



Resiliency key to Oregon's clean energy future

City of Salem
Sept. 13, 2021



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President and CEO

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Senior Director of Transmission and
Distribution Operations

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Resiliency



Increasing threats to resiliency

40-YEAR ICE EVENT

RIVERSIDE AND OTHER WILDFIRES

GLOBAL PANDEMIC

PGE



Strong partnership is key

- Working together collaboratively, especially during major system events:
 - February wind, snow and ice storms
 - Communication and coordination of I-5 closure near South Salem
- We are your partner in meeting the energy needs of your community members and businesses
 - Salem Electric Avenue
 - Launched our operations customer engineer to collaborate with City of Salem staff
 - Supporting development of city's climate action plan
- PGE employees live in Salem: 75
- No. 1 taxpayer for the City of Salem

We share your commitment to safety, reliability, resiliency, security, affordability and clean energy



40-year ice event

Throughout the region

- Multiple storms coming in close together
- Massive damage to transmission system
- Ice as thick as 1½ inches on lines
- Clackamas, Marion and Yamhill counties hit hard

Salem

- Dangerous conditions from the onset of the storms
- Nearly 90,00 total customer outages
- Coordination with Marion County Emergency Management

All-hands-on-deck restoration effort

- More crews than at any time in our 130-year history
- Mutual assistance from 17 regional utilities sited at Chemeketa Community College



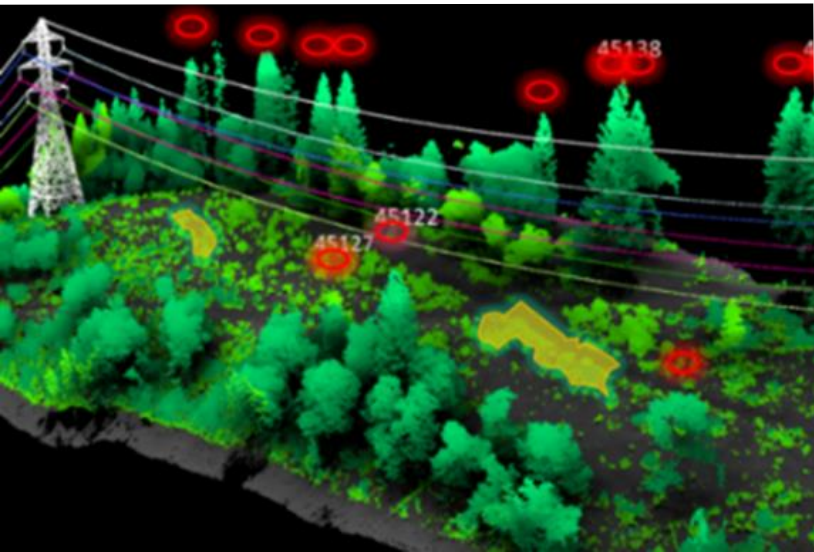


Strengthening resiliency

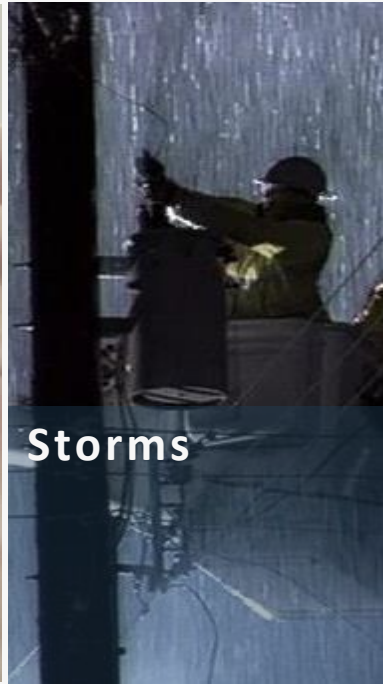
- **Building a smarter, more integrated grid**
 - Greater use of automation
 - Remote monitoring and early alert systems
- **Continuing to expand our FITNES program**
 - Tree trimming and vegetation management
 - Inspection program
- **Salem area improvements**
 - Completed about 50% downtown Salem underground cable replacement
 - Supporting relocations for city road improvements:
 - Reed Road transmission line
 - Hayesville Pump Station



Infrastructure Resilience & System Hardening



Emerging threats add to complexity



HOW WE PREPARE

1. Emergency planning and exercises
2. System improvements
3. Redundant systems
4. Strategic partnerships

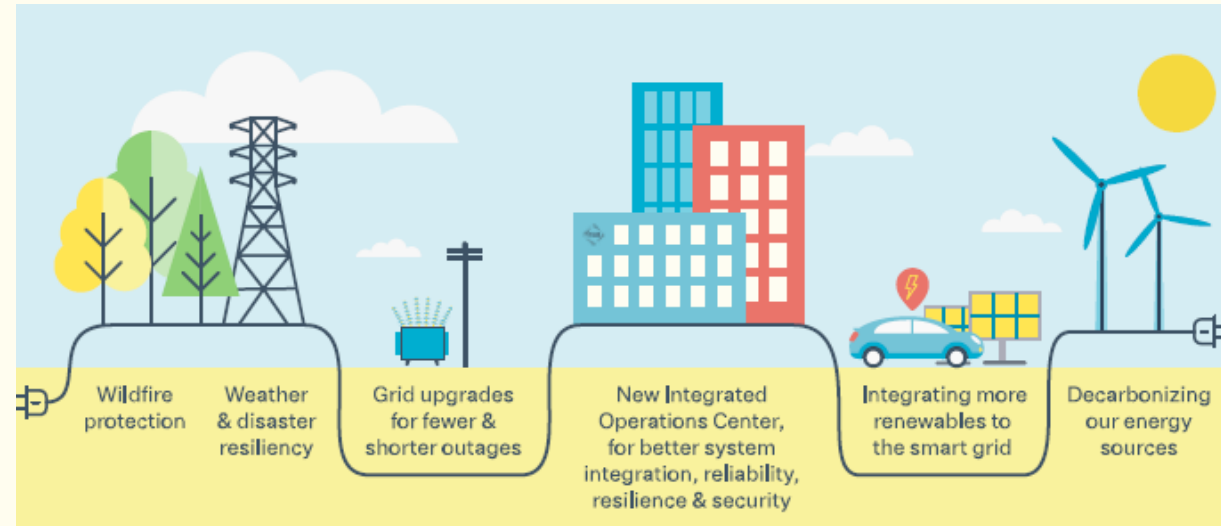
Proposed 2022 price change

Investments we're making for customers

- Protections to keep our system wildfire-safe and resilient from weather and disaster-related events
- Technology to upgrade grid including new Integrated Operations Center
- Decarbonizing our energy sources by integrating renewable resources

Upgrading the grid to deliver safe, reliable, resilient, clean electricity

- Will include 10-month review process with opportunities for public input
- Oregon Public Utility Commission (OPUC) determines pricing
- Over 3 years since last general rate case
- Overall general rate case price increase of 3.9%





Collaborative partnerships are key

Your PGE team includes:



Wendy Veliz

Local Government Affairs Manager

503-929-8304

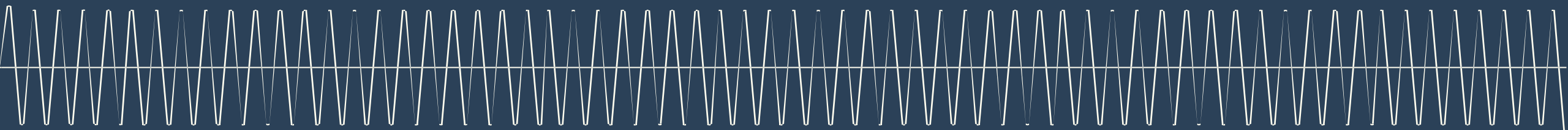
Wendy.Veliz@pgn.com



Questions?



Appendix

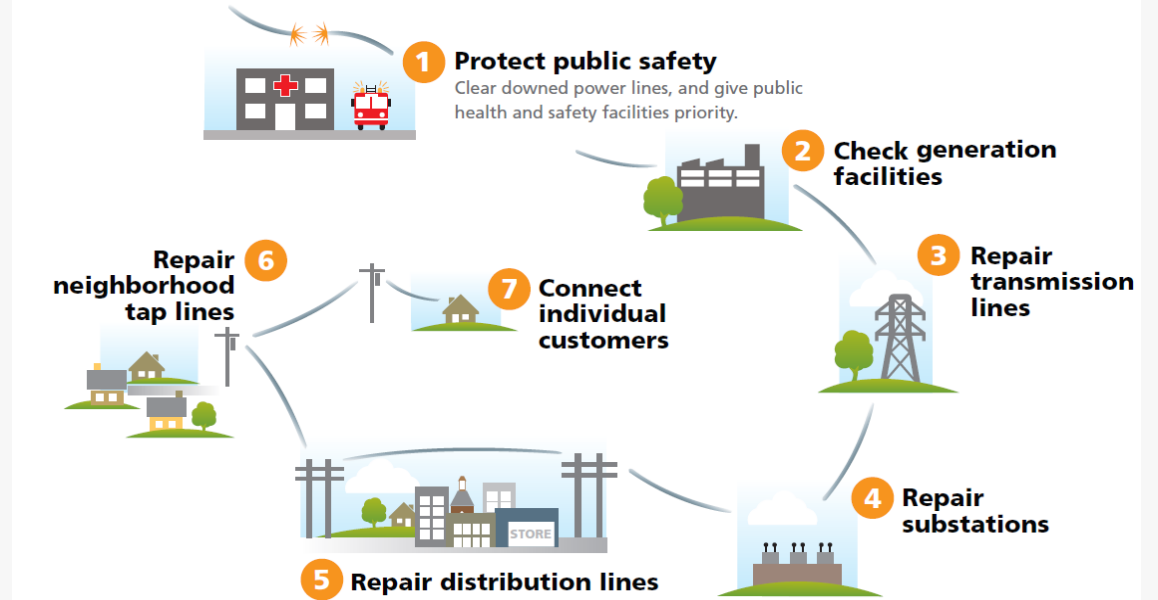


Storm preparedness and response

PGE prepares for outages all year, not just before a storm

- Robust tree trimming program
- Year-round inspection schedule of poles and wires
- Ongoing focus on system hardening
- Preparedness and safety messaging to customers
- Crews ready to respond 24/7, 365 days a year
- Mutual aid agreements in place and available during major emergency or outage events

SEVEN STEPS TO RESTORATION



Wildfire prevention and response

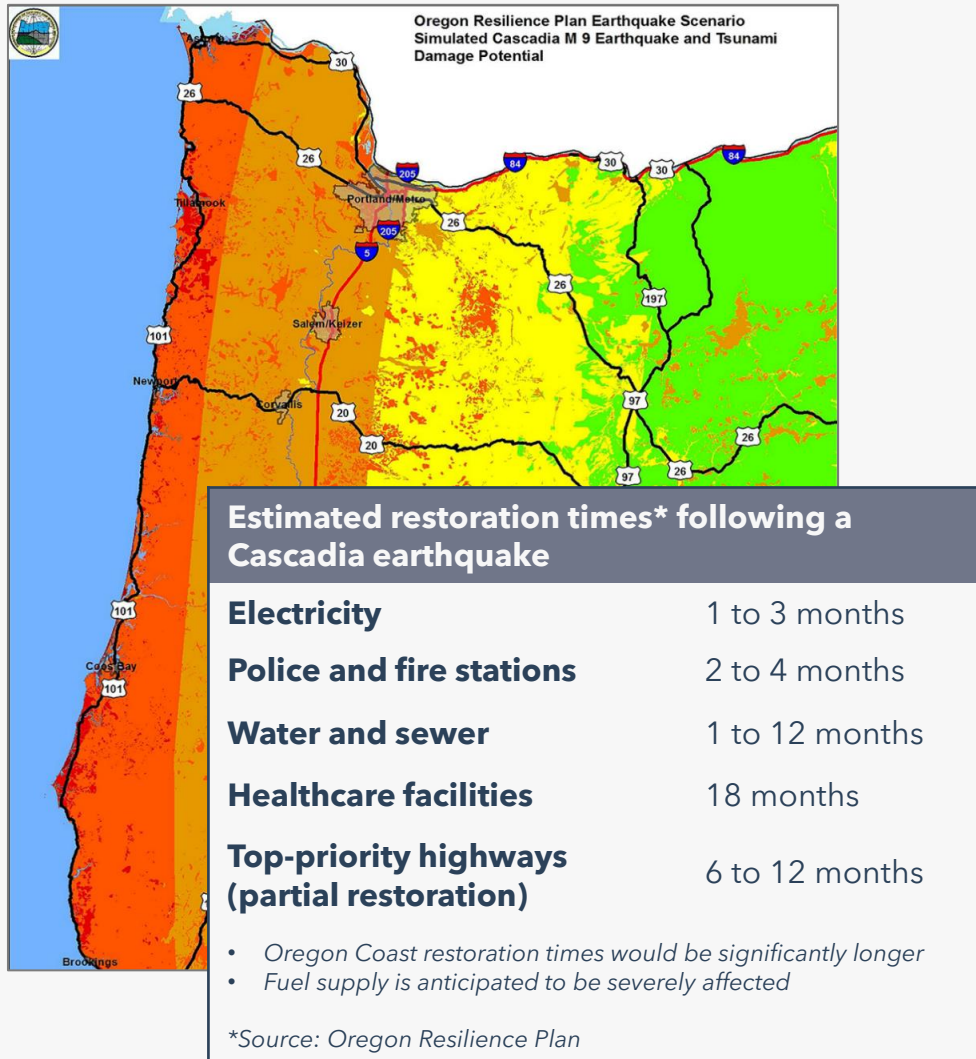
Advanced Wildfire Risk Reduction Program:

- Fire risk modeling and assessment
- Design and construction modifications
- Inspection and maintenance enhancements in high-risk areas
- Operational practices
- Situational and conditional awareness
- Preparedness, response and recovery
- Communication and outreach



<https://portlandgeneral.com/outages-safety/wildfire-outages>

Earthquake preparedness and response



- Expanded training and planning
- Strong partnership with counties and cities
- Exercising readiness in complex, national exercises (ClearPath, GridEx, etc.)
- Strengthening generation, transmission and distribution infrastructure
- PGE Readiness Center (24/7 backup facility in Clackamas)
- Integrated Operations Center (2021)

Cybersecurity and physical security preparedness and response

Cyberattacks on PGE systems have increased in volume and sophistication, and physical security threats are on the rise. PGE has made significant investments in an integrated cyber and physical security program to preserve electrical reliability for our customers

STEPS WE'VE TAKEN:

- Benchmarked program in 2016 and 2019, with improvements finalized in 2020
- Expanded PGE cybersecurity team (9 → 54 employees)
- Enhanced technology and practices to protect customer information
- Better technology and practices to block physical access
- Yearlong employee training and awareness
- Formal integrated response plan
- Exercises to test capabilities, such as the recent GridEx training

Preparing for emergencies



Emergency planning and exercises

- Dedicated emergency management and cybersecurity
- PSPS
- Companywide use of Incident Command System
- Ongoing testing of plans and procedures
- Regional exercises
- National exercises



System improvements

- Seismic upgrades
- Upgraded radio network
- Vegetation management
- Alert and monitoring systems
- Smart grid



Redundant systems

- Carver Readiness Center
- Integrated Operations Center
- Off-site communications backup



Strategic partnerships

- Edison Electric Institute and Western Energy Institute
- Utility mutual assistance
- County/city emergency management
- State/Emergency Support Function #12 coordination
- Multi-agency coordination group