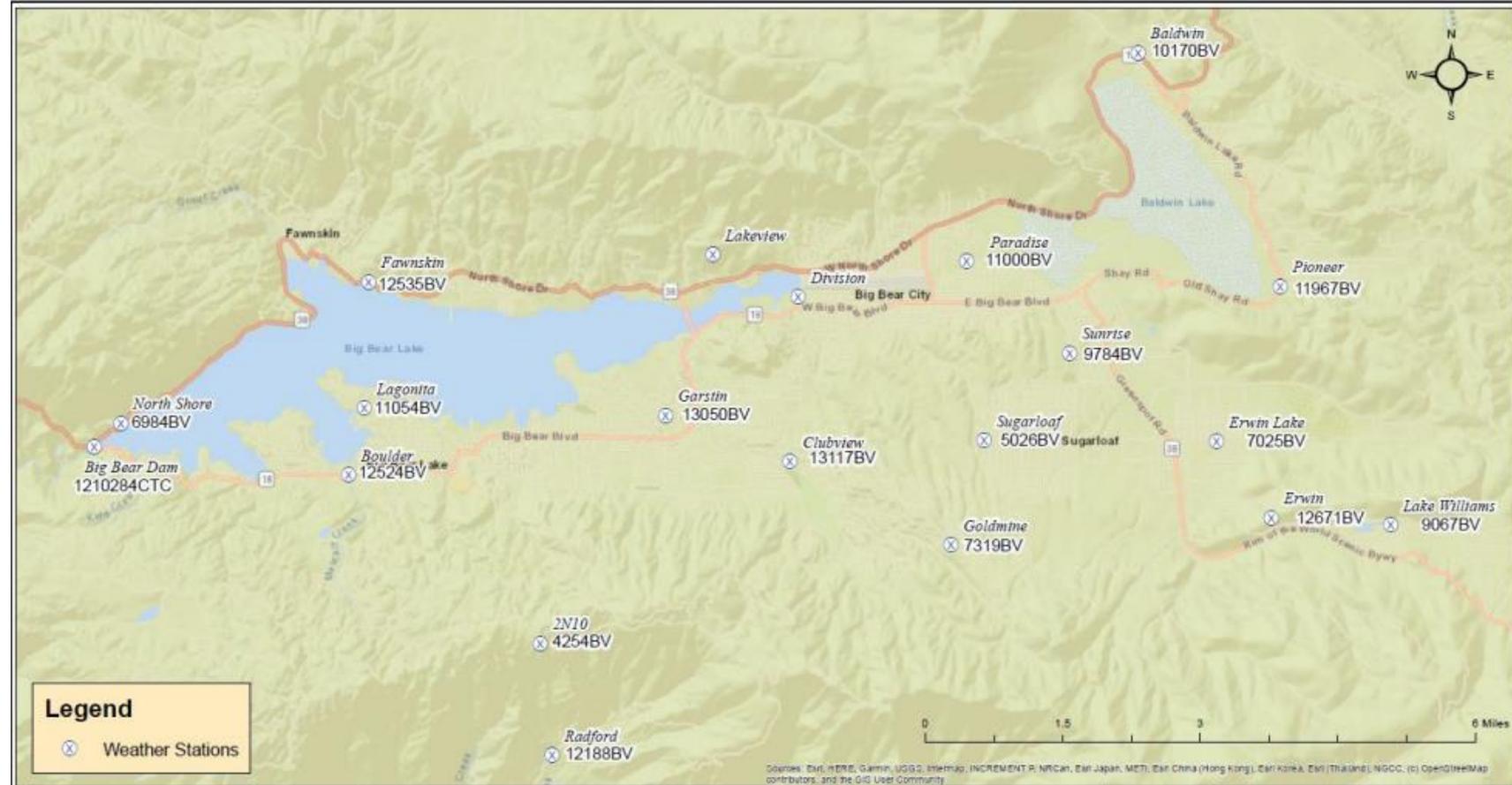
Sean Matlock

Energy Resource Manager & Assistant Corporate Secretary

Sean.Matlock@bvesinc.com



Name	Year	Location
Big Bear Dam	2020	Big Bear Dam
North Shore	2019	North Shore Drive
Fawnskin	2020	Fawnskin Village
Division	2020	Division Substation
Paradise	2019	Paradise Valley
Baldwin	2020	Baldwin Lake Area
Pioneer	2019	Pioneer Town
Erwin Lake	2019	Erwin Lake
Erwin	2019	Erwin Valley
Lake Williams	2019	Lake Williams
Sunrise	2019	Sunrise Road
Sugarloaf	2020	Sugarloaf Mountain Area
Clubview	2019	Clubview Drive
Goldmine	2019	Goldmine Road
Garstin	2019	Garstin Drive
Boulder	2019	Boulder Bay Area
Lagunita	2019	Lagunita Lodge
2N10	2021	Forest Route 2N10
Radford	2020	Radford Camp Road
Lake View	2021	Lake View Point



Weather Station Locations



Morning Public Comments

- Any member of the public may make public comments. Comments shall not exceed two minutes.
- In person comments: your name will be called in the order written down at the comments sign-up table.
- Comments by phone: please unmute your phone, press *1, and record your first and last name slowly and clearly when prompted. You will be placed into a queue in the order that you have identified yourself. When it comes time for you to speak, the operator will announce your name and open the line. You will have two minutes to speak. To withdraw your request, please press *2.

Lunch Break

Pacific Gas & Electric

Pacific Gas and Electric Company

Public Safety Power Shutoff (PSPS) Pre- and Post-Season Workshop

August 8, 2024





Discussion Topics and Presenters

1 Meteorology and PSPS Decision Making Tools

2 Layers of Wildfire Protection

3 Public Safety Power Shutoff

4 Enhanced Powerline Safety Settings

5 Customer Support and Resources

6 Q&A

PG&E SPEAKERS

Mark Quinlan

Senior Vice President, Wildfire and
Emergency Operations

Shawn Holder

Director, Public Safety Power Shutoff

Scott Strenfel

Senior Director, Meteorology
Operations and Fire Science

Tom Smith

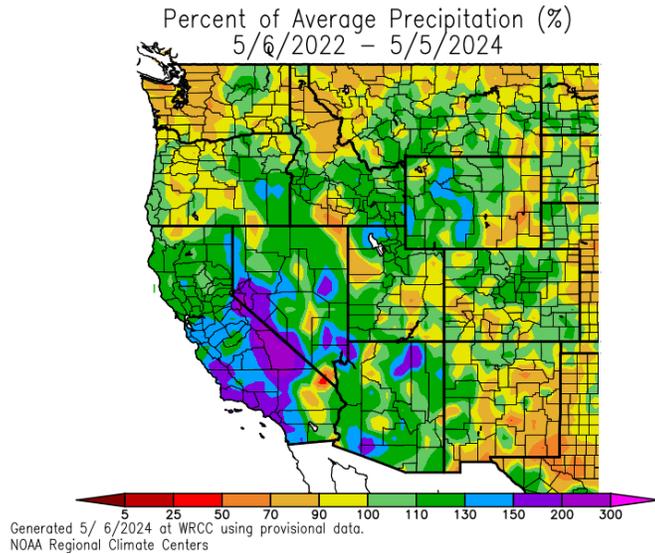
Senior Manager, Customer
Engagement and Strategy

Meteorology and PSPS Decision Making Tools



Drought Conditions and Monsoon Outlook

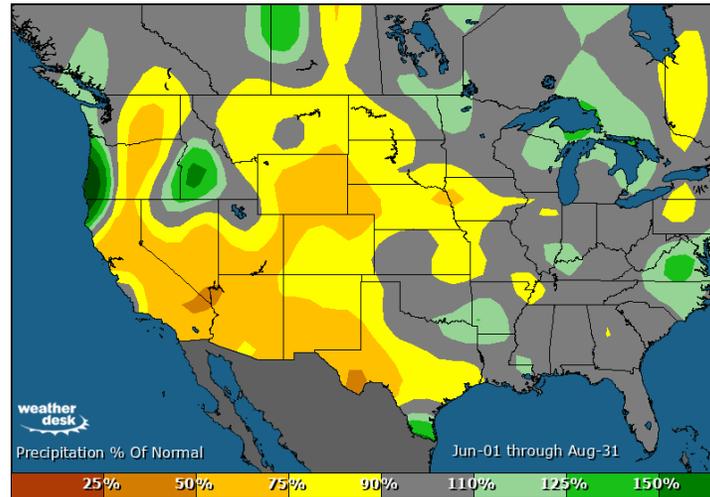
Precipitation 2022-2024



Key Takeaway

Two-year precipitation amounts are **above normal** across California and the Southwest

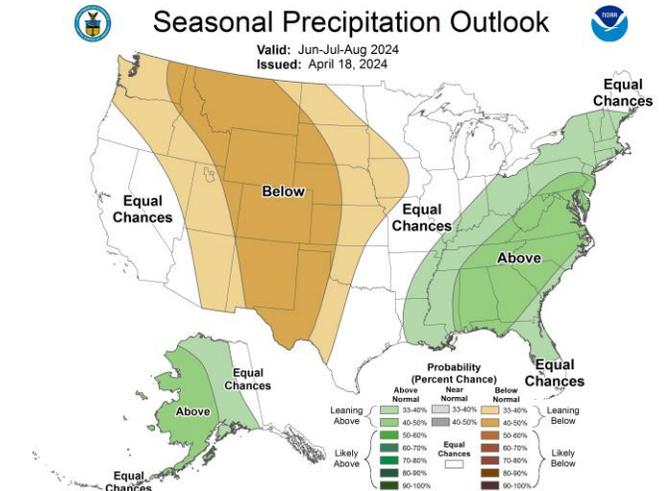
La Nina Summer Rainfall Anomalies



Key Takeaway

La Nina rainfall anomalies for summer favor a **weak monsoon** in the Southwest and fewer lightning events in the Sierras
There is not a strong correlation between weak La Ninas and severity of PSPS events

CPC 2024 Summer Precipitation Outlook



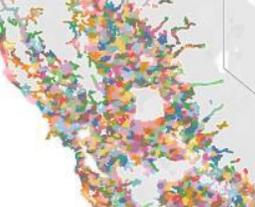
Key Takeaway

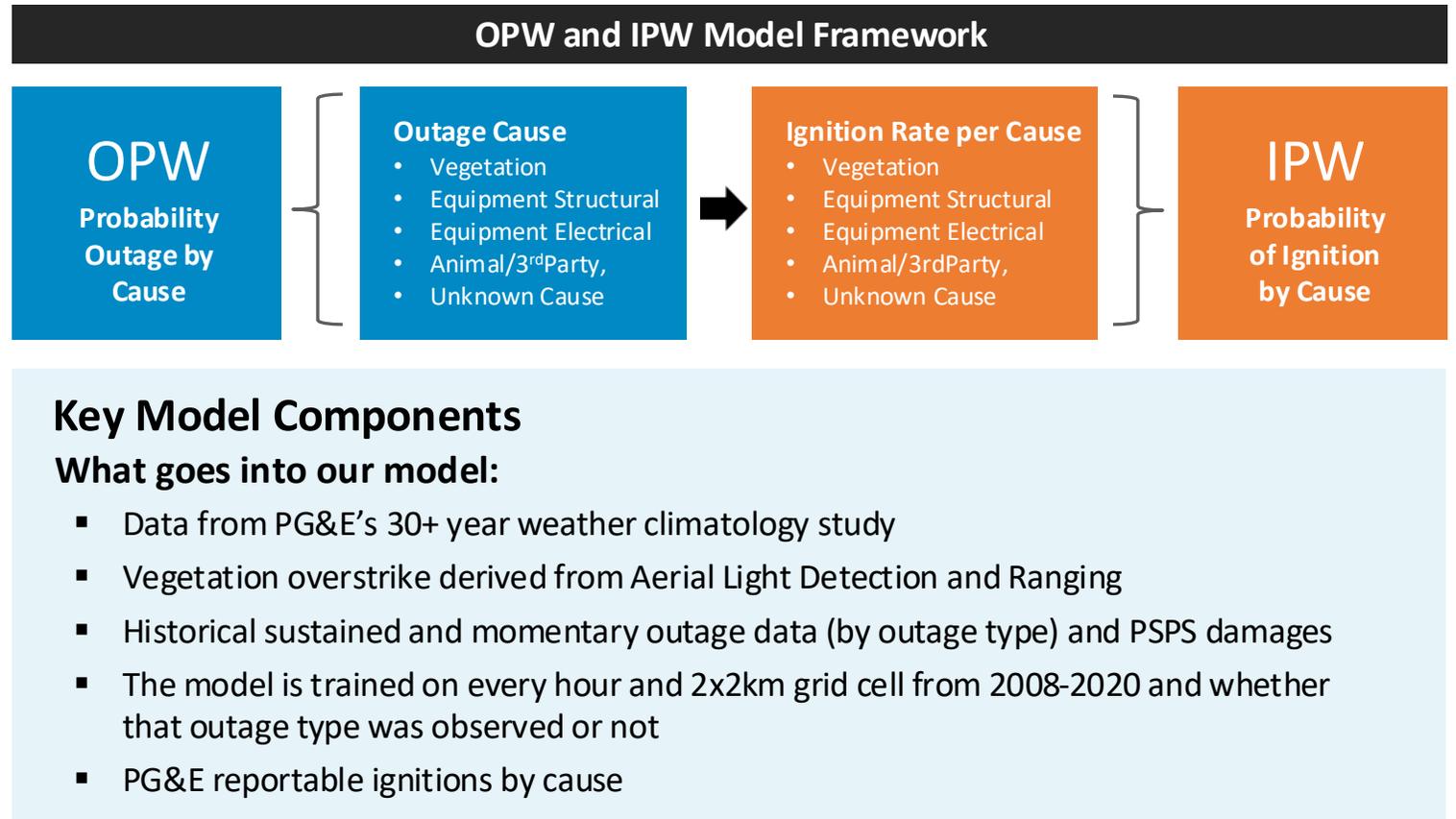
The CPC forecast **does not favor a strong monsoon** this summer

If there is a moderate or strong La Nina, then **odds favor a more active Diablo wind season this fall**; if La Nina is weak, odds favor fewer events, but likely more active than the previous two years

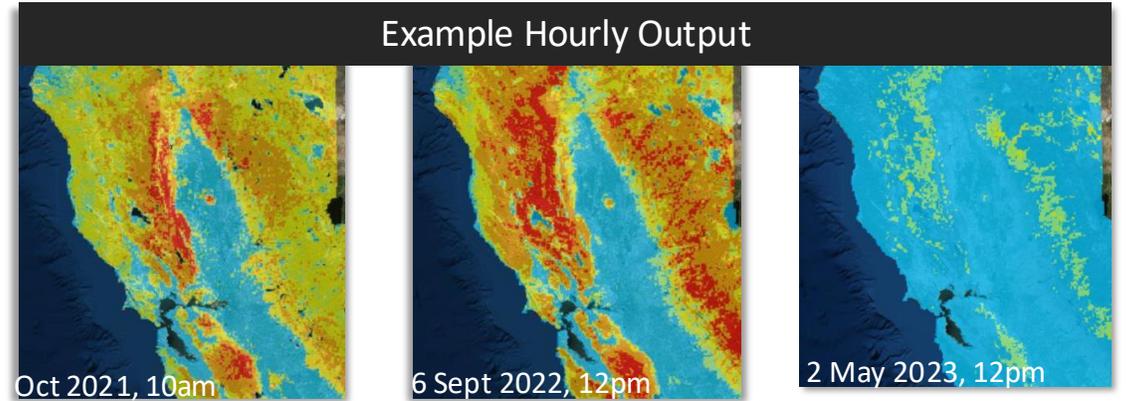
Outage and Ignition Probability Weather Models

Our **Outage Producing Weather (OPW) Model** uses a machine learning model that factors in historical outage data, weather, location and timing to determine outage likelihood, and our **Ignition Probability Weather (IPW) Model** uses 10 years of weather data to provide the likelihood of an outage for specific circuits during past weather events.

PG&E OPW and IPW Model Features		
Weather	Vegetation Risk	Local Performance
 <ul style="list-style-type: none"> ▪ Wind Speed ▪ Turbulence ▪ Temperature ▪ Vapor Pressure Deficit 	 <ul style="list-style-type: none"> ▪ Tree Overstrike in each 2x2 km grid cell 	 <ul style="list-style-type: none"> ▪ Outage trends specific to each location through node feature
<p>The model has been enhanced by weighting recent years more heavily to learn and predict system performance changes due to vegetation management and system hardening.</p>		



Our Fire Potential Index (FPI) determines the probability that fires will grow large, given current and forecasted data.



PG&E Fire Potential Index Model Features			
Weather	Fuel Moisture	Topography	Fuel Model Type
<ul style="list-style-type: none"> Wind Speed Turbulence Temperature Vapor Pressure Deficit 	<ul style="list-style-type: none"> Dead fuel moisture Woody live fuel moisture Herbaceous live fuel moisture 	<ul style="list-style-type: none"> Ruggedness Slope Wind-terrain alignment 	<ul style="list-style-type: none"> Grass Shrub Timber Urban

Key Model Components

What goes into our model:

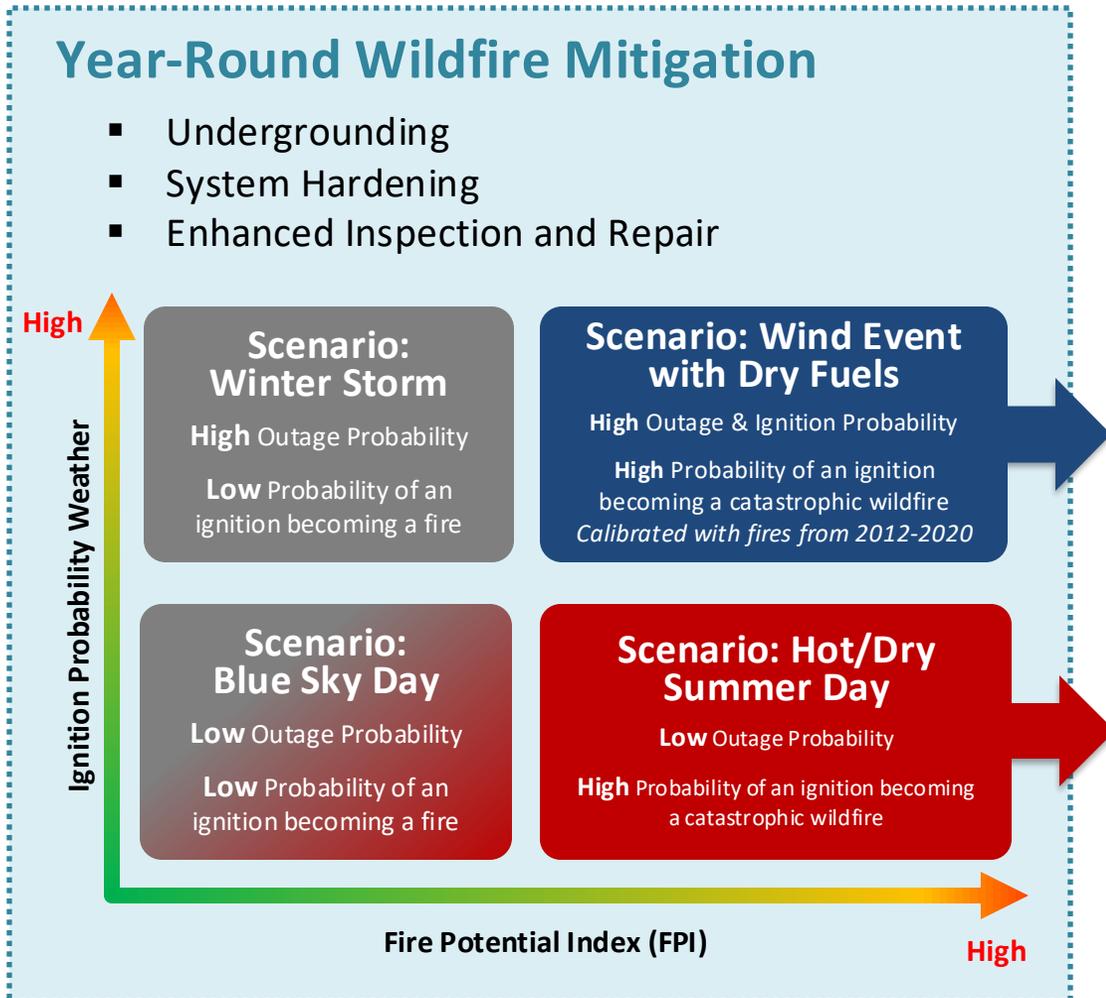
- Historical satellite fire detection data set from Sonoma Technology Inc. that includes accurate daily fire growth in California from 2012 - 2022
- Data from PG&E's 30+ year weather climatology study

Analysis and results:

- Forecasting hourly probability of large and catastrophic fires
- Maximizing predictive skill with state-of-the-art machine learning models
- Greater predictive skill than previous model confirmed by statistical evaluation and comparison of 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.



Layers of Wildfire Protection





Wildfire Mitigation Plan Progress

	2019-2023 PROGRESS	2019-2023 INVESTMENTS***	2024 TARGET	YEAR-OVER-YEAR CUMULATIVE PROGRESS
Undergrounding Our Lines Undergrounding powerlines to reduce wildfires caused by equipment	664* MILES COMPLETED	\$1,295,162 TOTAL (in 1,000s)	250 MILES	
System Hardening Strengthening our grid by installing stronger poles, covered powerlines and undergrounding	1,664** MILES HARDENED	\$2,105,278 TOTAL (in 1,000s)	280 LINE MILES	
Sectionalizing Devices and Transmission Switches Separating the grid into smaller sections and narrowing the scope of Public Safety Power Shutoffs	1,427 DEVICES INSTALLED	\$333,525 TOTAL (in 1,000s)	 ONGOING SEGMENTATION	
High-Definition Cameras Monitoring and responding to wildfires using artificial intelligence to increase visibility and improve wildfire suppression	602 CAMERAS INSTALLED	\$41,289 TOTAL (in 1,000s)	 AI ENABLEMENT	
Weather Stations Better predicting and responding to severe weather threats	1,424 STATIONS INSTALLED	\$35,709 TOTAL (in 1,000s)	 CONTINUED OPTIMIZATION	

*Undergrounding represents projects completed as part of the 10,000-Mile Undergrounding Program, which began in 2021. Total also includes an additional 48 miles of undergrounding that were completed between 2019-2020 prior to announcement of 10,000-Mile Undergrounding Program.

Includes system hardening completed in 2018. *2024 financial data is under validation.

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



Physical Risk Mitigation Progress Then and Now

2017

- EPSS
- PSPS
- 10K UG Program
- HD Cameras
- Weather Stations
- Wildfire Mitigation Plan

Programs to Date

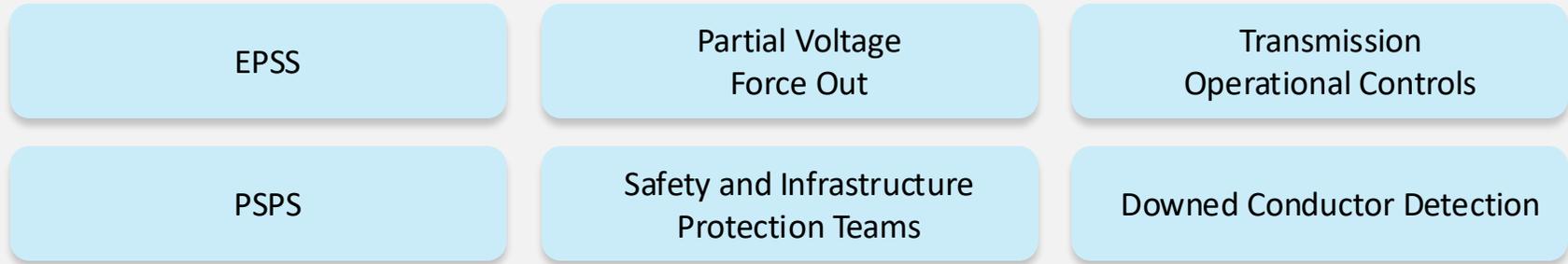
SITUATIONAL AWARENESS

<input checked="" type="checkbox"/>	High-Definition Cameras with AI Capability	614	CAMERAS INSTALLED
<input checked="" type="checkbox"/>	Weather Stations	1,561	STATIONS INSTALLED
<input checked="" type="checkbox"/>	Hazard Awareness Warning Center	24/7/365	MONITORING
<input checked="" type="checkbox"/>	Advanced Meteorology and Fire Science Models		

ASSET IMPROVEMENTS

<input checked="" type="checkbox"/>	Undergrounding*	725	MILES COMPLETED*
<input checked="" type="checkbox"/>	System Hardening**	1,764	MILES COMPLETED
<input checked="" type="checkbox"/>	Sectionalizing Devices	1,459	DEVICES INSTALLED
<input checked="" type="checkbox"/>	Trees Removed	3.5M	TREES REMOVED

OPERATIONAL MITIGATIONS



Date range: 2019-June 30, 2024. *Undergrounding represents projects completed as part of the 10,000-Mile Undergrounding Program, which began in 2021. Total also includes an additional 48 miles of undergrounding that were completed between 2019-2020 prior to announcement or 10,000-Mile Undergrounding Program. **Includes system hardening completed in 2018.

Public Safety Power Shutoff





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	2023	2024 YTD*
PSPS Events	8	6	5	0	2	2
Customers Impacted	2,014,000	653,000	80,400	-	5,099	1,843
Average Number of Counties Impacted	17	17	10	-	5	8
Average Outage Duration (hours)	43	35	31	-	17	29
Average Outage Restoration Time (hours)	17	10	12	-	5	4
Damage/Hazards	722	257	442	-	2	0
Peak Wind Gusts	102 MPH	89 MPH	102 MPH	-	49 MPH	51 MPH

**Includes July 2, 2024 event. We are preparing our 10-day reports for the July 21, 2024 event and will share additional information once available. Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.*

Improving PSPS in 2024

We are improving our PSPS program by incorporating lessons learned into our processes, planning and preparation.



2023 Key Advancements

In 2023, we:

- Distributed PSPS restoration maps to patrols prior to issuing an “all clear” to speed up restoration times
- Conducted functional exercises to review roles, test our policies and procedures, and improve coordination
- Created segmented guides to evaluate circuits and omit areas not impacted by a PSPS

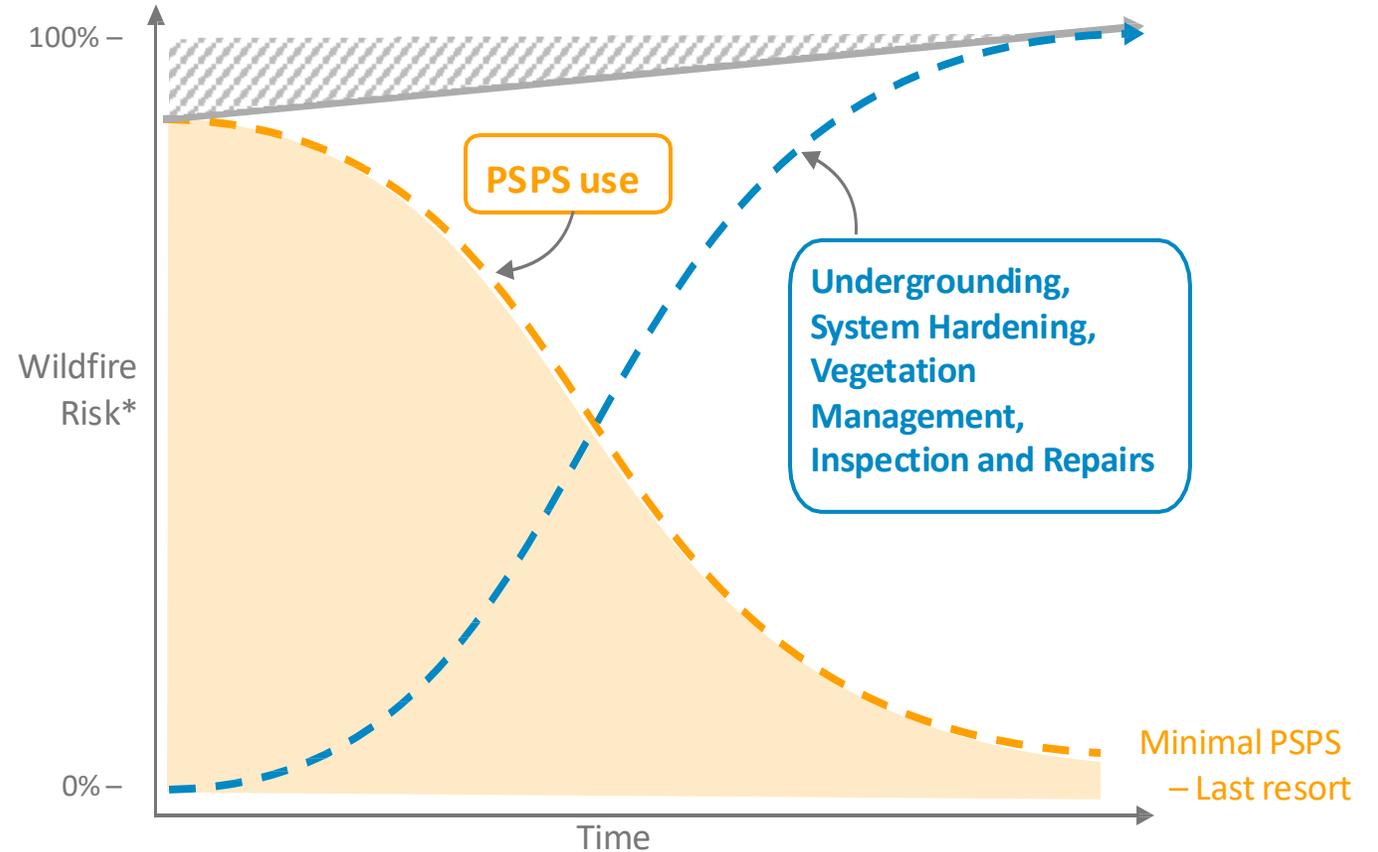


2024 Improvements

This year, we are:

- Updating our FPI and OPW models to utilize enhanced machine learning technology that better calculates risk
- Implementing targeted improvements, refining communication protocols and updating training programs based on lessons learned from our PSPS exercises and surveys to better prepare and enhance support for our customers

As we continue to implement efforts like undergrounding, system hardening and other resiliency mitigations, **reliance on PSPS as a measure of last resort will decline.**





Grid Hardening Case Studies

Our work to move powerlines underground is mitigating the effects of PSPS and keeping customers energized during distribution-level PSPS outages.

Examples of this work include:

Project Location	Year Completed	Miles Undergrounded	Customers Removed from PSPS Scope
Walnut Creek	2022	1 mile	2,618
Moraga/Orinda	2022	<1 mile	2,623
Oakhurst	2022	<1 mile	320

We communicate and engage with customers before, during and after a PSPS to share information and help them prepare and stay safe.

To reach customers, we utilize:

- Email and direct mail (letters, postcards, brochures)
- PG&E’s website
- Social media, media and news releases
- Wildfire Safety Webinars, In-person Safety Open Houses and Regional Town Halls



POSTCARD



CUSTOMER LETTER

We improved our outreach and engagement efforts by:

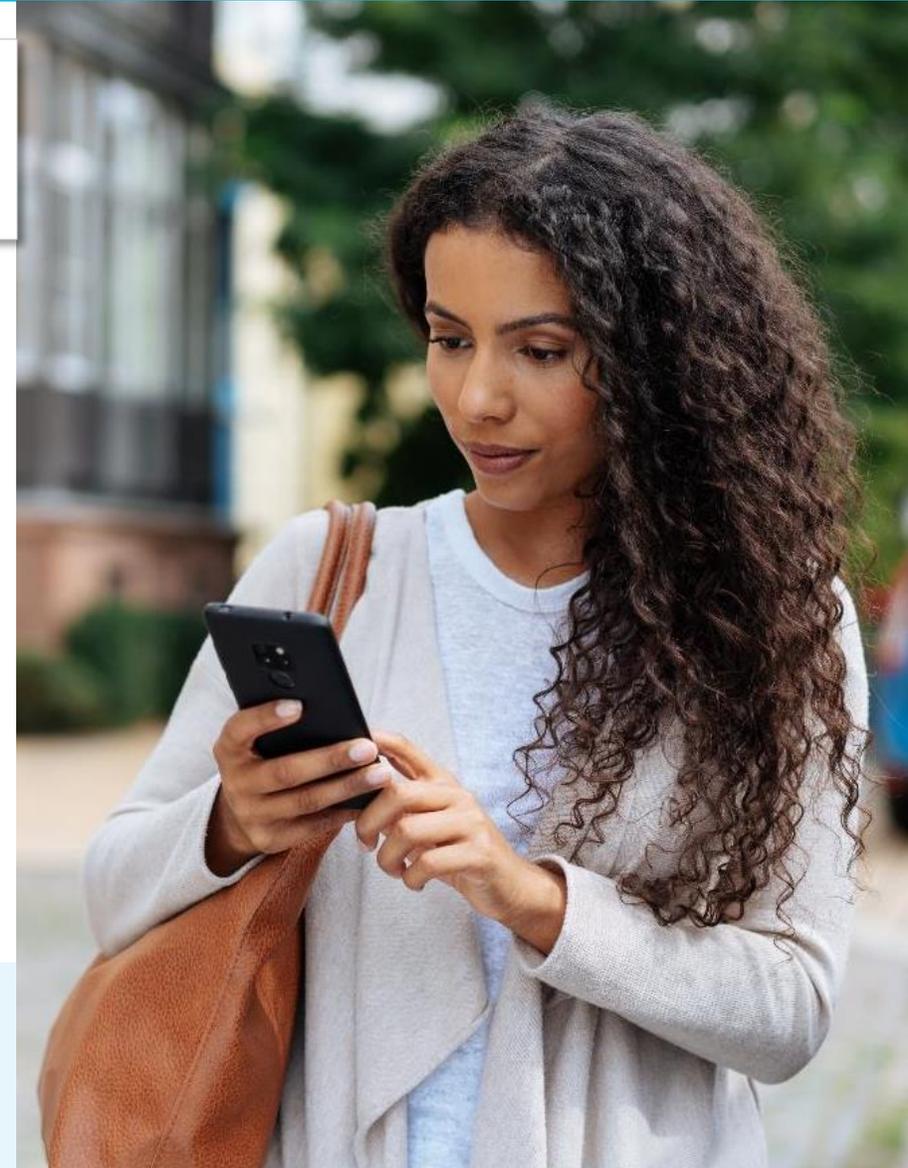
- ✓ Enhancing our preparedness offerings and support for customers with Access and Functional Needs (AFN) and focusing on ADA compliance
- ✓ Conducting in-language, targeted and in-person wildfire safety events
- ✓ Enhancing our interactive wildfire safety progress map

Our teams are continuously exploring ways to improve our notification processes so that customers receive timely and accurate notifications.

Last year, our teams:

- ✓ Increased trainings to improve notification accuracy and timeliness
- ✓ Utilized notification monitoring tools following de-energization to improve communication with customers
- ✓ Expanded automation to notify customers more quickly
- ✓ Implemented feedback from local governments and other Public Safety Partners to improve customer experience
- ✓ Examined previous missed notifications to improve efficiency during future PSPS events

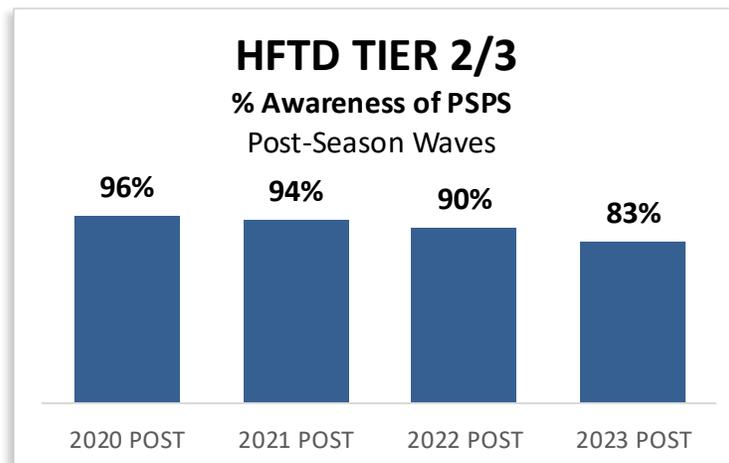
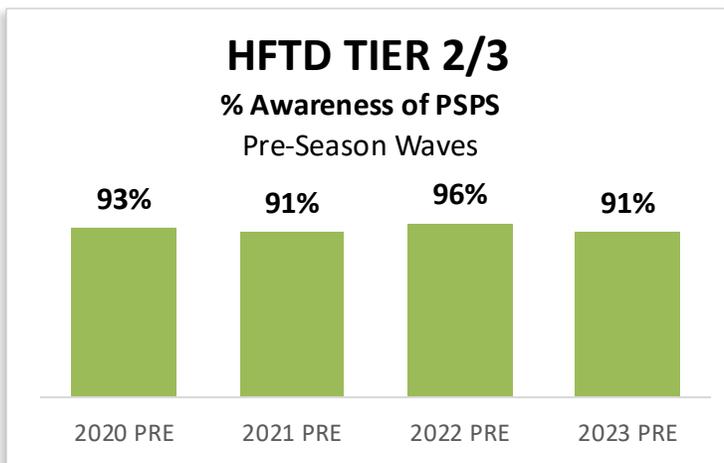
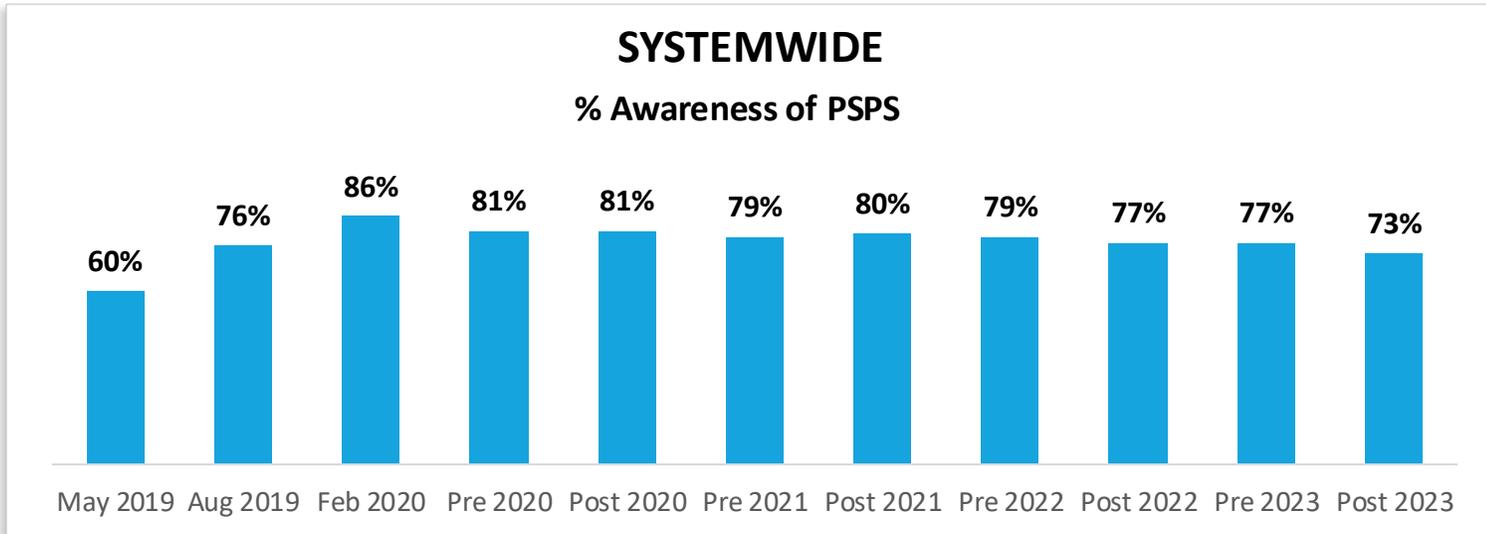
This year, we continue to conduct outreach to Customers with Access and Functional Needs, Public Safety Partners, and customers that operate Critical Facilities to ensure we have accurate contact information in case of a PSPS or emergency.





Listening to Customers

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



Key Takeaways

- PSPS awareness remains high for all customers.
- Awareness and preparedness are higher in HFTD, where there is more outreach conducted.
- Nearly one third of customers surveyed are satisfied and have no suggestions to improve communications
- Customer feedback on PSPS improvements include notification accuracy and specificity and additional information on support programs

We work with our colleagues in our Joint Utilities Working group to capture commonalities and share action plans to address customer and company challenges during PSPS.

Telecommunication Coordination

- Working with telecommunication providers to align on timing and customer messaging to increase information transparency and consistency.

IOU- Shared Customers

- Identifying circuits and customers shared by IOUs to ensure customers affected by a PSPS receive the same notifications.

Statewide Briefing Alignment

- Coordinating on the Statewide Executive Briefing to ensure each IOU is sharing a consistent information on PSPS.



We are applying lessons learned and improving our programs as part of our efforts to keep our customers and communities safe during wildfire season.

Enhanced Powerline Safety Settings





Protecting Customers with Enhanced Powerline Safety Settings

We are continuously working to improve reliability and minimize customer impacts.

How It Works

Turning off power within one-tenth of a second if a tree branch or other object strikes the line.

Why We Do It

Stopping wildfires before they have a chance to start.



	2022	2023	2023 vs. 2022 Comparison	2024 YTD
Number of Outages	2,379	2,263	5% decrease	760
Avg. Outage Length	2.9 hours	3.1 hours	7% increase	2.6 hours
Avg. Customers Impacted per Outage	889 customers	873 customers	2% decrease	877 customers

Data is approximate and as of 7/11/2024.

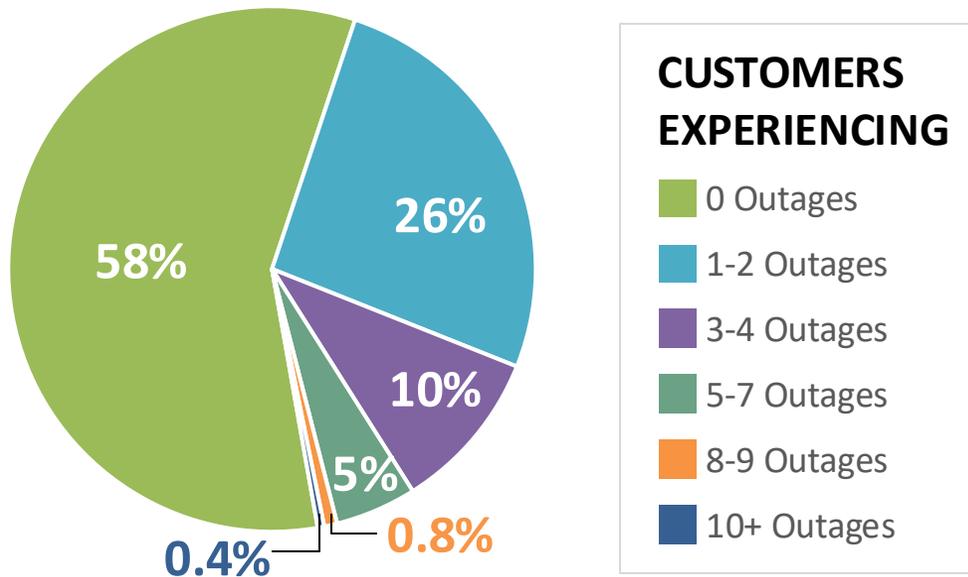
*Data is approximate; based on PG&E's weather-normalized analysis of California Public Utility Commission reportable fire ignitions compared to the 2018-2020 average. Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

2023 EPSS Performance

Through real-time and continuous improvements, we mitigated customer impacts without compromising the wildfire prevention benefits of EPSS.



1.82 Million Customers Protected



Data as of 12/31/23

2024 EPSS Improvements

Continuing to improve reliability for all customers protected by EPSS and taking additional actions for the most impacted customers.

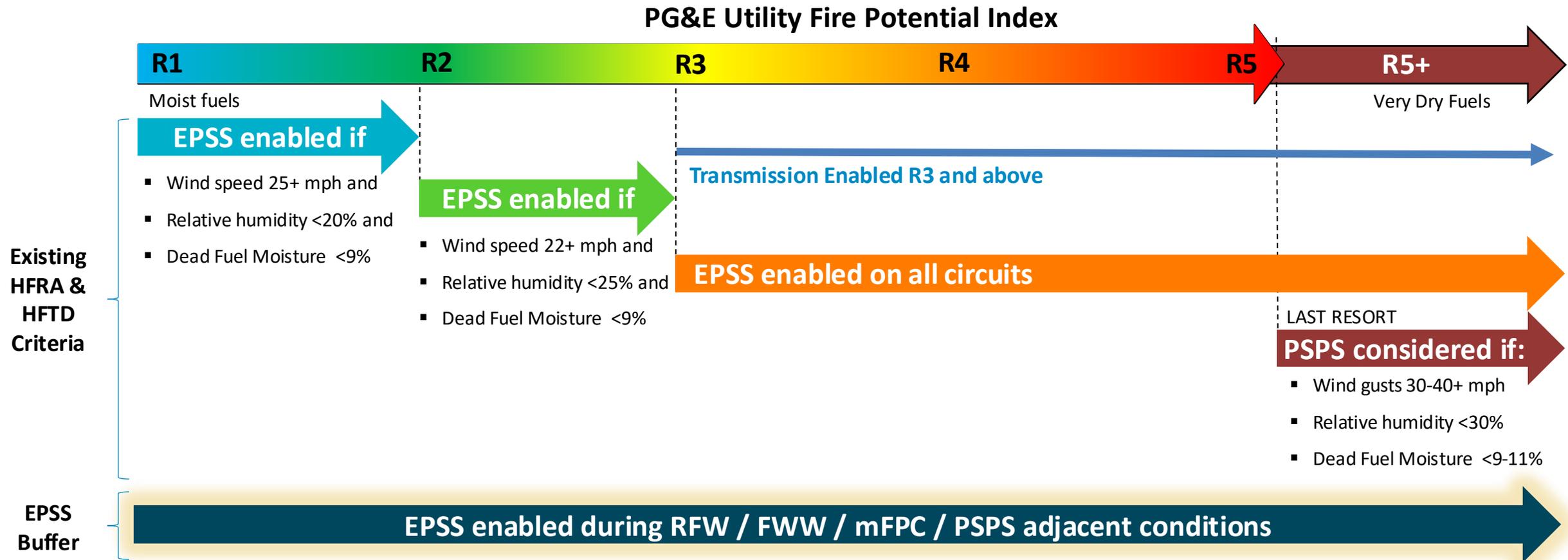
We are targeting mitigation efforts on the most impacted devices, these include:

- ✓ Installing line sensors to speed up restoration
- ✓ Adjusting the sensitivity of safety settings to minimize outages
- ✓ Trimming trees near powerlines to reduce vegetation-related outages
- ✓ Installing Down Conductor Technology further reducing wildfire risk
- ✓ Installing sectionalizing devices to limit the number of customers impacted during outages



Current EPSS Enablement Posture

Our criteria for EPSS enablement is very conservative – circuits are enabled when risk conditions meet or exceed conditions that historically account for 95% of acres burned and property damage.



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

Enhancing EPSS with Advanced Technologies

Gridscope

Piloted in 2023, these innovative sensors detect wildfire hazards and their location, helping to get power back on faster. This year, we expanded the program.

1,701

Sensors installed
in 2023

6,500

Sensors planned
in 2024



Gridscope Sensor

Down Conductor Detection (DCD)

Identifies and helps us prevent very low-current faults that may not be caught with existing EPSS protection. Last year, DCD mitigated at least 17 potential ignitions.

770

Devices capable
in 2023

400

Devices planned
in 2024



When a wire went down in Sonoma County, DCD quickly de-energized the line to help prevent a potential ignition

Customer Support and Resources





Helping Customers Access Support

Program	2023 Qualifications	2023 Target	2023 Actuals	2024 Improvements	2024 Target
Portable Battery Program (PBP)	<ul style="list-style-type: none"> Enrolled in MBL or Self-Identified as Vulnerable and have assistive technology or durable medical equipment Located in a Tier 2/3 HFTD or have experienced at least one PSPS outage in 2021 or 5 or more EPSS outages in 2022 	4,000*	3,885	-	4,000*
Disability Disaster Access and Resources (DDAR)	<ul style="list-style-type: none"> Must be an electricity-dependent individual with AFN and Located in a Tier 2/3 HFTD and experienced 2 or more PSPS outages since 2020 	4,000*	830	-	4,000*
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 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 	950	1,250	Removal of deed-restriction for low-income eligibility	2,500
Fixed Power Solutions: Residential Storage Initiative	<ul style="list-style-type: none"> Must be enrolled in CARE/FERA and meet eligibility of 8+ EPSS outages in 2022 and 2023 	650	443	-	1,800
Generator and Battery Rebate Program (GBRP)	<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 	2,500	2,960	Expanded list of eligible portable battery products	3,000
Permanent Battery Storage Rebate Program (PBSR)	<ul style="list-style-type: none"> Have a residential PG&E electric account and Must have experienced 8+ EPSS Outages since January 1, 2022 	N/A New Program	N/A New Program	Streamlined webpage and online application	750
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 	3,176	3,000	Customers can apply through an online portal	4,000

*PBP and DDAR have a combined target of 4,000 portable battery deliveries for 2023 and 2024.

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



Community Resource Centers (CRC)

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

2024 CRC Locations **118** Indoor sites **289** Outdoor sites

2023 CRC Usage			
PSPS Date	County	Site Name	Total Attendance
8/30-8/31	Butte	Concow Elementary School	24
	Colusa	Stonyford Community Hall	86
	Glenn	Elk Creek Junior Senior High School	73
	Shasta	Happy Valley Community Center	36
	Shasta	Hill Country Health and Wellness Center	187
	Tehama	Rancho Tehama Association	337
	Tehama	Noland Park	2
	Tehama	Flournoy Elementary School	63
	9/20-9/21	Butte	Concow Elementary School
Colusa		Stonyford Community Hall	58
Glenn		Elk Creek Junior Senior High School	43
Lake		Live Oaks Senior Center	81
Shasta		Hill Country Health and Wellness Center	82
Tehama		Rancho Tehama Association	70
Tehama		Flournoy Elementary School	61
Tehama		Lassen Mineral Lodge	351

2024 CRC Usage			
PSPS Date	County	Site Name	Total Attendance
7/2-7/3	Butte	Concow Elementary School	58
	Colusa	Stonyford Community Hall	156
	Glenn	Elk Creek Junior Senior High School	37
	Lake	Twin Pine Casino and Hotel	165
	Shasta	Happy Valley Community Center	36
	Shasta	Dignity Health Mercy Oaks	54
	Tehama	Rancho Tehama Association	804
	Tehama	Noland Park	67

2024 CRC Planning Improvements

- ✓ Secured multiple agreements to provide accessible transportation to and from CRCs, to alleviate challenges in customers accessing support.
- ✓ Continued to consult with Tribes, Local Governments and Public Safety Partners to make sure CRCs are located in areas that are accessible to customers and located in areas with the highest risk.
- ✓ Expanded availability of CRCs with insulated and air-conditioned tents to support customers during high-heat PSPS events.



Improved Support For Our Most Vulnerable Customers

We continue to improve our support options for customers with access and functional needs.

This includes:

- **Financial support programs** available for customers with AFN who have fallen behind on bills
- Enhancements made to the AFN webpage on PG&E's website to help customers easily navigate, find resources and transportation
- Providing opportunities for **customers to qualify for additional resources**, such as generator rebate, portable battery or a Backup Power Transfer Meter
- Implementation of a **self-identification campaign** to assess customer's disability and equipment-dependent status
- Spot checks at CRC locations to **ensure they are ADA compliant**
- Roll out of **notification messaging in American Sign Language** to serve those who are deaf or hard of hearing
- Partnerships with DDAR, Food Banks and California Network of 211's



MBL and AFN Resiliency Program Participation

PG&E's battery programs are primarily targeted at customers who have experienced more recent or more frequent wildfire safety outages.

	MBL on EPSS Protected Circuits	AFN on EPSS Protected Circuits
Total Population*	100,712	404,609
Total Program Participants**	17,878	23,396
% of Population	18%	6%

Program participants include Medical Baseline (MBL) or customers with Access and Function Needs (AFN) who participated in at least one of the following Customer Resiliency programs:

Portable Battery Program, Disability Disaster Access and Resources Program, Self-Generation Incentive Program, Residential Storage Initiative, Generator and Battery Rebate Program, Permanent Battery Storage Rebate, or Back-up Power Transfer Meter.

**Data as of 7/24/24 and accounts for connected/adjacent EPSS protected circuits; **Program inception to date through June 2024*

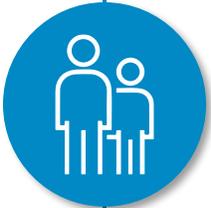
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.

Medical Baseline Program (MBL)

We continue to make improvements to our MBL Program to assist residential customers with extra energy needs.

In 2023, we:

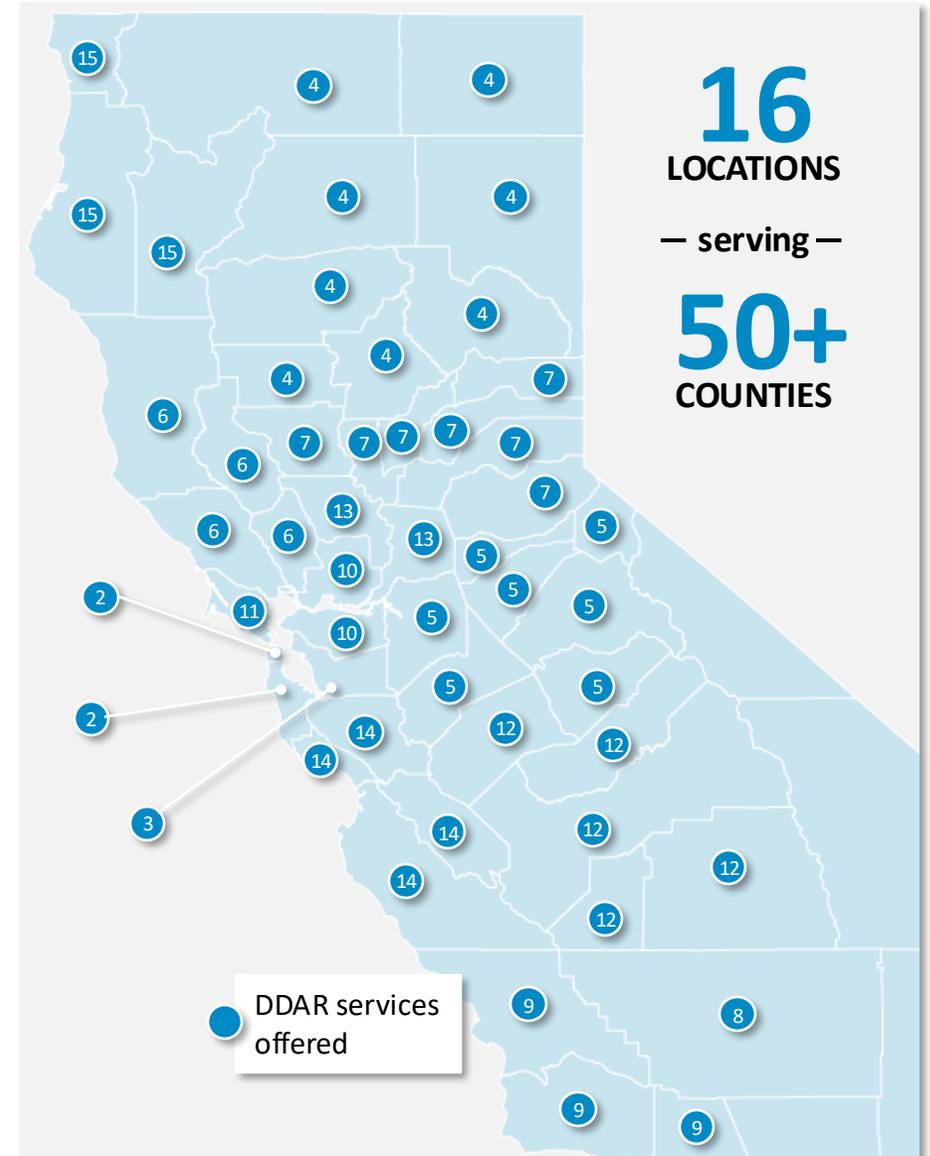
- Expanded Medical Baseline and Self-Certified Vulnerable customer notification process
- Secured multiple agreements to provide accessible transportation to and from CRCs
- Launched paid media radio ads promoting our MBL Program and DDAR
- Improved our application process to allow Medical Assistants and Records Departments to sign MBL applications on behalf of medical practitioners to streamline the application process
- Increased program retention by requesting less frequent recertification for permanent MBL customers
- Partnered with Medical Practitioners to raise awareness and refer patients to the program



We partner with the DDAR Program to support people with disabilities and chronic conditions.

Resources Provided

- Emergency planning assistance including home floor plans, escape routes and meet-up spots
- Portable backup batteries
- Accessible hotel accommodations and transportation during an emergency
- Food vouchers
- Fuel cards for generators



We partner with the California network of 211s to provide customers with AFN a single source of information and connection to available resources in their communities.

Services include:

- ✓ A connection point for all AFN households before, during, and after a PSPS
- ✓ PSPS education and connection to critical resources (i.e., transportation, portable backup batteries)
- ✓ Live phone services in English and Spanish
- ✓ 300 additional languages available through tele-interpretation services



Q&A



Thank You



Appendix





Status of Planned/Upcoming Resilience Efforts – Systemwide

Program	County	Site Name/Area	Status	Estimated Completion
Distribution Microgrids*	Butte	Magalia	Operational	N/A
	Calaveras	Arnold	Operational	N/A
	El Dorado	Georgetown	Operational	N/A
	El Dorado	Pollock Pines	Operational	N/A
	Humboldt	Redwood Coast Airport Microgrid****	Operational	N/A
	Lake	Clearlake North	Operational	N/A
	Lake	Lucerne	Operational	N/A
	Lake	Middletown	Operational	N/A
	Napa	Angwin	Operational	N/A
	Napa	Calistoga	Operational	N/A
	Placer	Colfax	Operational	N/A
	Placer	Foresthill	Operational	N/A
	Shasta	Shingletown	Operational	N/A
Tuolumne	Groveland	Operational	N/A	
Islanding	Calaveras**	Salt Springs Island	Operational	N/A
	Calaveras***	West Point Island	Operational	N/A
	Humboldt	Humboldt Bay Island	Operational	N/A
	Plumas	Caribou Island	Operational	N/A
	Tehama	Red Bluff Island	Operational	N/A
	Tuolumne	Spring Gap	Operational	N/A

Local work plans are subject to change and data is based on the best available information at this time.

*Distribution microgrids are considered operational once temporary generation is available and energization plans are finalized.

**Also serves portions of Amador and Alpine Counties.

***Also serves portions of Amador County.

****Facility owned by Redwood Coast Energy Authority; PG&E owns, operates and maintains microgrid circuit.

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



Status of Planned/Upcoming Resilience Efforts – Systemwide Contd.

Program	County	Site Name/Area	Status	Estimated Completion
Remote Grids	Mariposa	Briceburg - Mariposa Remote 001	Operational	N/A
	Tehama	Corning Remote 0001 - 0002	Operational	N/A
	Mariposa	Slaughter House	Operational	N/A
	Mariposa	Miami Mountain	Operational	N/A
	Madera	Melvin	Under Construction	Q2 2024
	Sonoma	Pepperwood	Operational	N/A
	Tehama	Battle Creek	Under Construction	Q3 2024
	Tehama	Manton Wildcat	Planning	Q2 2024
	Tehama	Newville	Planning	Q3 2025
	Tehama	Long Hollow	Planning	Q3 2025
	Tulare	Whitaker Forest	Planning	Q4 2024
	Tuolumne	Forebay	Planning	Q4 2025
	Lake	Anderson Springs	Planning	Q3 2025
	Butte	Big Bend 1101	Planning	Q4 2025
	Shasta	Shingletown Wildcat	Under Construction	Q2 2024

Local work plans are subject to change and data is based on the best available information at this time.

Break

Afternoon Public Comments

- Any member of the public may make public comments. Comments shall not exceed two minutes.
- In person comments: your name will be called in the order written down at the comments sign-up table.
- Comments by phone: please unmute your phone, press *1, and record your first and last name slowly and clearly when prompted. You will be placed into a queue in the order that you have identified yourself. When it comes time for you to speak, the operator will announce your name and open the line. You will have two minutes to speak. To withdraw your request, please press *2.

Closing Remarks

President Reynolds and CPUC Commissioners

Shaun Fairbanks, Deputy Chief, CAL FIRE

Patrick Doherty, Program Manager, Office of Energy Infrastructure Safety





California Public Utilities Commission