

Community Wildfire Safety Program

Sumeet Singh

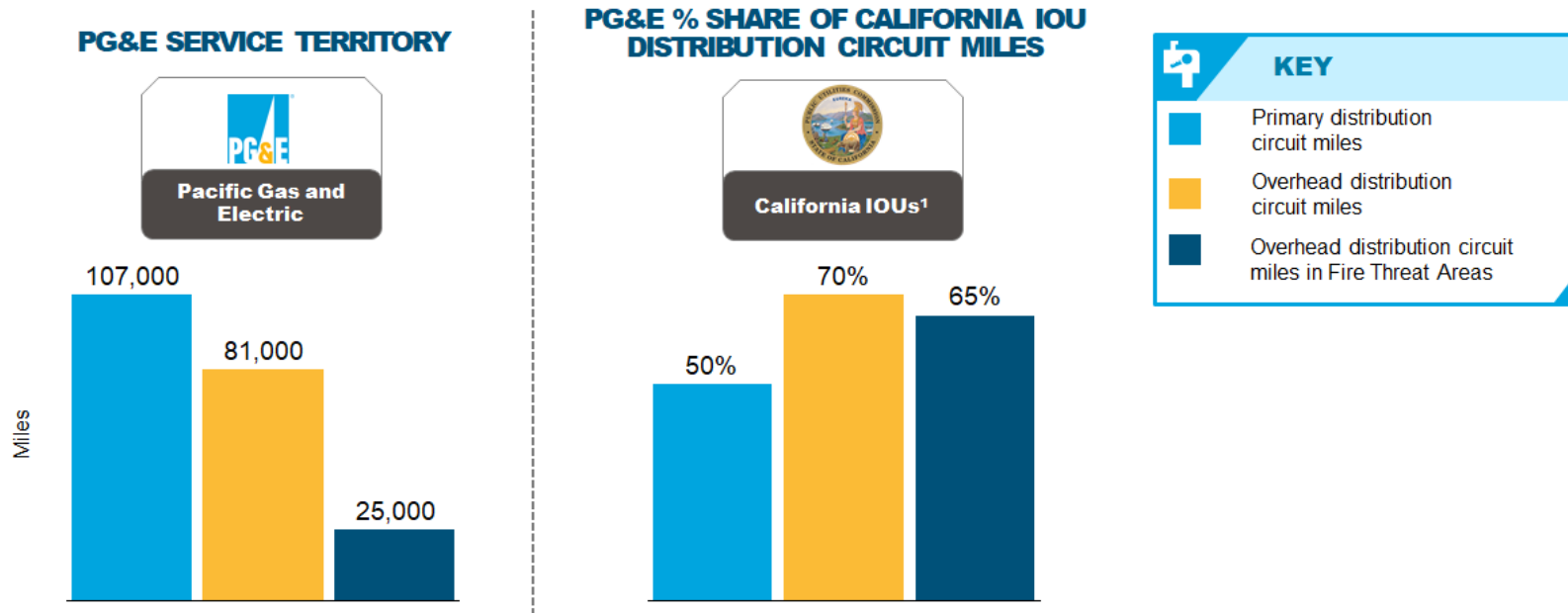
Vice President, Community Wildfire Safety Program



Together, Building
a Better California

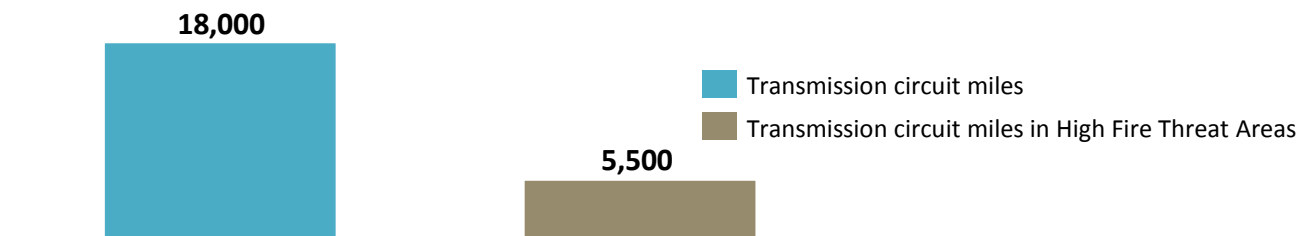
PG&E has the largest population of overhead conductors in high fire-threat areas

Distribution Circuit Miles (PG&E)



Note: (1) California IOUs is comprised of PG&E, SCE, and SDG&E. PG&E Fire Threat Area mileage is defined as HFTD Tier 3, 2, and Zone 1. SCE Fire Threat Area is defined as High Fire Risk Area (HFRA), which contains Tier 3 and Tier 2 areas and additional areas selected by SCE. SDG&E Fire Threat Area is defined as Fire Threat Zone as established in its 2016 RAMP Filing. Sources: PG&E: RAMP Filing 2017, company data; SCE: Grid Safety and Resiliency Program, September 2018; SDG&E: RAMP Filing 2016

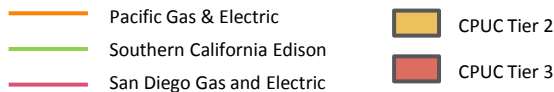
Transmission Circuit Miles (PG&E)



Fire Risk Areas

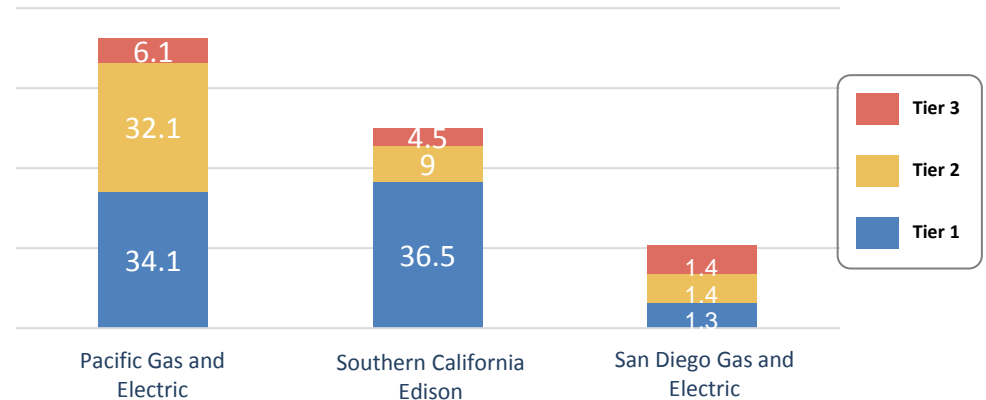
PG&E's service territory has larger exposure to Tier 2 and Tier 3 areas

FIRE RISK AREA BY UTILITY



Sources: PG&E: Company data; SCE: Grid Safety and Resiliency Program, September 2018; SDG&E PG&E analysis

UTILITY FOOTPRINT BY FIRE RISK AREA, SQUARE MILES ('000s)



Observations

- 52% of PG&E's service territory is classified as Tier 2 or Tier 3
- PG&E has approximately 38,000 sq. mi. of service area in Tier 2 and 3, accounting for roughly 70 percent of all high fire threat area in California.

Community Wildfire Safety Program



REAL-TIME MONITORING AND INTELLIGENCE

- Coordinating prevention and response efforts by monitoring wildfire risks in real time from our **Wildfire Safety Operations Center**
- **Expanding our network of PG&E weather stations** to enhance weather forecasting and modeling
- Supporting the **installation of new high-definition cameras** in high fire-threat areas



NEW AND ENHANCED SAFETY MEASURES

- Further enhancing vegetation management efforts to **increase focus on vegetation that poses a higher potential for wildfire risk**
- **Conducting accelerated safety inspections** of electric infrastructure in high fire-threat areas
- **Disabling automatic reclosing of circuit breakers and reclosers** in high fire-risk areas during wildfire season
- **Proactively turning off electric power for safety (Public Safety Power Shutoff)** when extreme fire danger conditions are forecasted



SYSTEM HARDENING AND RESILIENCY

- Installing **stronger and more resilient poles** and **covered power lines**, along with **targeted undergrounding**
- **Upgrading and replacing electric equipment and infrastructure** to further reduce wildfire risks
- **Working with communities to develop new resilience zones** to provide electricity to central community resources during a Public Safety Power Shutoff event



Real-Time Monitoring and Intelligence

MONITORING wildfire risks in real time from our
24/7 Wildfire Safety Operations Center
and coordinating **prevention and response efforts**



INSTALLING

~1,300 new weather stations by **2022**

Data available at mesowest.utah.edu

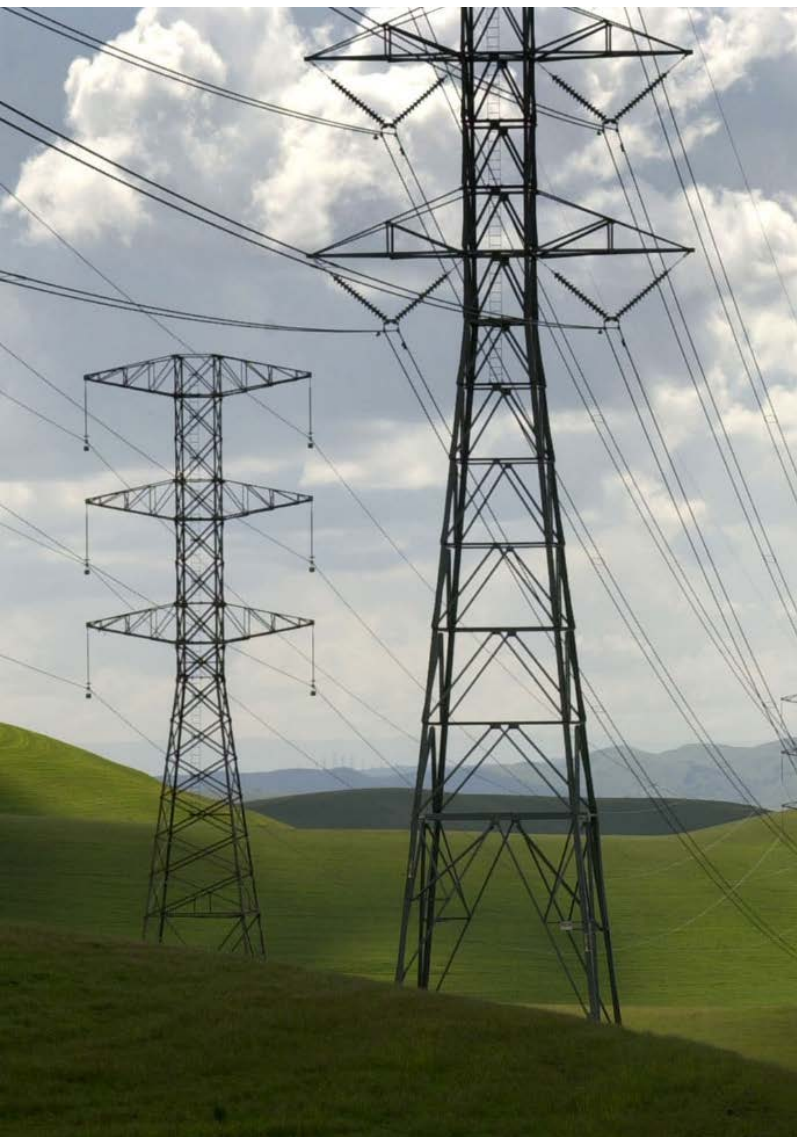


SUPPORTING the installation of

~600 high-definition cameras by **2022**

Images available at alertwildfire.org

Wildfire Safety Inspections

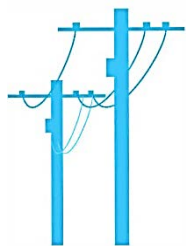


As part of our enhanced wildfire safety efforts, implemented following the 2017 and 2018 wildfires as additional precautionary measures intended to further reduce wildfire risks, **we are conducting accelerated safety inspections of electric infrastructure in areas of higher wildfire risk (Tier 2 and Tier 3).**

- **We are conducting comprehensive inspections of electric towers and poles** through visual and aerial inspections.
- This work is being done as part of our Community Wildfire Safety Program, and is **in addition to our routine inspections and maintenance** programs.
- We are inspecting **substations and transmission and distribution lines** in high fire-threat areas.

Inspections Overview

As part of our enhanced wildfire safety efforts, **we implemented accelerated safety inspections of electric infrastructure in areas of higher wildfire risk.**



Accelerated inspections of transmission and distribution poles and towers as well as substations in high fire-threat areas



Visual inspections (ground and/or climbing) will be performed by crews of up to four people



Aerial inspections by drones will complement and further enhance inspections



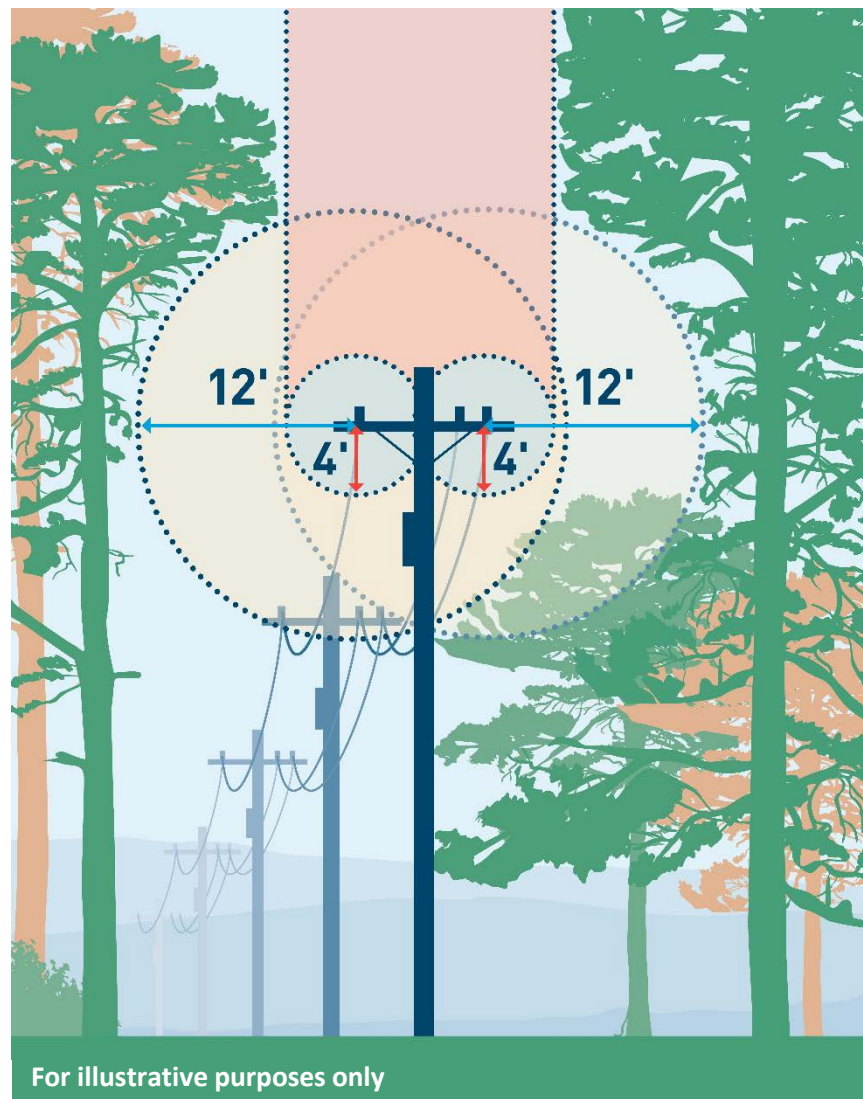
Helicopters may also be used for inspections or to deliver crews to remote locations

We are taking action right away to address any immediate risk to public safety found during the accelerated inspections

Enhanced Vegetation Management

We are **expanding and enhancing vegetation management** to increase focus on vegetation that poses a higher potential for wildfire risk

- Our enhanced vegetation management work includes the following:
 - ✓ **Meeting and exceeding state standards** for minimum clearances around the power line
 - ✓ **Addressing overhanging limbs and branches** directly above and around the lines
 - ✓ **Removing dead and dying trees** as well as specific tree species that have more frequently fallen into PG&E lines and caused an ignition
- We are working to complete this important safety work **in high fire-threat areas** over the next several years



System Hardening and Resiliency

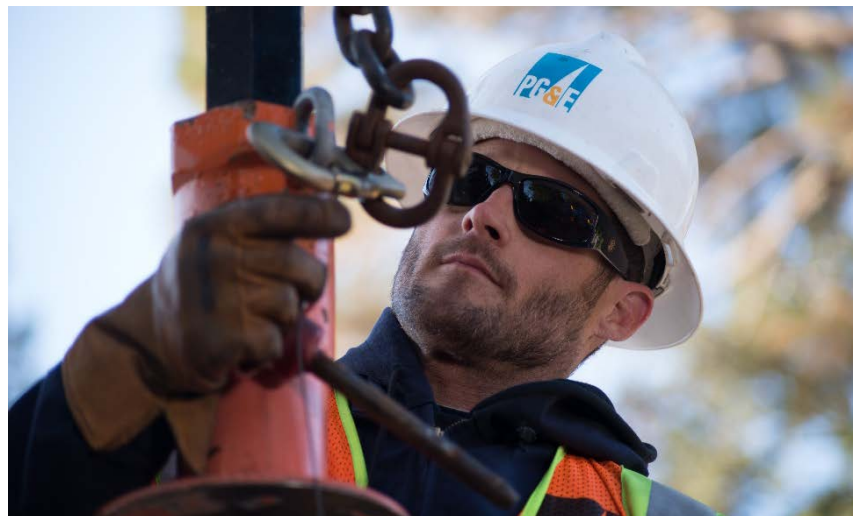
Installing stronger and more resilient poles and covered power lines across approximately 7,100 line miles of highest fire-risk areas

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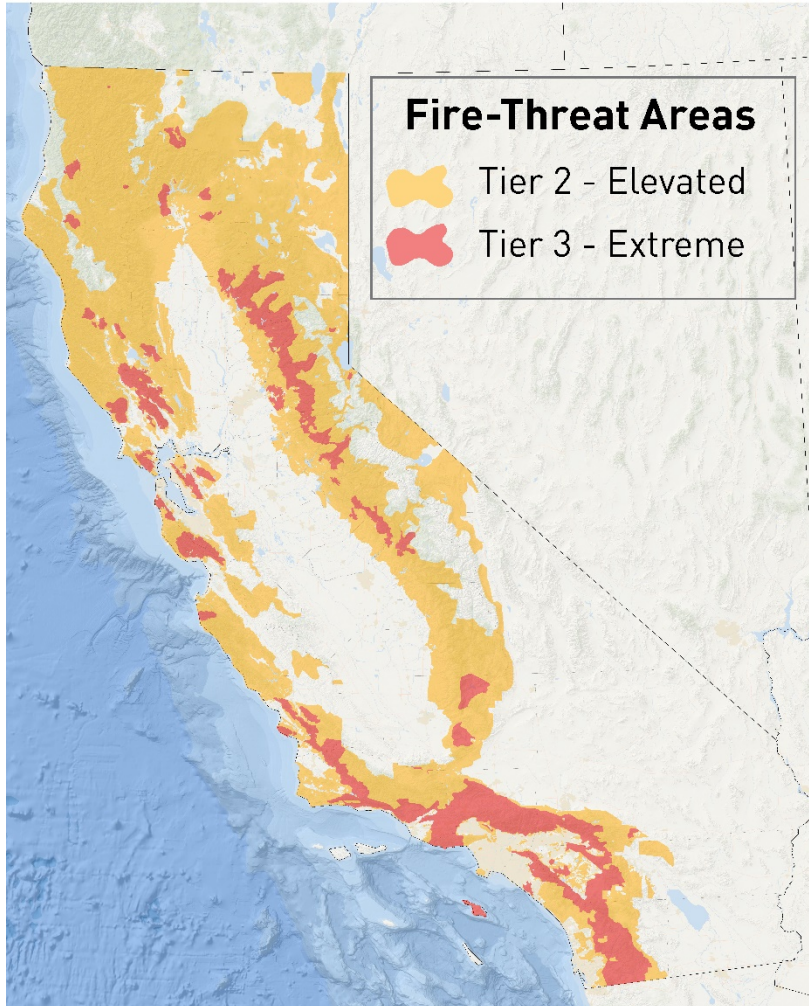
Replacing equipment to further reduce risk to our system and tailoring upgrades based on terrain and weather conditions using more granular analysis of fire-prone regions

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Piloting new resilience zones to allow PG&E to provide electricity to central community resources serving local customers during a Public Safety Power Shutoff (PSPS) event



Public Safety Power Shutoff (PSPS)



Source: California Public Utilities Commission

- Beginning with the 2019 wildfire season, we are expanding our Public Safety Power Shutoff program to include **all electric lines that pass through high fire-threat areas – both distribution and transmission.**
- The most likely electric lines to be considered for shutting off for safety will be those that pass through **areas that have been designated by the CPUC as at elevated (Tier 2) or extreme (Tier 3) risk for wildfire.**
- Because the energy system **relies on power lines working together** to provide electricity, **any of PG&E's more than 5 million electric customers could have their power shut off.**