

Portland General Electric Wildfire Mitigation Journey

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PGE at a glance

Quick facts

- Vertically integrated electric utility encompassing generation, transmission, and distribution
- Serving more than 900,000 retail customers within a service area of approximately 1.9 million residents
- Roughly half of Oregon's population lives within PGE service area, encompassing 51 incorporated cities
- Roughly two-thirds of Oregon's commercial and industrial activity occurs in PGE service area





PGE's Wildfire Mitigation Journey

20	4	
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- Provided Monthly Seasonal Outlooks from late Spring to Fall
- Initiated development of a Wildland Fire Guide

- Initial fire risk assessment model and risk evaluation
- Evaluated PSPS in Tier
 III risk area

2019

 Initiated Annual Inspections in risk

2020

- Enhanced fire risk model
- Modified approach to design and construction in highrisk areas

Mi ap ch to

- yhupdated
 - High Fire Risk Zones

2021

• First Wildfire

- Expanded situation
 awareness
- 26 weather stations
- 2 HD AI Cameras

2022

• 2022 WMP approved

Updated risk

 assessment, which
 resulted in modifying
 existing High Fire Risk
 Zones and expanding
 from 7 to 10

- Expanded situational awareness capabilities
- 23 additional weather stations
- 24 HD AI Cameras
- Grid Hardening
- Engagement strategies (WMP, Public Safety Partners, Information and Awareness)

2023

- 2023 WMP submitted
- Updated risk
- assessment, which resulted in minor modifications to existing
- High Fire Risk Zones
- Expanding situational awareness capabilities
- 30 additional remote automated weather stations
- 6 HD Al-enhanced cameras
- Grid hardening
- Expanding engagement strategies (WMP, Public Safety Partners, Information and
- Awareness)



Oregon's legislative and regulatory actions

Recognizing the rapidly increasing threat of wildfire due to climate change, Oregon has taken an allhands on deck approach with several significant actions in the last four years to reduce wildfire risk throughout the state.

2019: Establishment of Governor's Wildfire Response Council tasked with reviewing Oregon's current model for wildfire prevention, preparedness and response. Work resulted in a recommendation report for action to improve the state's wildfire prevention and response.

2020: Governor Brown issues EO 20-04 which, among other things, directs the Oregon Public Utility Commission (OPUC) to evaluate utility risk-based wildfire protection plans consistent with the Wildfire Response Council's report.

2021: Oregon Legislature passes SB 762, the state's comprehensive wildfire bill based on the recommendations of the Wildfire Council. The bill included direction to ten state agencies, including the OPUC. Electric utilities are required to submit risk-based wildfire mitigation plans to their governing body which includes wildfire risk analysis mapping and mitigation investments.

2022: OPUC completes rulemaking related to the implementation of SB 762.

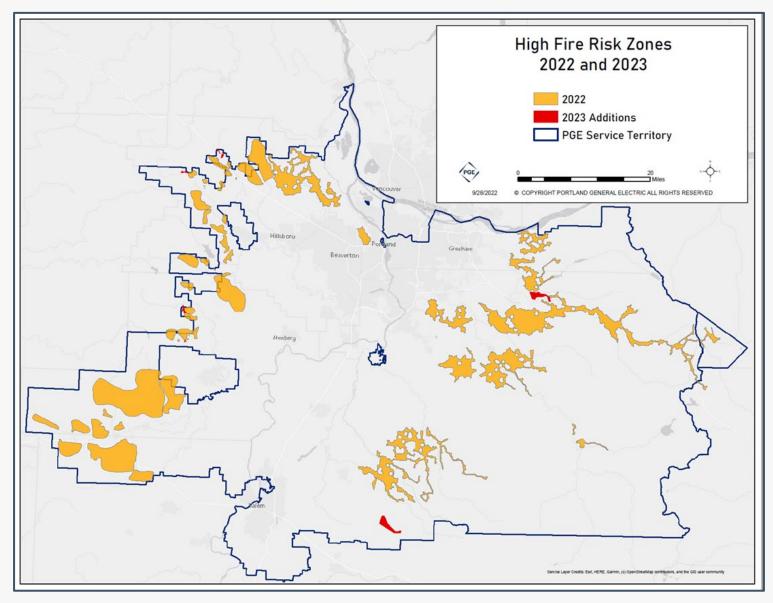


Purpose of PGE's Wildfire Mitigation Plan (WMP)

- Prioritize public and employee safety
- Reduce the risk of wildfire ignitions from PGE assets
- Guide PGE's Fire Season operations
- Identify and prioritize wildfire system hardening and resiliency activities
- Communicate and collaborate effectively with Public Safety Partners, stakeholders, and customers
- Implement PSPS events with efficiency, when necessary, and with broad public awareness



High Fire Risk Zones (2023)

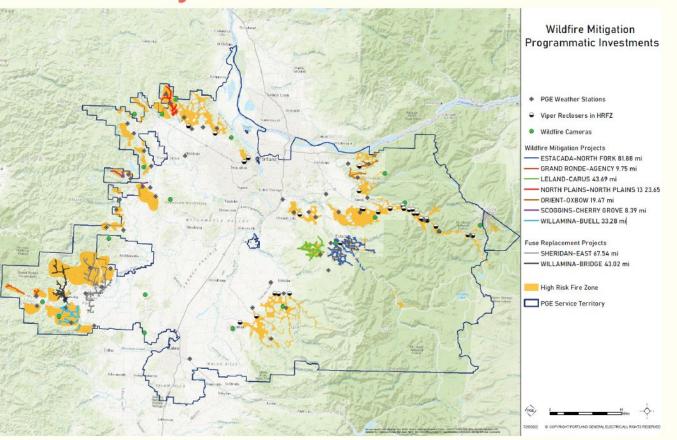


Mitigation Efforts



- Training
- Operational changes
- Inspections
- Vegetation Management
- Situational Awareness
 - Weather Stations
 - PANO AI Cameras
- Hardening Efforts
 - Reconductoring
 - Undergrounding
- Public Safety Power Shutoff (PSPS)
- Continuing to evaluate risk

Planned Projects





Let's meet the future together.



Appendix



PSPS notifications to partners, customers and other stakeholders



When:	Warning 48–72 hours before a PSPS	Likely 24–48 hours before a PSPS	Imminent 1–4 hours before a PSPS	Happening* During a PSPS	Restoration begins* When it's safe	Restoration complete* PSPS is over
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What:	We haven't made a final decision yet, but it's looking like a PSPS is possible.	We haven't made a final decision yet, but it's looking increasingly likely a PSPS will be necessary.	To protect lives and property, we expect to call a PSPS very soon. Now's the time to activate your emergency plan and be sure to keep your outage kit handy.	Power is being shut off. PGE may open a Community Resource Center to provide essential resources like information, water, ice and a place to charge electronic devices.	Crews are patrolling and will respond to downed lines, repair damage and visually inspect equipment to make sure it's safe to restore power.	The immediate threat has passed and power has been restored. But we'll continue to monitor conditions so we can keep our customers and communities safe.
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How you'll hear may include: (From us and emergency partners)	We will notify our partners (e.g. public safety partners, key government officials and critical facilities) via:	We, and our partners, will notify impacted customers, stakeholders and community-based organizations via:	We, and our partners, will give impacted customers an estimated time when their power will be shut off via:	We know this is challenging, so we'll do everything we can to stay in touch with impacted customers via:	As crews work on restoration, we'll share any new or relevant information to make sure you're kept up to date via:	When conditions stabilize and power has been restored, we'll notify impacted customers via:
	 Email/Phone Other approprite communication channels 	 Email Public safety notification Social media Updates on the PGE website Media updates Advertising 	 Email Public safety notification Social media Updates on the PGE website Media updates Advertising 	 Email Social media Updates on the PGE website Media updates Proactive power out text message Advertising 	 Email Public Safety Notification Social media Updates on the PGE website Media updates Advertising 	 Email Social media Updates on the PGE website Media updates Proactive power on text message Advertising

Proposed Project: Portable Battery Pilot

Budget: \$100,000

Objective: Increase resilience for vulnerable customers affected by PSPS



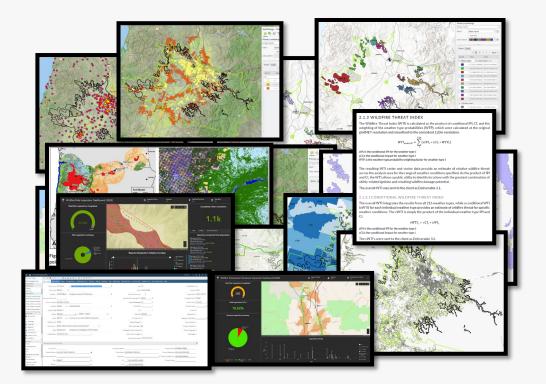
- Small scale study to provide portable batteries to med cert customers affected by PSPS
 - Note: These are <u>not</u> grid tied batteries, which would be about 10x the cost to provide.
- PGE will study the procurement, distribution, and customer experience
- Initial intent is to provide backup for medical devices, but possible expansion could include devices for keeping medication cold
- Extensive research was conducted prior to proposing this pilot
 - In-depth interviews with adults living with disabilities, caregivers, and community service providers
 - Quantitative survey research of adults with disabilities and caregivers
 - Secondary research of peer utilities in California, interviews with battery manufacturers, and technical studies by EPRI

Factors considered in HRFZ designation



High FRZs are the areas where there is the highest risk, both in likelihood and consequence, of PGE equipment starting a wildfire

More than two dozen data sets are assessed to determine these areas



- Service territory & PGE structures •
- Existing structure type & load
- Assessments from nationally recognized experts
- Consultations with local fire chiefs
- Current asset health
- Population & meter density
- Terrain slope & aspect
- Road/egress access & condition
- USDA's WF Risk to Communities
- Drinking water & watersheds
- CDC's social vulnerability indices
- Fire station proximity & access
- Road/egress access & condition
- Critical habitats

- WUI boundaries
- Cultural & scenic landmarks
- Meteorology benchmarks
- Outage history
- **Comparative metrics**