

# Pacific Gas and Electric Company

CALIFORNIA PUBLIC UTILITIES COMMISSION  
SAFETY BRIEFING

July 6, 2023





# Topics for Discussion

- 1 Governance and Safety Monitoring
- 2 Safety Culture
- 3 Safety Management Systems and Performance
- 4 Wildfire Safety

## PG&E Participants

### **Cheryl F. Campbell**

Chair of the Board of Pacific Gas and Electric Company, and Chair, Safety and Nuclear Oversight Committee

### **Sumeet Singh**

Executive Vice President, Operations and Chief Operating Officer

### **Matt Hayes**

Vice President, Enterprise Health and Safety and Chief Safety Officer

# Governance and Safety Monitoring





# Safety is at the Heart Of Our Decisions and Our Actions



**We are making progress and we have more work to do.**



**Safety governance is embedded at the highest levels of the company, with direct involvement from the Board of Directors and SNO Committee.**

## Board of Directors

15 members

- Supports and approves oversight of safety metrics tied to executive compensation
- Reviews annual performance



We have not altered our governance structure since successfully standing it up in 2021.

## Safety and Nuclear Oversight Committee (SNO)

6 members

- Reviews safety, risk, and operational performance and results of cause evaluations
- Provides feedback to PG&E management for action
- Oversees the Wildfire Mitigation Plan, including Enhanced Powerline Safety Settings (EPSS) and Public Safety Power Shutoff (PSPS) programs
- Independent, with deep expertise in wildfire safety, prevention, mitigation, emergency response and management, workforce and public safety, natural gas systems, risk management, cyber security and nuclear safety

## The knowledge and experience of PG&E's Board of Directors improves and informs safety outcomes.

### Key experience areas include:

- Financial planning, performance and literacy
- Public policy
- Customer experience and community leadership
- Workforce and public safety
- Audit
- Technology and cybersecurity
- Leadership in energy and utility industry
- Engineering, procurement and construction
- Clean energy innovation and technology
- Climate change mitigation and resilience
- Natural gas transmission, distribution, operation and safety
- Utility operation and engineering
- Wildfire safety, preparedness, prevention, mitigation, response and recovery
- Nuclear generation safety
- Federal and state-wide emergency management
- Risk management



### New Board Member

Our newest board member, a PG&E customer and member of the Latino community, has extensive expertise in risk management, audit, financial planning, performance, and literacy.



### How We're Improving

#### Phasing Out Classified Board

PG&E expects to adopt governance best practice of annual director elections in 2024.

# SNO Committee Recommendations





# SNO Committee Recommendations

**We continue to implement recommendations from our SNO Committee which focus on several key areas.**

SNO Committee Recommendations	Actions Taken
<b>Address serious workforce safety incident root causes</b>	<ul style="list-style-type: none"><li>• Creating a “failsafe” approach for high hazard work</li><li>• Conducting contractor safety Quality Assurance Reviews following a risk prioritization approach</li><li>• Incorporating the Hazard Wheel into pre-job safety briefings</li></ul>
<b>Reduce reliability impacts of Enhanced Powerline Safety Settings (EPSS) without compromising wildfire safety</b>	<ul style="list-style-type: none"><li>• Targeting our reliability improvement work on customers experiencing the greatest outage impact</li><li>• Implemented daily outage reviews where trends and actions to reduce outage impacts are identified and implemented at a regional level</li><li>• Refining circuit patrols and installing fault indicators to reduce outage durations</li><li>• Conducting vegetation management work and installing animal guards and sectionalizing devices to reduce impacts to customers</li></ul>
<b>Continue to improve the efficacy of our wildfire safety work, refine our vegetation management and inspection efforts, and foster innovative solutions to further reduce wildfire risk</b>	<ul style="list-style-type: none"><li>• Building on existing layers of protection and deploying innovative technologies such as Downed Conductor and Partial Voltage Force Out capabilities</li><li>• Refining our situational awareness capabilities to further target the scope of PSPS</li><li>• Building quality at the source for vegetation management and inspections programs to perform the work the right way the first time around</li><li>• Improving our communications and engagement with customers and agencies</li></ul>



# Safety Performance



Everyone and  
Everything is  
Always Safe





## **Continuing to evolve and mature our safety culture**

– at PG&E, we are evolving safety from being a compliance-focus to being value-based



## **Implementing an enterprise safety management system**

that builds on proven safety standards from high hazard industries



## **Continuing to make progress on our stands**

that “Catastrophic Wildfires Shall Stop” and “Everyone and Everything is Always Safe” – and we have more work to do



# Measuring Our Safety Culture

**We are evolving our safety culture and we have more work to do.**

## Safety Barometer Survey Results (2020-2022)

- Response rate improved from **58% to 64%**
- Overall score improved from **68.8% in 2020 to 78.8% in 2022, representing 2<sup>nd</sup> quartile performance**
- **All six performance categories increased** in percentile score compared to 2020 with **Supervisor Engagement scoring highest at 94%**

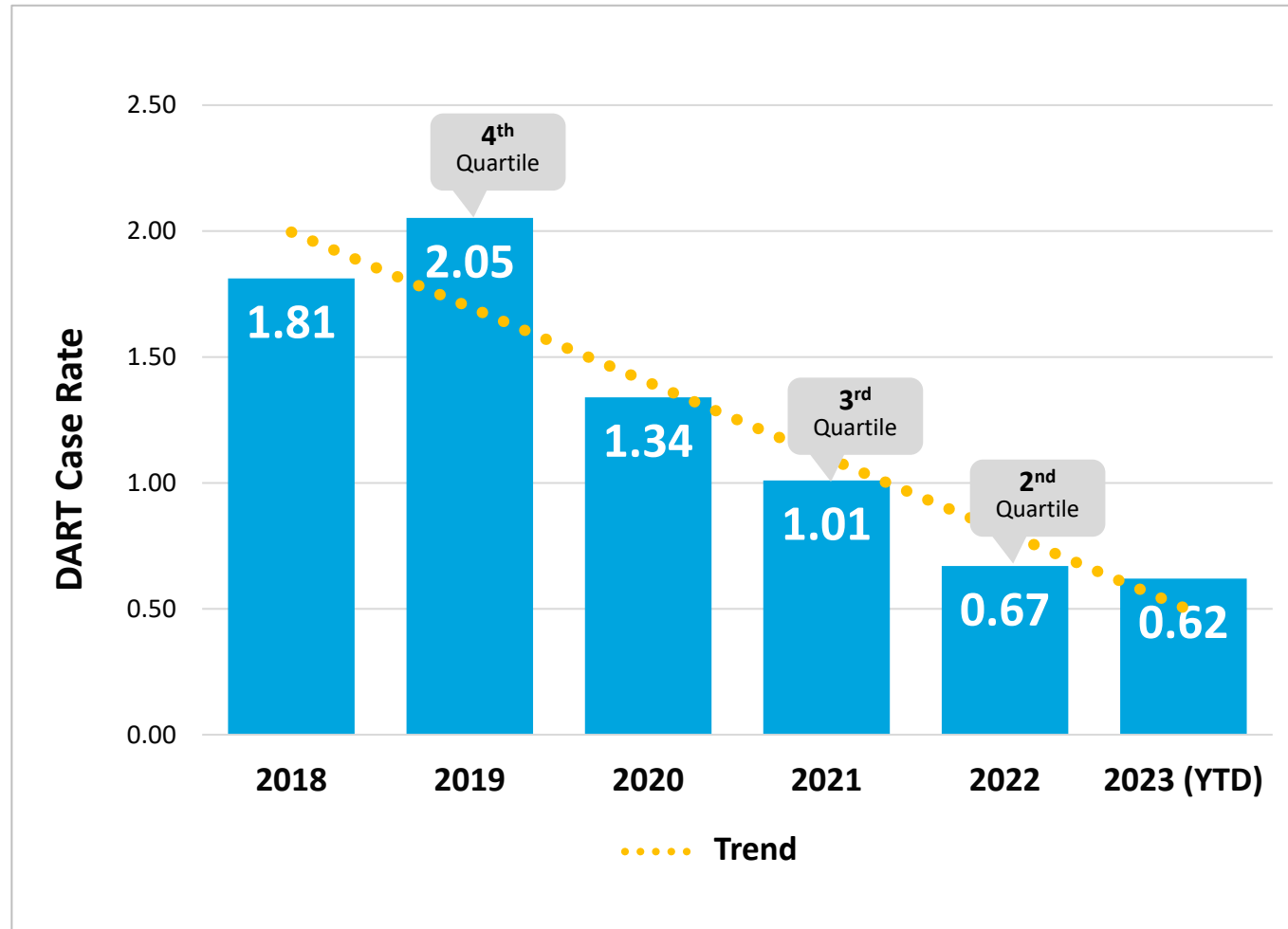
## Wildfire Safety Culture Assessment Results and Recommendations\* (2021-2022)

- **52% coworker survey response in 2022, compared to 20% in 2021**
  - **22% estimated contractor survey response in 2022, compared to 1.8% in 2021**
  - **97% of workforce survey statements showed year-over-year improvement**
  - **Safety score improvement from 4.12\*\* in 2021, to 4.39 in 2022**
  - **PG&E is an organization with leadership that values and prioritizes safety, is moving in the right direction and has opportunities for further improvement**
- ✓ Building Safety Leadership
  - ✓ Optimizing Safety Communications and Safety-Enabling Systems
  - ✓ Managing Public Risk Exposure
  - ✓ Creating Worker Training Plans
  - ✓ Mitigating Employee Impairment

*\*Recommendations are similar to 2021 \*\*Scale from 1 - 5*

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

# We Are Reducing DART Rates



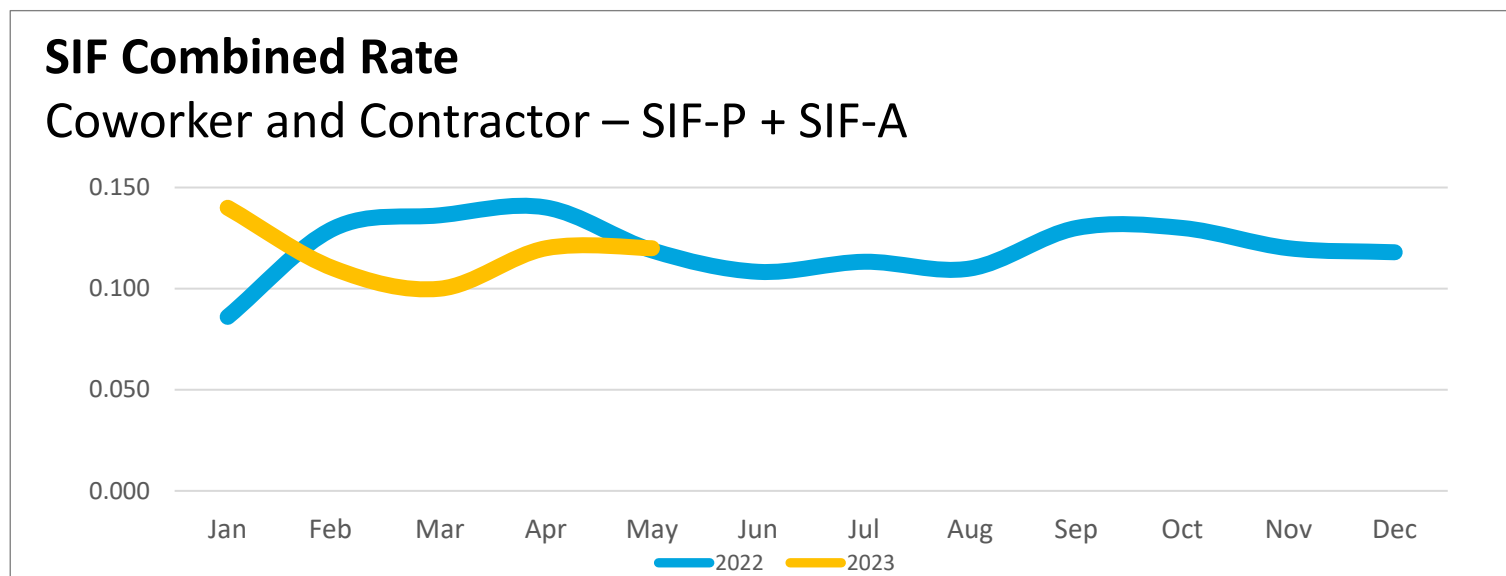
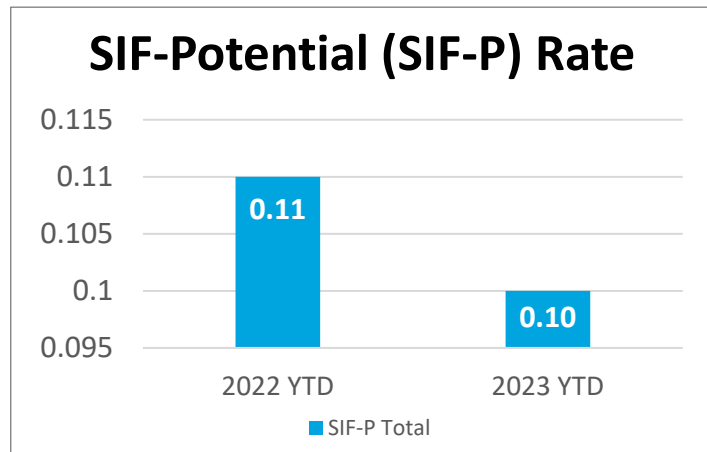
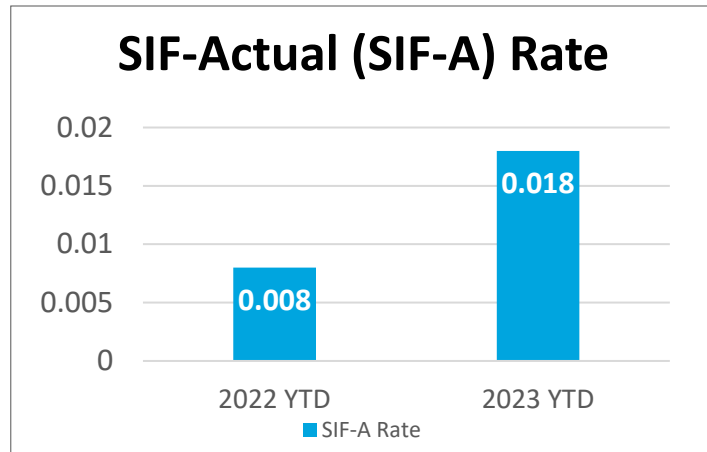
## We are also reducing the risk of ergonomic injuries with technology by:

- Analyzing ergonomic tasks with computer vision software
- Using predictive modeling for office ergonomics
- Concentrating efforts on home office ergonomic evaluations



# Serious Incidents and Fatalities (SIF)

**We are focused on addressing SIF root causes and have an unwavering focus to improve our workforce safety performance.**



## Key Actions to Address Root Causes

- Shifting the mindset to creating “fail safe” approach for high hazard work
- Performing contractor safety Quality Assurance Reviews for highest risk contractors
- Incorporating the Hazard Wheel into pre-job safety briefings to identify high energy hazards and control for them
- Utilizing our Rollover Campaign to reduce contractor rollover incidents

# A Robust Capacity Model To Prevent SIFs

Our SIF capacity model incorporates key safety programs to ensure safety is a value throughout our company.

## Keys to Life

Resources to guide daily decisions to prevent serious injuries and incidents



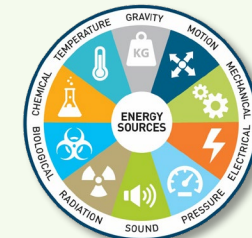
## Direct/Essential Controls

Task-level controls that directly target lethal sources of energy, prevent or mitigate exposure to risk and provide capacity to fail safely



## Hazard Wheel

Hazard recognition in the workplace to ensure coworkers and contract partners are identifying safety risks and issuing a “stop work” if needed



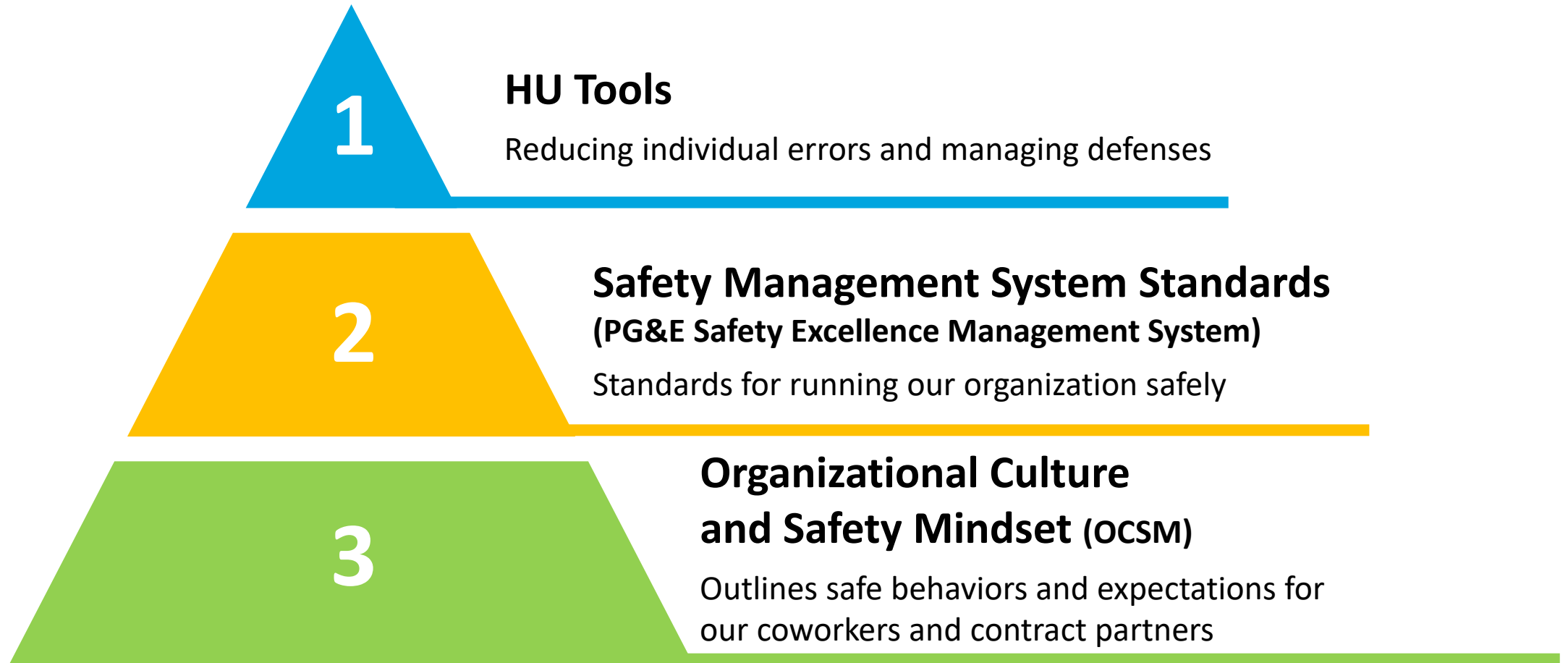
# Enterprise-Wide Safety Management System





# Enterprise-Wide Safety Management System

**Our safety management system uses safety culture as its foundation, is inspired by successful existing programs and aligns with international standards.**





# The 13 Elements of PSEMS is our Vision for Safety Standards



1. Leadership Commitment and Engagement
2. Communication and Stakeholder Engagement
3. Risk Management
4. Strategy, Objectives, and Planning
5. Operational Control
6. Training and Competence
7. Emergency Preparedness and Response
8. Incident Reporting, Investigation, and Corrective Action
9. Contractor Management and Third-party Services
10. Management of Change (MOC)
11. Information, Documentation, and Records Management
12. Performance Evaluation and Improvement
13. Assurance

# Key Safety & Operational Metrics Performance



☞ Everyone and Everything is Always Safe ☞☞





# Key Safety Metrics to Analyze Operational Performance

METRICS	2022 EOY ACTUAL	MAY 2023 YTD ACTUAL	PERFORMANCE
<b>Electric 911 emergency response</b> (within 60 minutes)	98.23%	<b>96.15%</b>	<b>Top</b> DECILE
<b>Total dig-ins reduction rate</b>	0.94	<b>0.93</b>	<b>1st</b> QUARTILE
<b>Gas customer emergency response</b>	19.9 minutes	<b>20.2 minutes</b>	<b>1st</b> QUARTILE
<b>DCPP reliability and safety indicator</b>	97	<b>100</b>	<b>1st</b> QUARTILE
<b>Large overpressure events</b>	9	<b>5</b>	<b>44%</b> CHANGE VS. 2022
<b>Safe Dam Operating Capacity (SDOC)</b>	97%	<b>97.4%</b>	<b>0.4%</b> CHANGE VS. 2022

May 2023 YTD Actual vs. 2022 EOY Actual

Performance Improvement

Performance Decline

# Wildfire Safety



☞ Catastrophic  
Wildfires  
Shall Stop ☞☞

## 2022

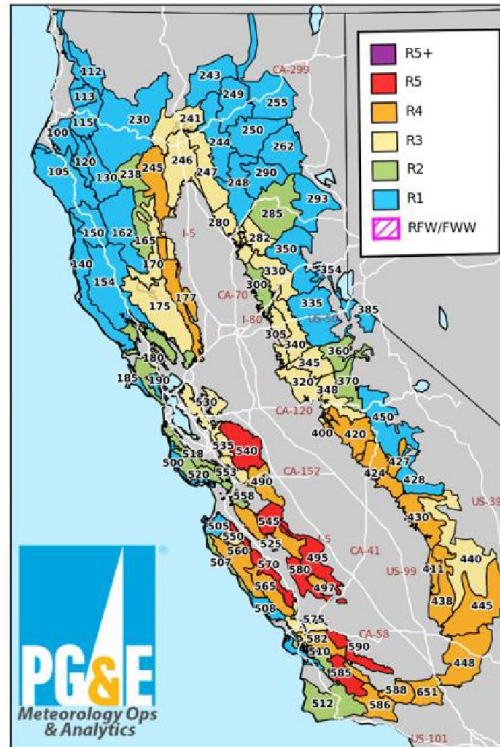
# 31%

more days in R3+ conditions

# 2<sup>nd</sup>

driest year in the last 128 years through peak wildfire season

PG&E Utility Fire Potential Index Ratings



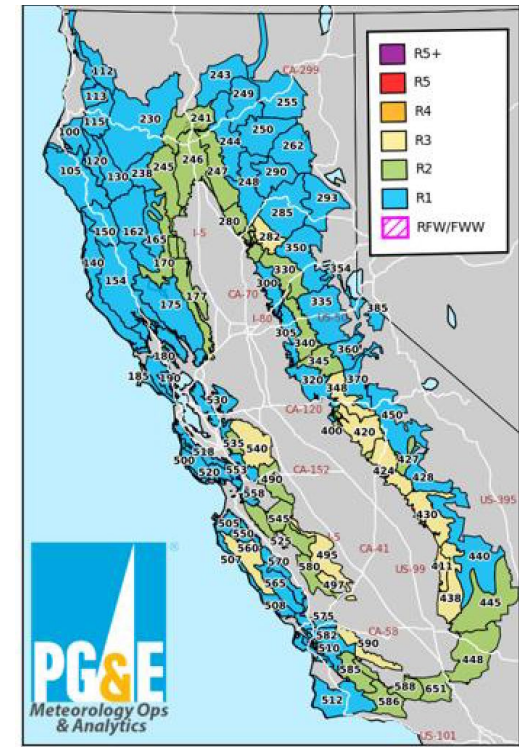
Valid for 05/22/2022

## 2023

Start of 2023 Wildfire Season delayed due to winter storms.

However, there will be an increase in the density of the dry grass crop later in the year.

PG&E Utility Fire Potential Index Ratings



Valid for 05/22/2023

## Our Wildfire Mitigation Plan Goals

**Our 2023-2025 Wildfire Mitigation Plan goals will help us meet our stand that “Catastrophic Wildfires Shall Stop” using our Layers of Protection approach.**



Construct, maintain, and operate our electrical lines and equipment in a manner that will **minimize the risk of catastrophic wildfire** posed by them.



Implement programs to **limit customer disruption from our wildfire mitigation efforts.**



Continue to **enhance our situational awareness and intelligence capabilities.**

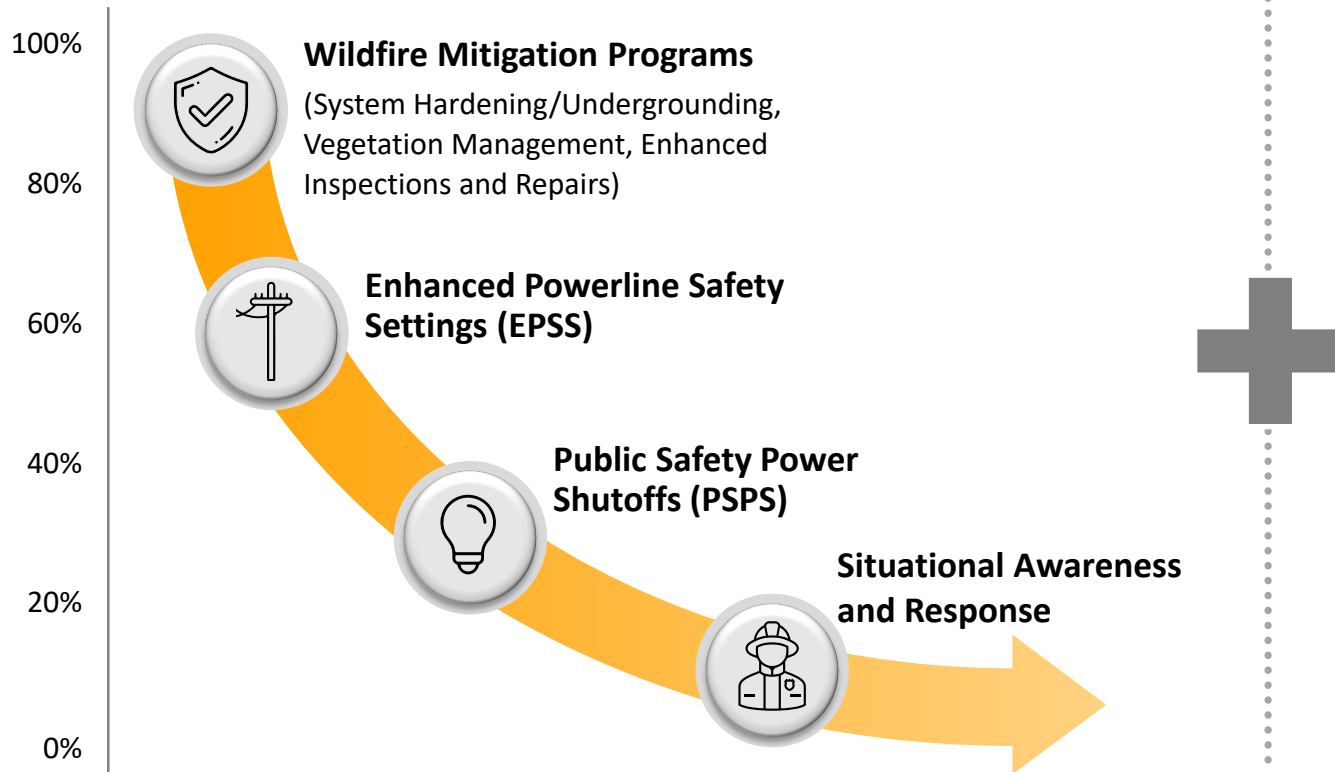


# Building on Layers of Protection

We are building on existing layers of protection to reduce more wildfire risk in 2023.

**90%** reduction in wildfire risk from PG&E equipment\*

**94%** reduction in wildfire risk from PG&E equipment in 2023\*



## New or expanded measures in 2023:

- ✓ Downed Conductor Detection
- ✓ Partial Voltage Force Out
- ✓ Transmission Operational Controls
- ✓ Transmission Pole Clearing

\*Based on a comparison in the Utility's GRC testimony of the wildfire risk score for a baseline risk level to a risk level reflecting the Utility's mitigation work. Risk scores are calculated using the scoring methodology established by the CPUC in the Safety Model Assessment Proceeding, which reflects the frequency with which various risks are expected to occur and the potential safety, reliability, and financial impacts of varying degrees of wildfire severity. Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.



# Key Wildfire Mitigation Programs Help Us Achieve Safety Goals



## Undergrounding Our Lines

Undergrounding powerlines to reduce wildfires caused by equipment

2019 COMPLETED

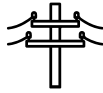
0

MILES COMPLETED\*\*\*

PROGRAM TO DATE

268

MILES COMPLETED\*\*\*



## System Hardening\*\*

Strengthening our grid by installing stronger poles, covered powerlines and undergrounding

171

LINE MILES HARDENED

1,247

LINE MILES HARDENED



## Sectionalizing Devices and Transmission Switches

Separating the grid into smaller sections and narrowing the scope of Public Safety Power Shutoffs

241

DEVICES INSTALLED

1,320

DEVICES INSTALLED



## Enhanced Vegetation Management\*

Addressing vegetation that poses a higher potential for wildfire risk

2,498

LINE MILES COMPLETED

8,283

LINE MILES COMPLETED



## High-Definition Cameras

Monitoring and responding to wildfires through increased visibility

133

CAMERAS INSTALLED

602

STATIONS INSTALLED



## Weather Stations

Better predicting and responding to severe weather threats

627

STATIONS INSTALLED

1,424

STATIONS INSTALLED



PROGRAM TRANSITIONED



PROGRAM COMPLETED



PROGRAM COMPLETED

\*Has been integrated into the distribution vegetation management program.

\*\*Includes 10,000-Mile Undergrounding Program miles, reported collectively in our Wildfire Mitigation Plan

\*\*\*Completed as part of the 10,000-Mile Undergrounding Program, launched in 2021





# How We Prioritize Our Wildfire Safety Efforts

Programs	Prioritization Approach	Estimated Cost (Per Year)	Reliability	Effectiveness *	2023 Risk Reduction ^	Public Safety	RSE
<b>EPSS</b>	<ul style="list-style-type: none"> <li>Capability implemented across all circuits in HFRA and adjacent buffer areas</li> <li>Used when wildfire risk is elevated</li> </ul>	<ul style="list-style-type: none"> <li>\$40M capital</li> <li>\$130M expense</li> <li>Initial deployment cost is low</li> <li>Ongoing operating cost is medium</li> </ul>	<ul style="list-style-type: none"> <li>Lower reliability</li> <li>Improvements made year-over-year to improve reliability</li> </ul>	<b>68%</b>	<b>64%</b>	<ul style="list-style-type: none"> <li>Impact to Wildfire Risk: High</li> <li>Impact to Reliability AFN, customers</li> </ul>	<ul style="list-style-type: none"> <li>106</li> </ul>
<b>PSPS</b>	<ul style="list-style-type: none"> <li>Capability across all circuits in HFRA</li> <li>Used when wildfire risk is elevated during high-wind days</li> </ul>	<ul style="list-style-type: none"> <li>\$20M event</li> <li>\$40M non-event</li> <li>Initial deployment cost is low</li> <li>Ongoing operating cost is medium</li> </ul>	<ul style="list-style-type: none"> <li>Lower reliability</li> <li>Improvements made year-over-year to improve reliability</li> </ul>	<b>78%</b>	<b>25%</b>	<ul style="list-style-type: none"> <li>Impact to Wildfire Risk: High</li> <li>Impact to Reliability, AFN customers</li> </ul>	<ul style="list-style-type: none"> <li>RSE not calculated per WSD-002, that was issued by the CPUC, as the full societal impact will not be captured</li> </ul>
<b>Undergrounding</b>	<ul style="list-style-type: none"> <li>Targets riskiest 10,000 miles of 25,000 total HFRA miles</li> <li>Wildfire risk models with a feasibility overlay provide prioritization approach</li> </ul>	<ul style="list-style-type: none"> <li>\$1,300M</li> <li>Upfront cost is high (capital)</li> <li>Lifetime operating cost is low</li> </ul>	<ul style="list-style-type: none"> <li>Highest reliability</li> </ul>	<b>99%</b>	<b>1%</b>	<ul style="list-style-type: none"> <li>Best benefits for public safety and reliability overall</li> </ul>	<ul style="list-style-type: none"> <li>5 (2023 – 6 (2026)</li> <li>Varies by project</li> </ul>
<b>Overhead Covered Conductor</b>	<ul style="list-style-type: none"> <li>Targets the remaining 15,000 riskiest HFRA miles</li> <li>Wildfire risk models guide prioritization approach</li> </ul>	<ul style="list-style-type: none"> <li>\$70M</li> <li>Upfront cost is medium</li> <li>Lifetime operating cost is medium</li> </ul>	<ul style="list-style-type: none"> <li>Medium reliability</li> </ul>	<b>67%</b>	<b>.1%</b>	<ul style="list-style-type: none"> <li>Medium benefits for public safety and reliability overall</li> </ul>	<ul style="list-style-type: none"> <li>6 (2023) – 5 (2026)</li> <li>Varies by project</li> </ul>
<b>Vegetation Management</b>	<ul style="list-style-type: none"> <li>Compliance-driven</li> <li>Wildfire risk models guide prioritization approach for hazard tree work</li> </ul>	<ul style="list-style-type: none"> <li>\$800M+ †</li> <li>Ongoing cost that will increase over time</li> </ul>	<ul style="list-style-type: none"> <li>Limited reliability benefit</li> </ul>	<b>~7% †</b>	<b>1% †</b>	<ul style="list-style-type: none"> <li>Limited public safety benefit</li> </ul>	<ul style="list-style-type: none"> <li>4 †</li> </ul>
<b>Downed Conductor Detection</b>	<ul style="list-style-type: none"> <li>Targets low current, high impedance faults not fully mitigated by EPSS</li> <li>Used in conjunction with EPSS</li> </ul>	<ul style="list-style-type: none"> <li>\$41M capital</li> <li>Ongoing operating cost is medium</li> </ul>	<ul style="list-style-type: none"> <li>Lower reliability</li> </ul>	<b>12%</b>	<b>3%</b>	<ul style="list-style-type: none"> <li>Impact to Wildfire Risk: Medium-High</li> <li>Addresses known gap in EPSS protection</li> </ul>	-
<b>Partial Voltage Force Out</b>	<ul style="list-style-type: none"> <li>Targets low and very low current faults not fully mitigated by EPSS</li> <li>Used when wildfire risk is elevated during hot/dry summer days</li> </ul>	<ul style="list-style-type: none"> <li>&lt;\$1M expense</li> <li>Ongoing operating cost is low</li> </ul>	<ul style="list-style-type: none"> <li>Lower reliability</li> </ul>	-	-	<ul style="list-style-type: none"> <li>Additional layer of protection to further reduce wildfire risk and improve public safety</li> </ul>	-

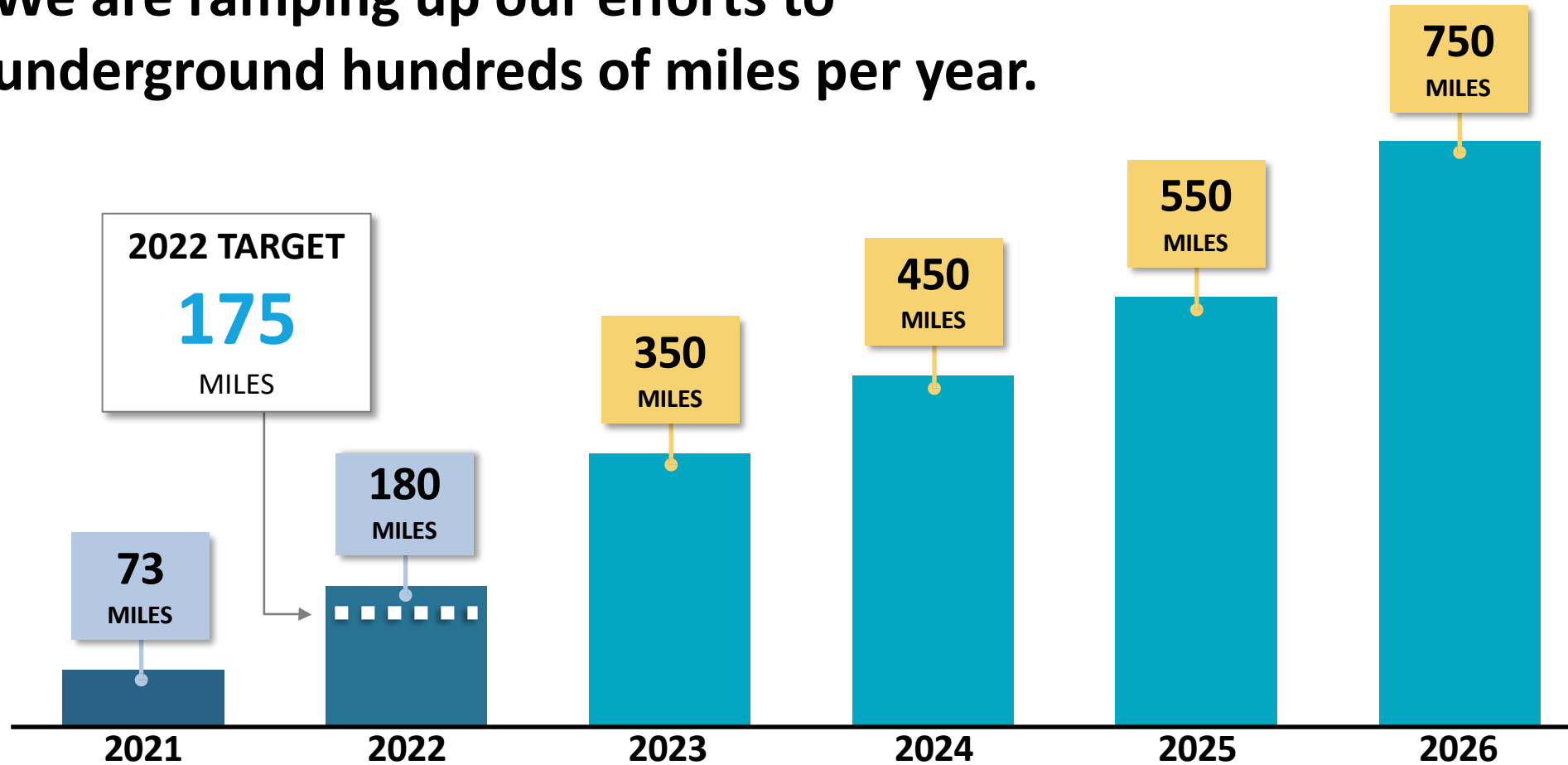
\*Based on the most accurate and current empirical data. ^Additional programs contribute to overall risk reduction. † Enhanced Vegetation Management (EVM), program transitioned in 2023; cost as of 2022.

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



# Ramping Up Our Undergrounding Efforts

We are ramping up our efforts to underground hundreds of miles per year.



Pending California Public Utilities Commission (CPUC) and California Office of Energy Infrastructure Safety (OEIS) approval.



# Undergrounding is the Best Long-term Solution For Our Customers and Our Hometowns

## Undergrounding Benefits

**70%**

Sustained HFRA risk reduction once program is complete

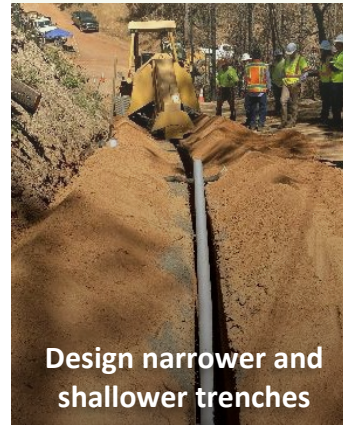
**99%**

Ignition risk reduction in undergrounded locations compared to 67% reduction for overhead hardening

**\$3.3M**

Undergrounding cost per mile target for 2023, anticipated to be \$2.8M per mile by 2026

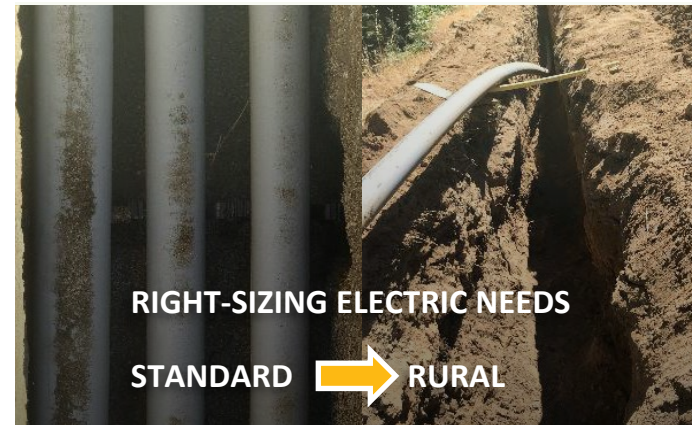
## Optimizing Design and Construction Standards



Design narrower and shallower trenches



Reduce boxes per mile



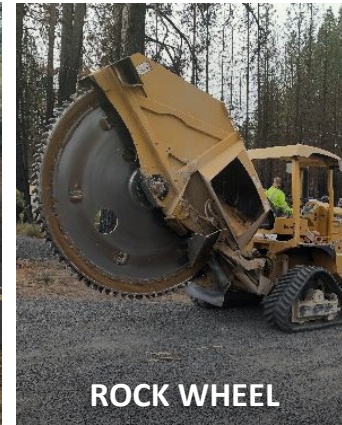
RIGHT-SIZING ELECTRIC NEEDS

STANDARD → RURAL

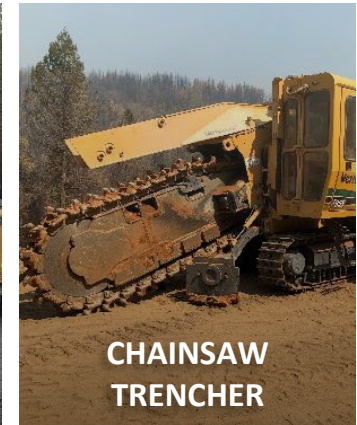
## Deploying More Efficient Construction Methods



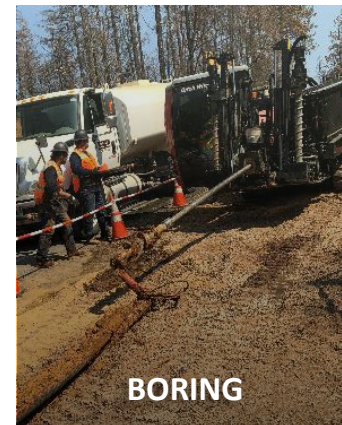
PLOW



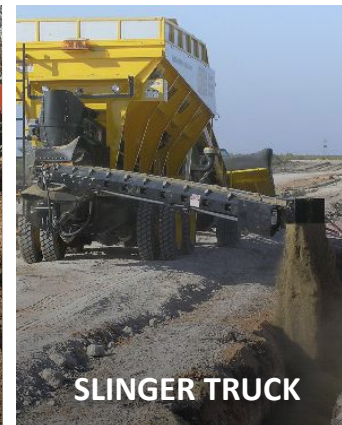
ROCK WHEEL



CHAINSAW TRENCHER



BORING



SLINGER TRUCK



VOLUMETRIC MIXER



## Our Efforts Reduced Ignitions In 2022

**Despite 31%  
more days in R3+  
conditions last  
year, we saw a:**

**68%**  
reduction in  
ignitions\*

**99%**  
reduction in  
ignition impact  
as measured by  
fire size\*\*

*Data is approximate; \*Based on 2022 performance for CPUC-reportable ignitions in HFTD compared to 2018-2020 weather-normalized performance; \*\*Relative to 2018-2020*



# EPSS Improvements: Turning Learnings into Action

By turning 2021 learnings into action, we simultaneously expanded and improved the EPSS Program last year.

## Key 2022 improvements based on 2021 learnings:

- Engineered and installed coordinated settings
- Developed and executed circuit-level enablement to maximize risk reduction and reliability
- Refined circuit patrols and better identified fault locations
- Leveraged the Regional Service Model to institute daily outage reviews locally where trends and actions to reduce outages were performed

	2021	2022	Improvements
Average outage length	~7 hrs	<3 hrs	<b>56%</b> decrease
Average customers impacted per outage	~1,100	877	<b>20%</b> decrease
Customers protected	~380,000	~1.82M	<b>374%</b> expansion
Miles protected	45% of HFRA	100% of HFRA	<b>122%</b> increase

Data is approximate

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



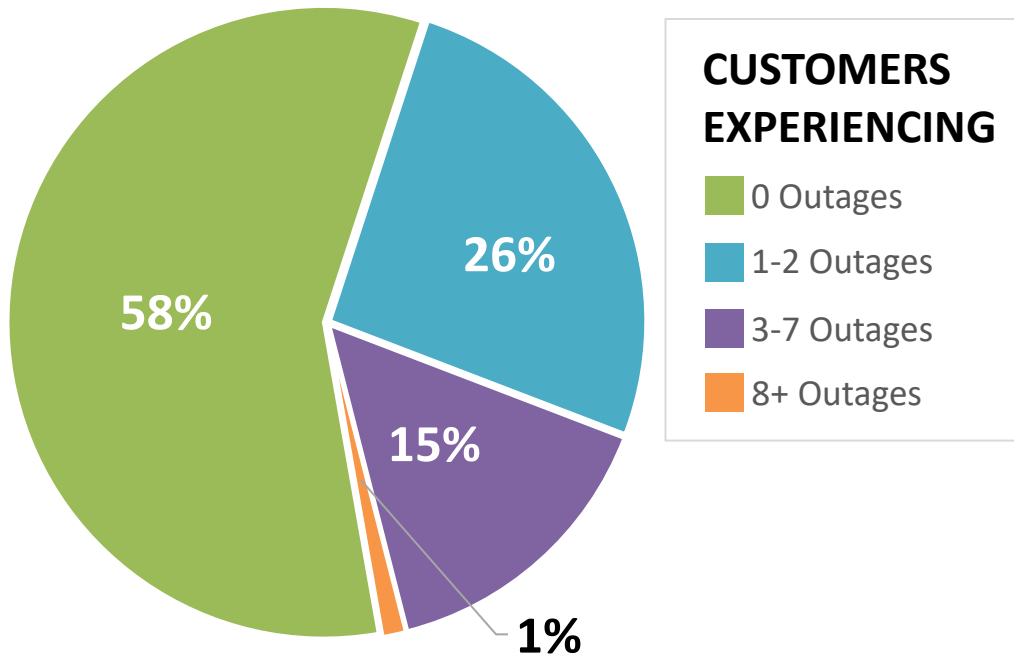
# Minimizing Customer Impacts

## 2022 EPSS Performance

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



**1.82M** Customers Protected



### CUSTOMERS EXPERIENCING

- 0 Outages
- 1-2 Outages
- 3-7 Outages
- 8+ Outages

## 2023 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:**

- Proactive animal mitigation consisting of bird retrofitting and critter abatement
- Proactive expanded vegetation management work
- Comprehensive reliability work push on targeted circuit protection zones

**We have also expanded access to customer resiliency programs.**

Data as of 1/30/23

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



## Year-Over-Year PSPS Comparison

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

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



# Helping More Customers Access Support

Program	Total Inception-To-Date	Program Penetration in HFTD and EPSS Circuits	2023 Targets
<b>Portable Battery Program (PBP)</b>	18,627 batteries delivered	<ul style="list-style-type: none"> <li>41% of MBL customers in HFTD received portable batteries (14,341 customers out of ~35,000 MBL customers in HFTD based on 2020 - 2022 eligibility)</li> <li>11.7% of MBL participants on EPSS circuits (12,265 MBL customers out of ~105,000 on EPSS circuits)</li> <li>2023 targeting next tranche of customers based on new eligibility criteria (MBL or Self-Identified Vulnerable (SIV) 5+ EPSS in 2022 or 1+ PSPS event in 2021)</li> </ul>	<b>4,700 batteries</b>
<b>Disability Disaster Access and Resources (DDAR)</b>	<ul style="list-style-type: none"> <li>4,391 batteries delivered</li> <li>7,806 assessments</li> <li>898 hotels*</li> <li>1,248 food vouchers*</li> <li>86 gas cards*</li> <li>32 transportation*</li> </ul>	<ul style="list-style-type: none"> <li>2,272 customers have received at least one portable battery (program eligibility criteria includes MBL customers, customers with disabilities and independent living needs living in HFTD or experienced 2+ PSPS since 2020)</li> </ul>	<b>800 batteries</b>
<b>Self-Generation Incentive Program (SGIP) Interconnections</b>	4,746 Equity Resiliency Budget (ERB) projects interconnected 16,234 other SGIP projects interconnected	<ul style="list-style-type: none"> <li>6,557 total SGIP interconnected customers in HFTD</li> <li>12,138 total SGIP interconnected customers on EPSS circuits</li> </ul>	<b>950 ERB</b> <b>1,850 other SGIP</b>
<b>Fixed Power Solutions: Residential Storage Initiative</b>	88 permanent battery storage installations	<ul style="list-style-type: none"> <li>88 customers, program eligibility focuses on CEMI-8+ 2022 EPSS MBL or income-qualified CARE customers</li> </ul>	<b>650 permanent battery storage installations</b>
<b>Generator and Battery Rebate Program (GBRP)</b>	4,684 rebates paid	<ul style="list-style-type: none"> <li>3,577 customers received rebates in HFTD</li> <li>4,099 customers received rebates on EPSS circuits</li> </ul>	<b>2,500 rebates</b>
<b>Backup Power Transfer Meter Program</b>	2,477 transfer meters installed	<ul style="list-style-type: none"> <li>1,881 customers received a BPTM in HFTD</li> <li>2,318 customers received a BPTM on EPSS circuits</li> </ul>	<b>3,000 installations</b>

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

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





# Lower-Cost Technologies Help us Further Reduce Ignition Risk and Mitigate Reliability Impact

✓ **Partial Voltage Detection** detects and locates a wire down condition within minutes, reducing the amount of time a line may be energized while down.

✓ **Downed Conductor Detection** detects and isolates high impedance (or low current) faults before an ignition can occur.

✓ **Early Fault Detection (EFD)**, early detection of failing equipment with the potential to detect vegetation encroachment.

✓ **Ground-Level Distribution Systems**, developmental technology that places powerlines in fire-proof casing at ground level, without the need for trenching. We are planning to pilot this technology this year.

✓ **Backup Power Transfer Meter**, a free program that allows customers to safely connect generator power during emergency outages.

✓ **XPrize**, a four-year competition aimed at developing innovative technologies to improve the detection and suppression of destructive wildfires. PG&E is a co-title sponsor.

**Thank You**



# Appendix





# Customer Support Provided

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

*\*Individuals who are at an increased risk of harm to their health, safety and independence during a PSPS)  
Some of the measures included in this presentation are contemplated as additional precautionary measures intended to further reduce the risk of wildfires.*