The Risks are Mounting

Today's Challenge of Maintaining Affordable and Reliable Electric Service

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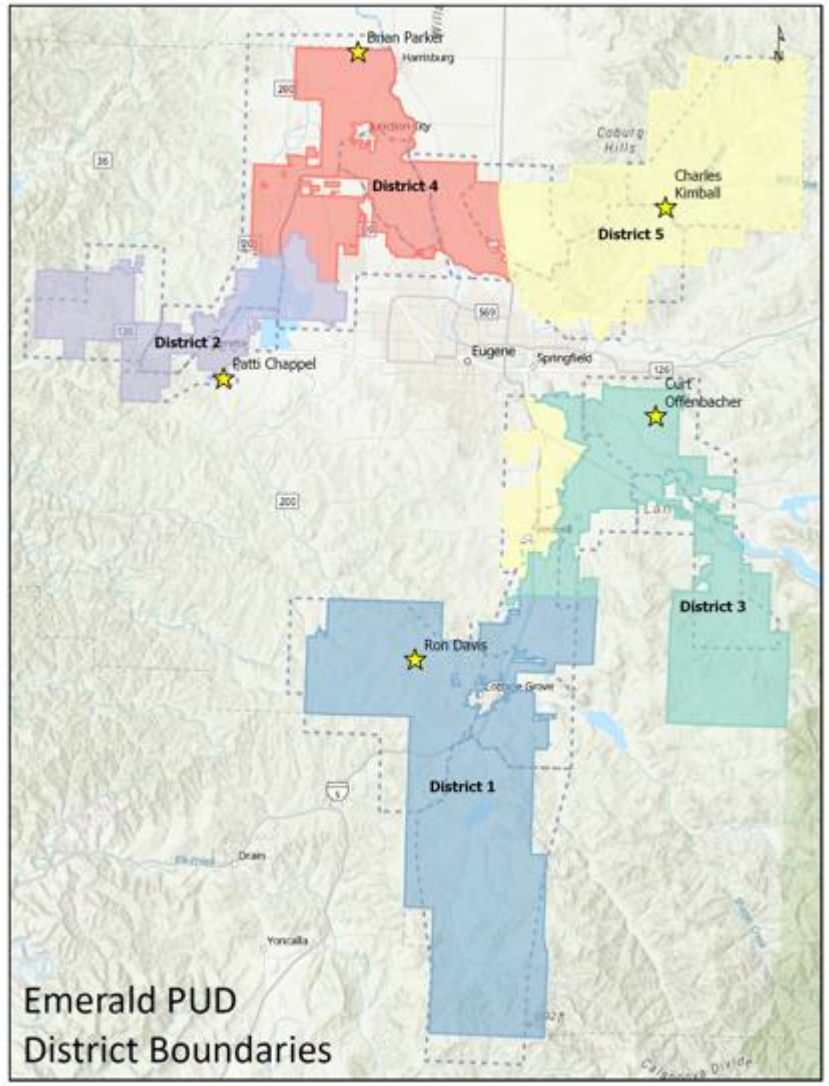
Kyle Roadman, General Manager, Emerald PUD

Presentation to the Senate Interim Committee on
Veterans, Emergency Management, Federal and World Affairs

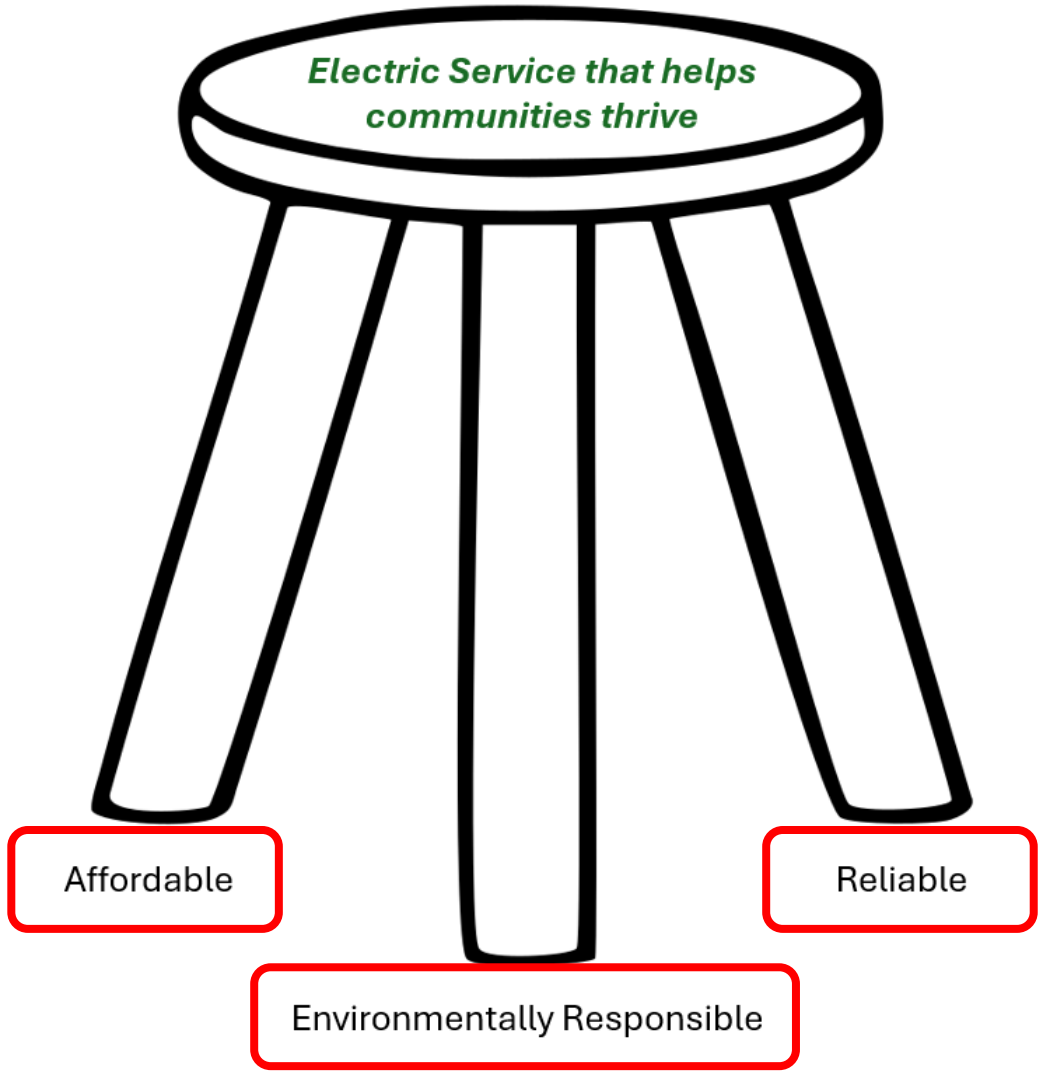
December 10, 2024

Emerald PUD Profile

- Emerald People's Utility District ("EPUD")
- Consumer owned, not-for-profit electric utility
- Serving most of rural Lane County (area surrounding Eugene-Springfield)
- Replaced the incumbent investor-owned utility (Pacific Power) in 1983
- 40,000 citizens across 572 square miles



Our Balancing Act



The Region's Track Record

- Historically, the Northwest has led the way on each of these fronts.

2021

TABLE 1: STATE RANKINGS ON OVERALL UTILITY PERFORMANCE

Ranking (Best to Worst)	State	Affordability Average	Reliability Average	Environmental Average	Average Rank
1	Nevada	14.2	5.7	20.9	13.6
2	Washington	4.2	29.0	8.9	14.0
3	Idaho	6.6	24.2	13.8	14.9
4	Oregon	11.2	24.8	10.3	15.4
5	Illinois	17.2	7.7	22.4	15.8
6	Nebraska	15.6	7.5	29.0	17.4
7	North Dakota	20.2	8.7	26.2	18.4
8	Arizona	29.2	5.7	22.3	19.1
9	Minnesota	23.0	13.2	22.4	19.5
10	Utah	3.6	19.7	35.3	19.5
11	Colorado	13.4	18.2	27.4	19.7
12	District of Columbia	18.4	8.2	34.3	20.3
13	Iowa	26.3	13.0	21.6	20.3
14	Montana	18.4	22.2	22.6	21.1
15	New York	32.6	19.7	12.6	21.6

Source: Electric Utility Performance: A STATE-BY-STATE DATA REVIEW (published by the Citizens Utility Board of Illinois).

https://www.citizensutilityboard.org/wp-content/uploads/2021/07/Electric-Utility-Performance-A-State-By-State-Data-Review_final.pdf

New Risks to Manage

- Maintaining this position is becoming more challenging by the day.

Risk Category	Description	Committee Takeaways
1. Extreme Winter Storms	*A changing climate is driving new weather extremes, with winter snow and ice storms causing unprecedented levels of damage.*	• Mitigating the impacts will require much higher levels of investment • Despite our best efforts, extended outages will still occur • We need to help citizens be prepared for real threats to life and safety
2. Wildfires	*The risk of wildfires has created a "second storm season" with threats to public safety and utility financial health.*	• Mitigating the impacts will require continued high levels of investment • Utilities have different liability profiles but none of us can rest easy • We're doing everything we can but it's impossible to reduce the risk to zero • Consequences may include bankrupt utilities, higher rates, less reliability
3. Power Supply Deficits	*The region's power supply system is inadequate for the rising level of electricity demand.*	• Demand for electricity is increasing rapidly; regional supply is running short • Resource shortages have already led to forced outages; these will continue • We are losing baseload resources faster than we are adding replacements • New resources tend to produce intermittently, adding volatility and risk

Extreme Winter Storms

- Lane County has faced two “storm of the century” events in the past five years
- 2019’s “Snomaggedon” and 2024’s Ice Storm
- In both cases, many customers went without power for 10-14 days
- Our distribution system has stood in the same place for 80+ years
- Never have we seen the level of destruction brought about by these events


CAUTION
CHILDREN
SPEED
LIMIT
5
PRIVATE
ONE
LANE
ROAD

Extreme Winter Storms: Mitigation

- Mitigation starts with aggressive tree trimming and vegetation removal
- We’re also making capital investments (hardier construction; undergrounding)
- Ultimately, some extended outages are going to be unavoidable
- Helping customers with emergency preparation is key
- This is particularly important in rural communities without many resources

Wildfires

- The threat of wildfires is a near constant from April - October
- Currently in Oregon there is no uniform, agreed upon standard of care
- Utilities face different liability profiles but none of us can fully mitigate this risk
- There are only so many tree trimmers and we don’t have unlimited budgets
- Consequences may include bankrupt utilities, higher rates, and lower reliability

Just in 2024 alone…

Fire crews battle blaze off McKenzie View Drive amid red flag warning

David DeMille and Haleigh Kochanski Eugene Register-Guard
Published 8:08 p.m. PT July 16, 2024 | Updated 10:52 a.m. PT July 17, 2024

The Register-Guard

20-acre wildfire burning southwest of Eugene near Veneta

Haleigh Kochanski, Eugene Register-Guard
Updated Sat, June 1, 2024 at 7:19 AM PDT · 1 min read 6

Brush fire prompts Level 1 evacuations just south of Eugene

KLCC | By Chris M Lehman
Published August 5, 2024 at 1:33 PM PDT

Oregon wildfires: Brush fire near Eugene Airport brings level 3 evacuations

Zach Urness, Emma Logan and David DeMille Salem Statesman Journal
Published 1:41 p.m. PT July 15, 2024 | Updated 10:59 p.m. PT July 15, 2024

Fire reported on McKenzie View Drive north of Springfield

Miranda Cyr and Haleigh Kochanski Eugene Register-Guard
Published 7:45 p.m. PT July 18, 2024 | Updated 7:59 p.m. PT July 18, 2024

Lane County issues evacuation alert as wildfire closes Highway 99 near Cottage Grove

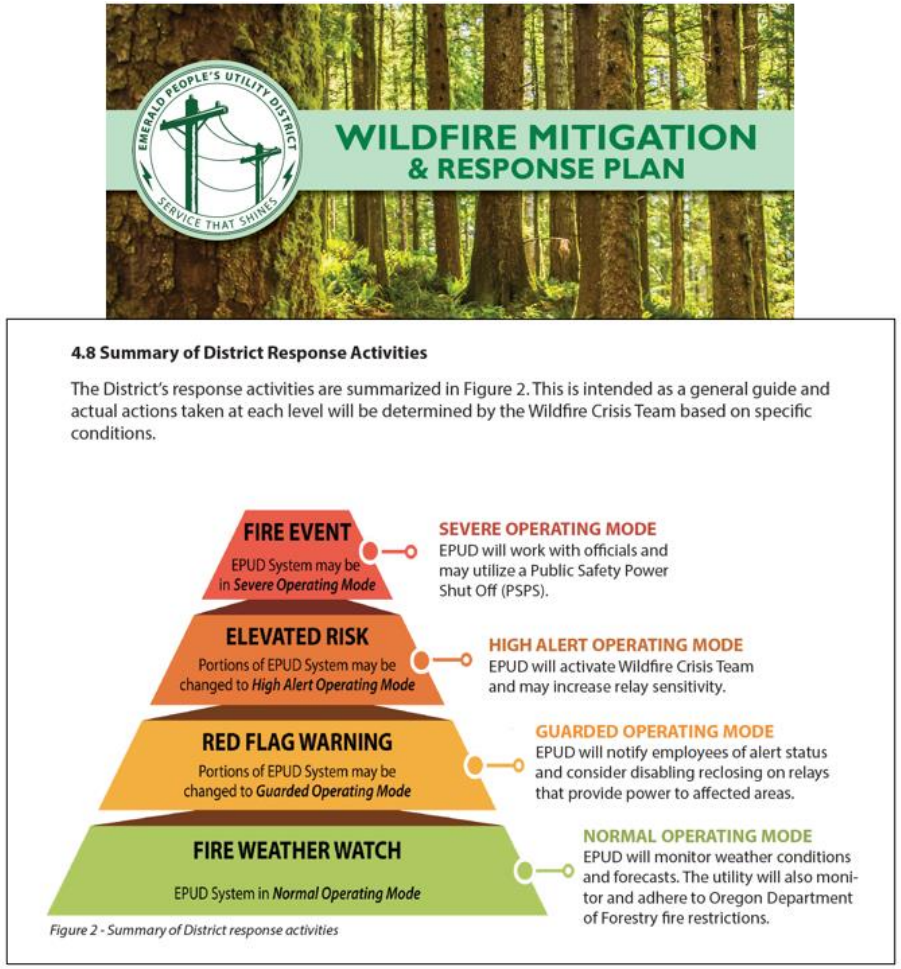
Gannett STAFF REPORTS
October 26, 2024 at 6:48 PM

BLM expands emergency fire closure due to Lane1 Fire near Cottage Grove

Submitted Jul 30, 2024 Updated Oct 19, 2024 0

Wildfires: Mitigation

- We operate our system at varying levels of sensitivity based on weather conditions.
- We are also aggressive with tree trimming, including partnering with our customers.
- We've implemented one Public Safety Power Shut Off. It was not well received.
- ***There is no full proof solution here.***
- Utilities can do everything right and still face liability.



Power Supply Deficits

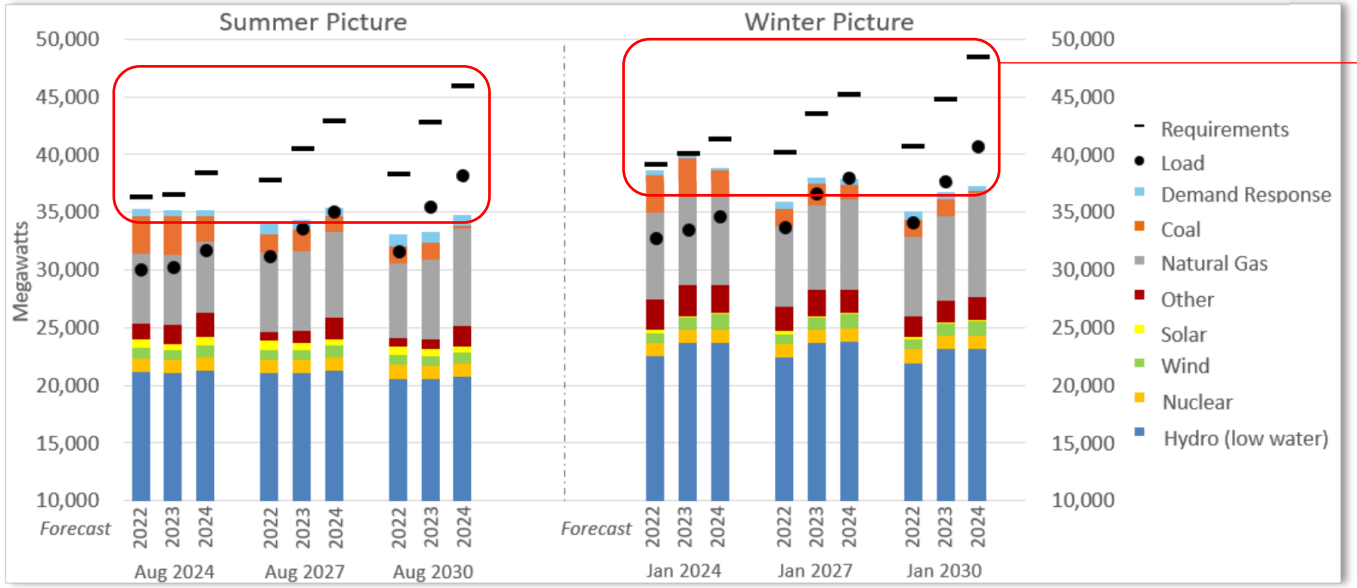
- Finally, the Northwest is facing growing power supply deficits
- Demand for electricity is increasing by leaps and bounds
- At the same time, critical baseload resources are being removed
- The only current replacement options are variable in nature (wind and solar)
- This is creating a much more volatile regional power supply system
- The inevitable result is lower reliability and much higher cost

Northwest Regional Forecast (PNUCC)

Northwest Regional Forecast predicts more than 30 percent regional electric demand growth possible by 2033

Published on May 08, 2024 by Chris Galford

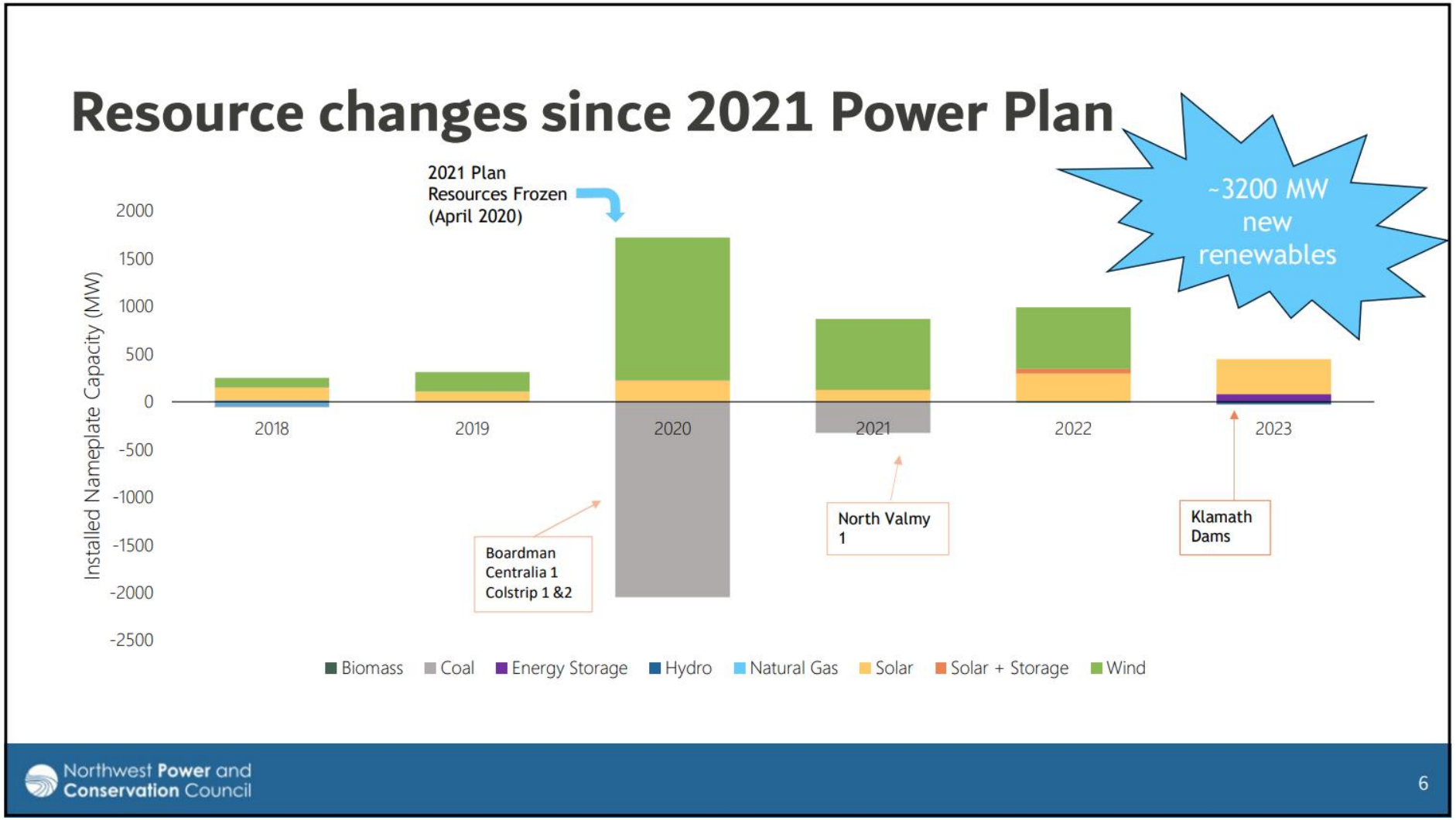
Figure 7: 2024 Load and Resource Forecast Compared to 2023 and 2022



Power supply deficits exist now and will get worse in the future

Source: https://www.pnucc.org/wp-content/uploads/2024-PNUCC-Northwest-Regional-Forecast-final.pdf

NW Resource Changes (2018-2023)



- ~3,000 MW of coal replaced by ~3,000 MW of wind and solar
- *From*: firm baseload capacity (***supply is there when we need it***)

  To: non-firm, near-zero capacity (***supply is not there when we need it!***)

Source: NW Power and Conservation Council. ***https://www.nwcouncil.org/fs/18692/2024_04_p3.pdf***

Impact on Reliability

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TOP STORY

Winter Storm Pushed Northwest Close to Rolling Blackouts

Steve Ernst Mar 22, 2024

January 2024

Latest Local News Live Shows ••• CBS NEWS

MONEYWATCH

As Pacific Northwest cooks, some energy customers hit with multiple blackouts

MONEY WATCH

July 1, 2021 / 4:11 PM EDT / AP

June 2021

Impact on Affordability

Pacific Power Asks for 21.6% Rate Increase for 2025

Posted on April 15, 2024 by **Charlotte Shuff**
Tags, **Energy**, **General Interest**

PGE wins approval for largest rate increase in two decades

Updated: Nov. 03, 2023, 11:41 a.m. | Published: Nov. 03, 2023, 6:00 a.m.

"PSE/PGE will likely need annual double-digit retail rate increases for the next 5-7 years. This trend will probably double their rates (from present 11-13 cents/kWh levels) by the early 2030s –and will likely produce a significant political reaction."

Randy Hardy, Former BPA Administrator, August 9, 2024

Affordability (Oregon Ranking in 2015)

Residential Electricty Rates

National Rank	State	August 2015
1	WA	9.40
2	LA	9.71
3	ID	10.24
4	TN	10.30
5	AR	10.37
6	OK	10.39
7	KY	10.45
8	WV	10.63
9	OR	10.68
10	ND	11.00

In 2015, Oregon had the 9th lowest residential electric rates in the country.

Source: U.S. Energy Information Administration (EIA)
https://www.eia.gov/electricity/data/state/

Affordability (Oregon Ranking in 2024)

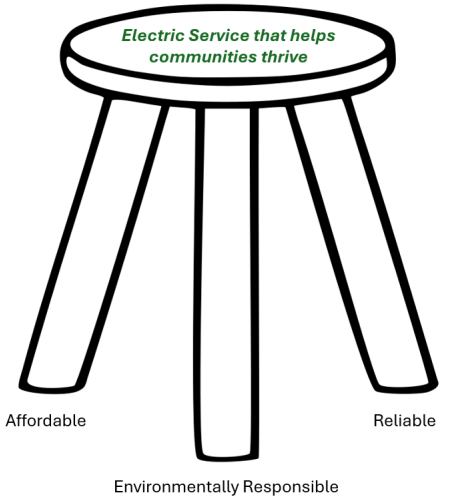
Residential Electricty Rates

National Rank	State	August 2024	August 2023	Annual % Change
1	Louisiana	11.57	11.06	4.6%
2	Utah	11.78	11.67	0.9%
3	Idaho	12.12	11.56	4.8%
4	Washington	12.21	11.14	9.6%
5	Tennessee	12.45	11.93	4.4%
6	Arkansas	12.47	12.47	0.0%
7	Nebraska	12.52	12.19	2.7%
8	Kentucky	12.68	12.33	2.8%
9	North Dakota	12.7	12.55	1.2%
10	Oklahoma	12.92	13.1	-1.4%
11	Mississippi	13.01	12.7	2.4%
12	Montana	13.32	12.93	3.0%
13	Florida	13.64	14.89	-8.4%
14	Nevada	13.73	16.48	-16.7%
15	Wyoming	13.81	12.45	10.9%
16	South Dakota	13.85	13.07	6.0%
17	North Carolina	14.19	12.7	11.7%
18	Virginia	14.4	13.85	4.0%
19	Kansas	14.56	13.35	9.1%
20	South Carolina	14.62	13.41	9.0%
21	Missouri	14.83	14.25	4.1%
22	Texas	14.83	14.17	4.7%
23	Arizona	14.85	13.83	7.4%
24	Indiana	14.87	14.17	4.9%
25	Iowa	14.87	15.17	-2.0%
26	Alabama	14.87	14.19	4.8%
27	Oregon	14.89	13.02	14.4%
28	Georgia	14.9	14.12	5.5%

Source: U.S. Energy Information Administration (EIA)
https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a
Note: this report changes monthly. Archived historical data is here:
https://www.eia.gov/electricity/data/state/

In 2024, Oregon ranks 27th and rates are increasing faster than any state other than Illinois!

Power Supply Deficits: Mitigation



- Policymaking must keep in mind all three pillars:
- Affordable, Reliable, Environmentally Responsible
- A single-minded focus on one puts the others at risk
- Maintaining baseload resources that generate on-demand is critical
- These include hydroelectricity, nuclear, and natural gas
- It’s also imperative to keep the focus on commercially available technology