



OFFICE OF ENERGY INFRASTRUCTURE SAFETY

715 P Street, 20th Floor | Sacramento, CA 95814
916.902.6000 | www.energysafety.ca.gov

Caroline Thomas Jacobs, Director

To: 2022 Wildfire Mitigation Plans Service List (OEIS WMP)

May 26, 2022

Enclosed is ENHANCED POWERLINE SAFETY SETTINGS (EPSS) PROGRAM UPDATE, a Pacific Gas and Electric Company (PG&E) presentation to the California Public Utilities Commission (CPUC), dated April 20, 2022. This document is referenced in the Office of Energy Infrastructure Safety's (Energy Safety's) Revision Notice for PG&E's 2022 Wildfire Mitigation Plan Update filed to the 2022-WMPs docket earlier today.¹ To ensure stakeholders, utilities, and members of the public can easily access referenced documents in their review of the Revision Notice, this document is hereby published for public viewing.

Sincerely,

A handwritten signature in black ink that reads "Lucy C Morgans".

Lucy Morgans
Program Manager,
Electric Safety Policy Division,
Office of Energy Infrastructure Safety

¹ <https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=52478&shareable=true>

Pacific Gas and Electric Company

ENHANCED POWERLINE SAFETY SETTINGS (EPSS)

PROGRAM UPDATE

April 20, 2022





Earthquake

- ✓ Know the safest places to drop, cover, and hold, such as under sturdy desks and tables.



Fire

- ✓ Know your exits, escape routes, and evacuation plan.
- ✓ If safe to do so, use your compliant fire extinguisher.
- ✓ Exit the house and call 911.



Active Shooter

- ✓ Get out, hide out, take out and call 911.



Medical Emergency

- ✓ Know who can perform first aid and CPR.
- ✓ Call 911 if you're alone or share your location with the call leader to help.
- ✓ If you have an AED, ensure you and others in your household know where it's located and how to use it.



Psychological Safety

- ✓ We care for each other.
- ✓ Look out for one another.
- ✓ Create a safe space for all.
- ✓ Welcome new ideas from everyone.
- ✓ Practice self-care.



Ergonomics

- ✓ Practice **30/30** (every 30 minutes, move and stretch for 30 seconds).
- ✓ Ensure proper ergonomics.
- ✓ Use and update RSI Guard.



Emergency Planning

- ✓ Create/update a personal emergency preparedness plan.



COVID-19

- ✓ Wash hands frequently.
- ✓ Wear a mask when required.
- ✓ Get vaccinated if you are able.
- ✓ Follow current CAL-OSHA regulations and local county health orders.
- ✓ Visit COVID-19 employee site for latest updates and tips.



Agenda

- 1 California's Intensifying Wildfire Risk
- 2 Program Overview and 2022 Scope
- 3 System Readiness and Enablement Criteria
- 4 Improving Reliability and Customer Support
- 5 Q&A

PG&E Speakers

Eric Lamoureux

Deputy Director, Enhanced
Powerline Safety Settings
Program

Dave Canny

Director, Enhanced Powerline
Safety Settings Program

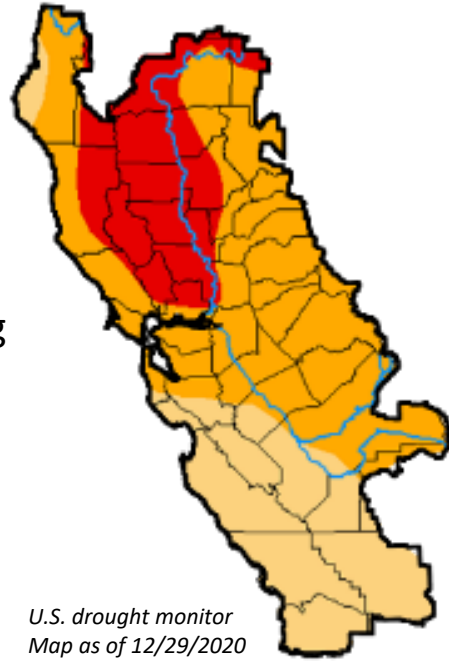
Dave Meier

Senior Manager, Customer
Strategy

Drought-Intensified Wildfire Risk in Our Service Area

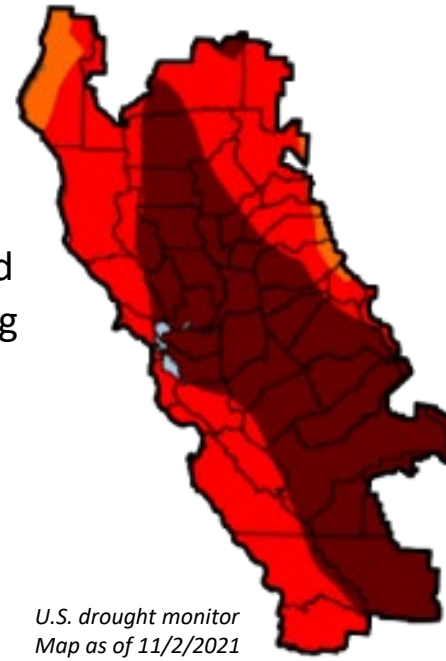
2020

47%
of acreage
burned by
wildfires ignited
on non-Red Flag
Warning days



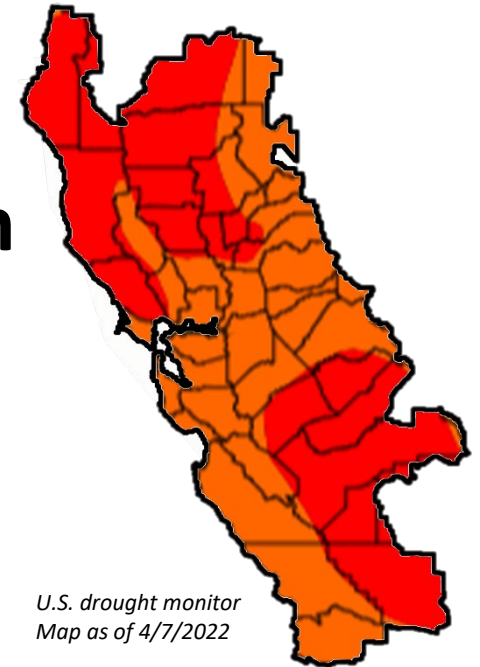
2021

95%
of acreage
burned by
wildfires ignited
on non-Red Flag
Warning days



2022

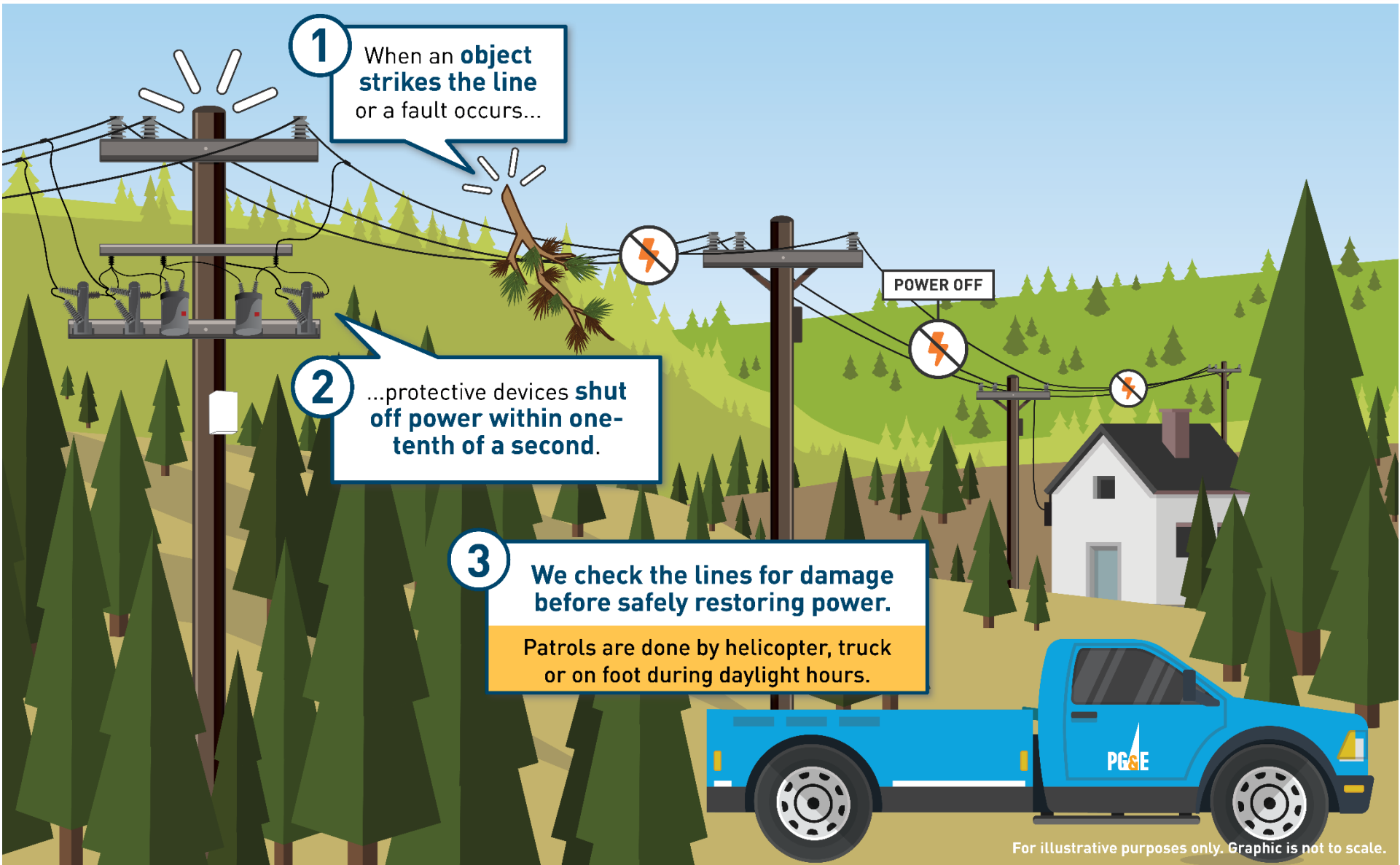
**Driest
January
– March**
over the last
128 years



MAP LEGEND

- D0: Abnormally dry
- D1: Moderate drought
- D2: Severe drought
- D3: Extreme drought
- D4: Exceptional drought

How Enhanced Powerline Safety Settings Work



A Proven Wildfire Prevention Tool

2021 Pilot

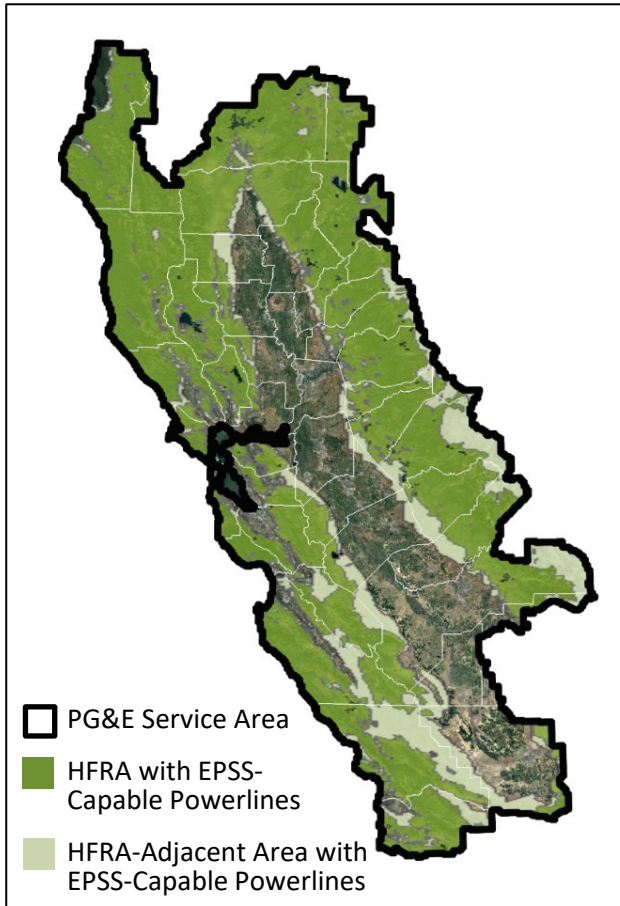
- > 170 circuits | 10,000 circuit miles
- > Outreach and engagement with:
 - Customers
 - Local agencies
 - CPUC and OEIS
- > Majority of circuits de-activated following late October atmospheric river events

80%
 reduction in CPUC-reportable ignitions on powerlines with these safety settings enabled*



These settings may have prevented an ignition when a tree branch fell into a powerline and power quickly and automatically turned off.

*In HFTDs compared to the prior 3-year average as of 12/31/21.



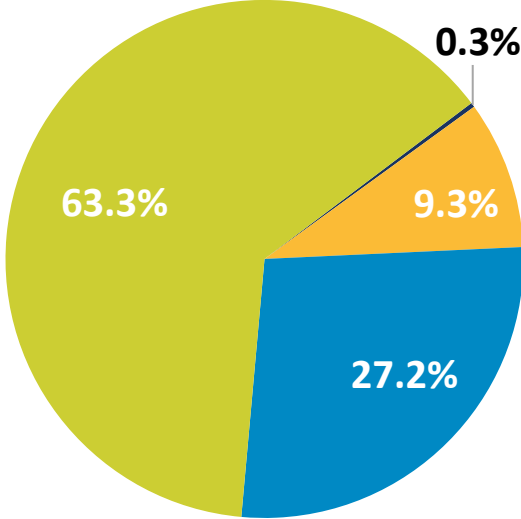
43,431 Total Circuit Miles	1.75M Customers Protected
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OF THE TOTAL:

35,084 Circuit miles are in and connected to High Fire-Risk Areas (HFRA)	1.2M Customers protected
8,348 Circuit miles in HFRA-adjacent areas	550K Customers protected

Data is approximate

Potential Customer Impact



VERY HIGH IMPACT (3-4 Outages/Month*)	MODERATE IMPACT (0-1 Outages/Month*)
HIGH IMPACT (1-3 Outages/Month*)	LOW IMPACT (0-1 Outages/Season*)

*Estimated monthly projection based on historical lookback data

PG&E's Utility Fire Potential Index (FPI)



Weather

- Wind Speed
- Turbulence
- Temperature
- Vapor pressure deficit



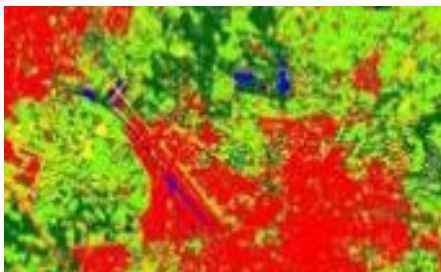
Fuel Moisture

- Dead fuel moisture
- Woody live fuel moisture
- Herbaceous live fuel moisture



Topography

- Ruggedness
- Slope
- Wind-terrain alignment



Fuel Model Type

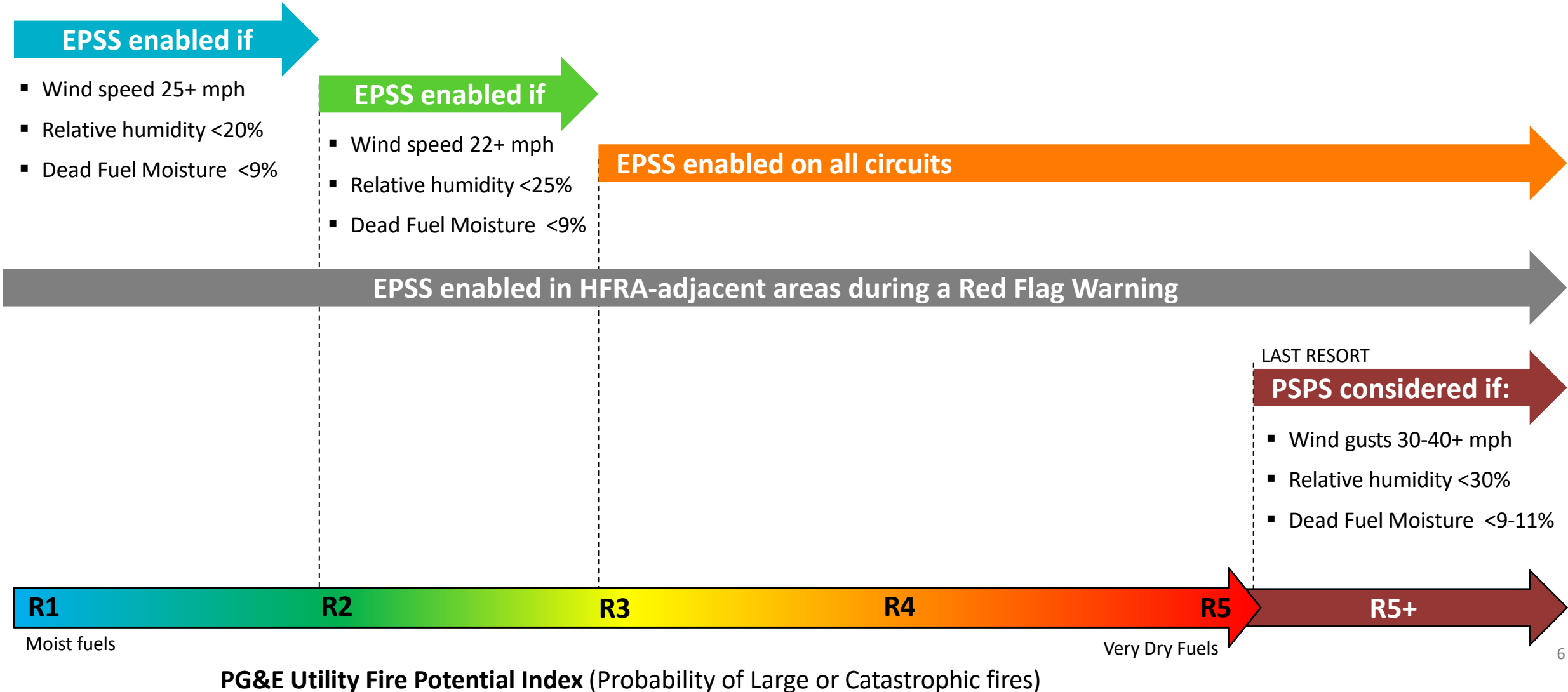
- Grass
- Shrub
- Timber
- Urban

Key Model Components

- Historical satellite fire detection data set from Sonoma Technology Inc. that includes fire growth in California from 2012 - 2020
- Data from PG&E's 31-year weather climatology study
- Technosylva fuel moistures and granular fuel type maps
- 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



Risk-Based Enablement Approach



Enablement Based on Local Weather Conditions

Determining when to enable and disable EPSS based on:

Historic Circuit Analysis

4-year analysis of historic FPI values between May and November

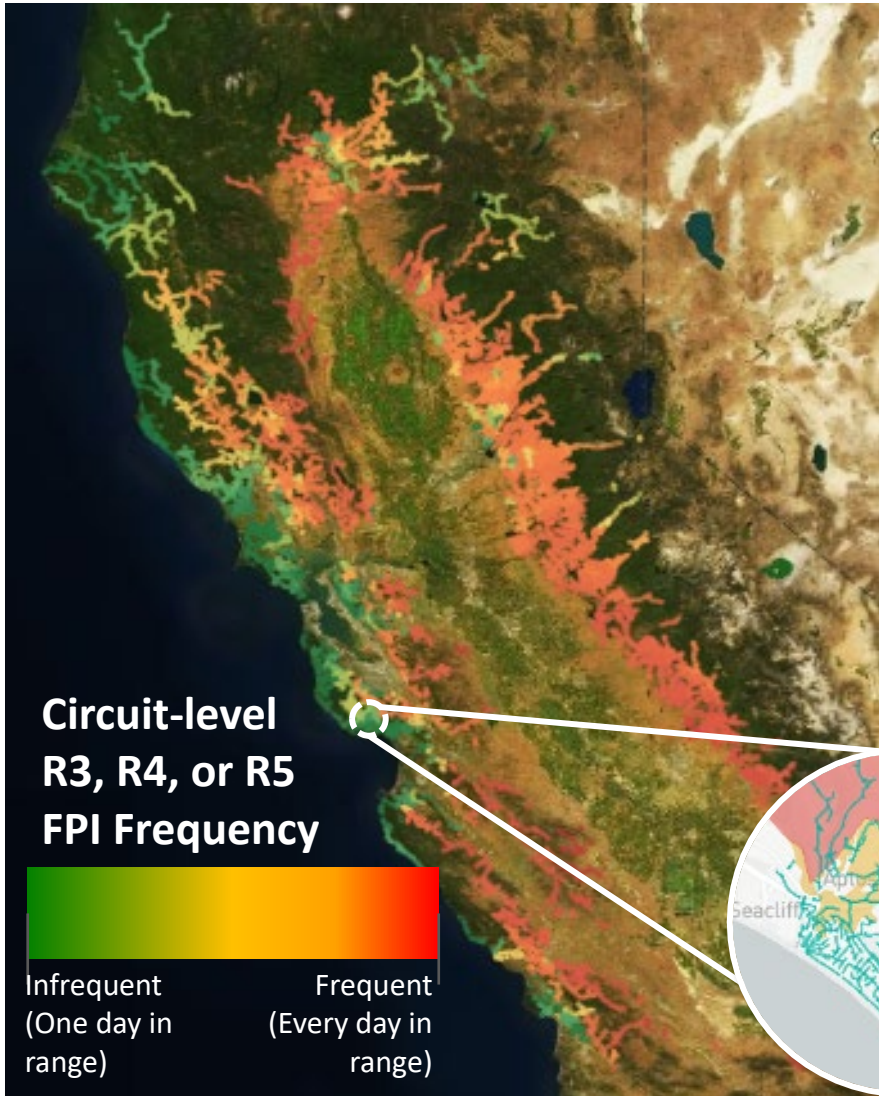


Localized Weather Conditions

- Wildfire risk and consequence
- Coastal vs. inland localized weather conditions (impact of marine layer)
- Operational considerations and capabilities

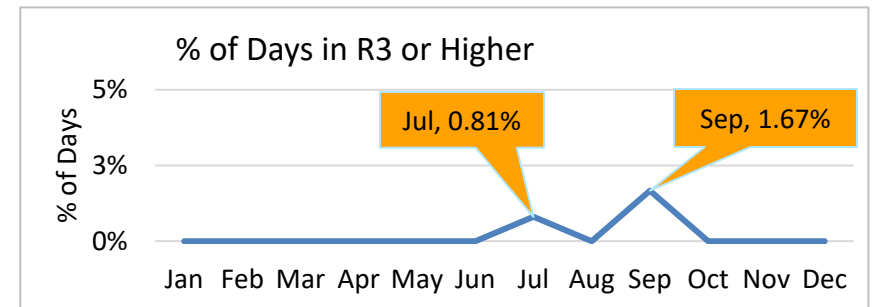


Circuit-level R3, R4, or R5 FPI Frequency



Coastal Circuit Example: Rob Roy 2105

- Santa Cruz County
- Central Coast Division
- 11 EPSS Enabled Devices
- 8,770 Service Locations



Near-Term:

- Refined protocols and settings based on real-time risk
- Increased coordination with other wildfire safety programs
- Using historic weather analysis to determine daily enablement
- Conducting targeted asset hardening and inspections
- Identifying vegetation management work to prevent outages
- Increasing helicopters available for quicker patrols and response

Long-Term:

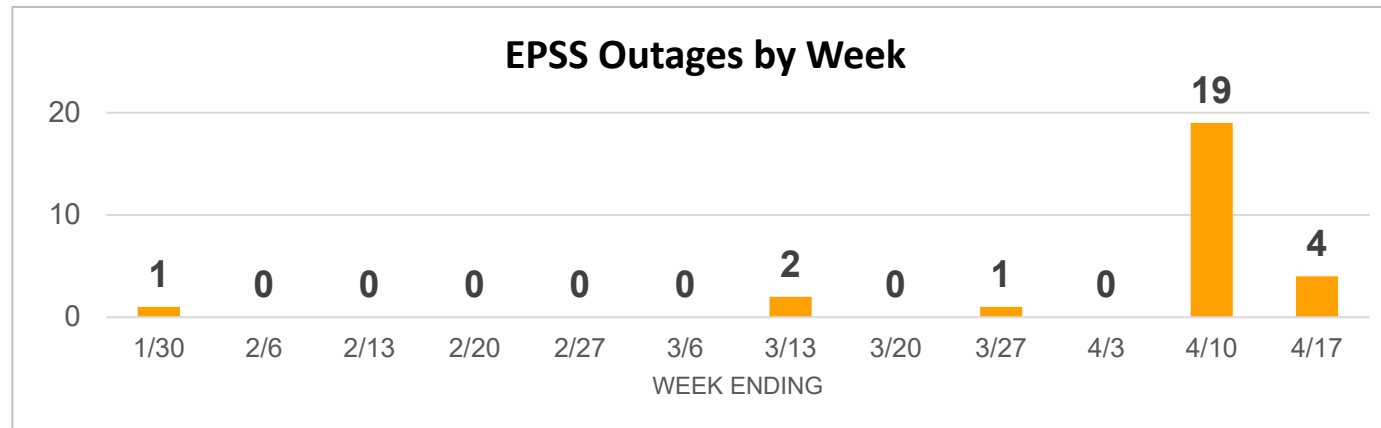
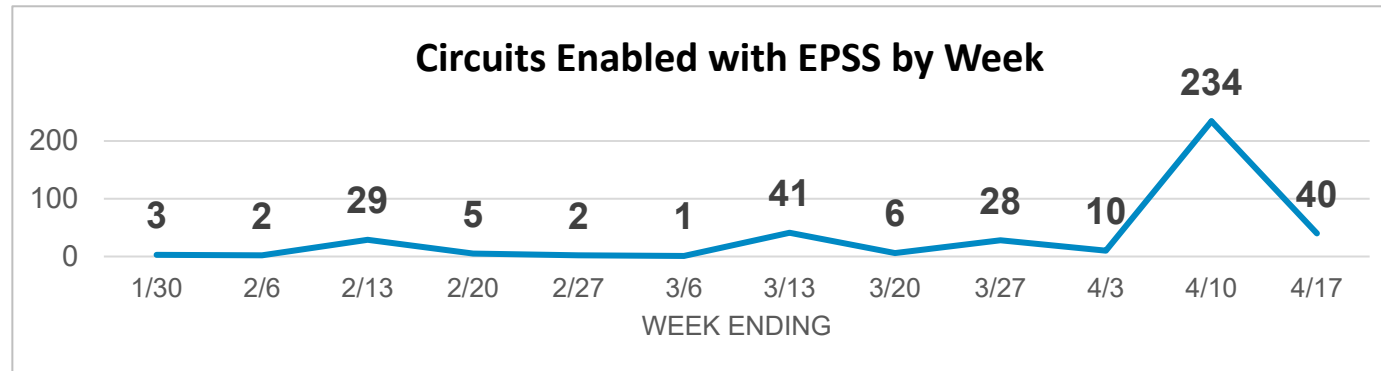
- Undergrounding 10,000 miles of powerlines
- Strengthening overhead powerlines with stronger poles and lines





2022 Early Season Enablement and Trends

YTD 2022 EPSS Attributable Outages				
Total Outages	Known Cause	Unknown Cause	Avg. CESO	CAIDI
27	12	15	567	194.2



0
PG&E facility ignitions in EPSS-protected zones

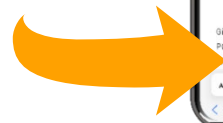
COMPLETED

- > **~1.9M** Emails/letters to customers
- > **90+** Local government forums with cities and counties
- > **42** County-specific EPSS maps
- > **7** Public webinars
- > **4** EPSS monthly reports submitted to the CPUC
- > **4** Rounds of customer focus groups and message tests

PLANNED

- > **~350M** Impressions on broadcast, digital and social media spots
- > **20+** Emails/letters to customers
- > **15+** Public webinars
- > **8** EPSS monthly reports submitted to the CPUC

Website with key info and resources
pge.com/epss



Enhanced Powerline Safety Settings Sonoma County Map

To help prevent wildfires during an ongoing drought, PG&E is continuing to evolve our efforts to protect our customers and communities. This includes adjusting the sensitive equipment to automatically "turn off power" within a fraction of a second if the system detects a problem. We call this Enhanced Powerline Safety Settings (EPSS). This year, we're expanding these safety settings to all powerlines in high fire risk areas (HFRAs) and lines that are adjacent to HFRAs. For more information, please visit pge.com/epss.

The below map shows the approximate areas in your community powered by EPSS circuits, which will be enabled during times of heightened wildfire risk.

Service Reliability in Sonoma County
 Power was on **99.92%** of the time
 JAN - MAR 2022

Power Outages in Your County
 An average of **129** customers were impacted per outage. Power was out for an average of **3 hours**.

Outage Causes

55%	Equipment Failure
16%	Animal Interacted With Equipment
16%	PG&E-initiated Outage
8%	Impact by Nature/Vegetation
5%	Third-party Incident
0.5%	Unknown

A SAFER ELECTRIC SYSTEM FOR YOU



Providing More Resources by Expanding Access For Customers

PROGRAM	NEW FOR 2022
Generator Rebate Program	Additional funding and eligibility
Portable Battery Program	Low-income requirement removed
Backup Power Transfer Meter	Expanded to all customers on EPSS-enabled circuits
Disability Disaster Access and Resources Program	Expanded access to backup batteries and support for medically sensitive customers
2-1-1 Partnership	Local resources and support available 24/7



How we are engaging:

- Direct outreach through PG&E's dedicated representatives
- Preparedness webinars
- Trainings to discuss customer support and resources
- Sharing information on potential impacts
- Discussing resiliency solutions
- Coordinating with Access and Functional Needs groups to reduce customer impacts

We are continuing high-touch engagement with hospitals and school districts.

Robust engagement with telecommunications carriers has improved preparedness and resiliency.

Additional critical customers we are engaging with:

- Water agencies
- Public Safety Partners
- Access and Functional Needs partners
- Medical Baseline customers
- First responders



Q&A



Safety Settings in Action

Watch the full video [HERE](#)



EPSS Settings ENABLED



EPSS Settings DISABLED