2025

Summer Reliability Outlook

Prepared for RC West Summer Readiness

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Electric Reliability
& Security for the West

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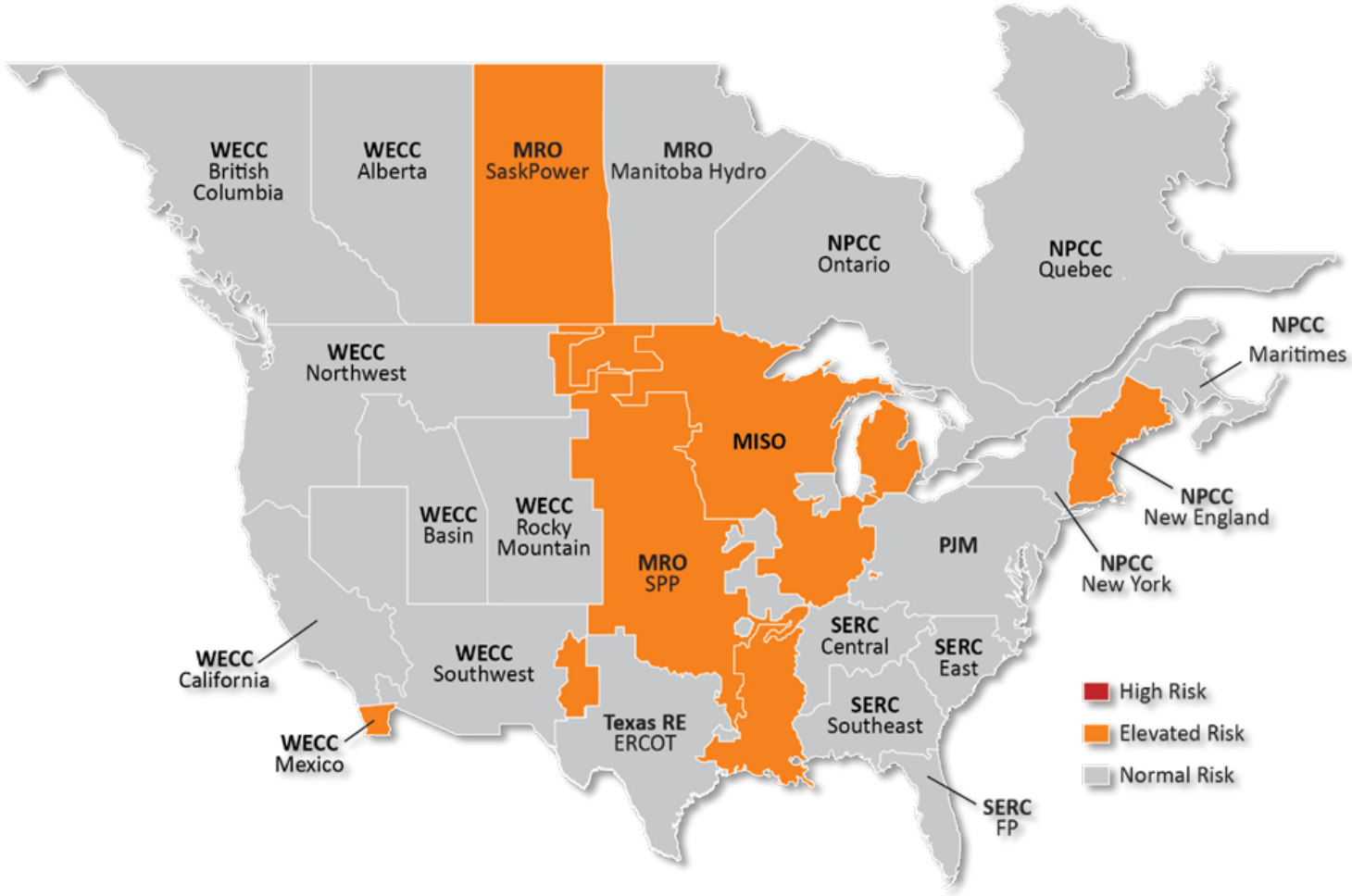
2025 NERC Summer Reliability Assessment (SRA)

Risk identification for this summer (June–September)

- **Elevated Conditions:**
  - At or above 90/10 demand forecast
  - Abnormally high generator outages
  - Low renewable availability
- **Normal Conditions:**
  - Average (50/50) demand conditions
  - Typical outages & renewable availability



Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in extreme conditions
Normal	Sufficient operating reserves expected

New Regional Boundaries

2024

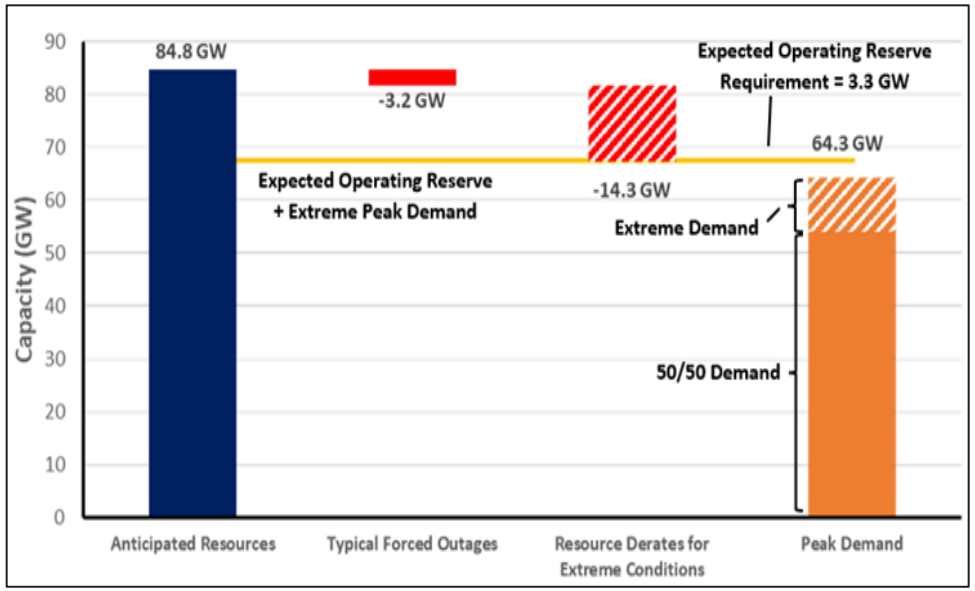
2025

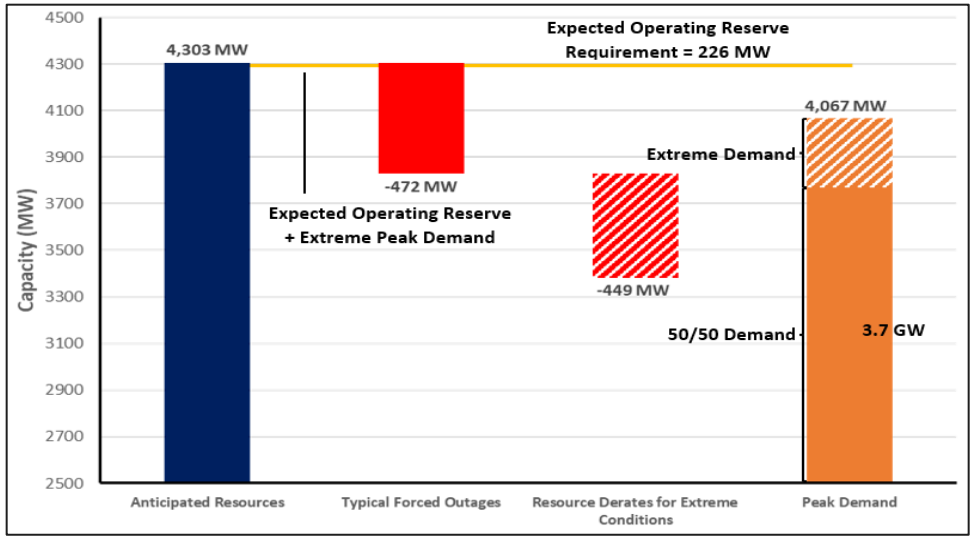
RC West

2025 SRA Results: California & Mexico

California: Normal Risk

- Peak hour expected at HE 19 in early September.
- Wildfires can and have threatened both the California-Oregon Intertie as well as another 500 kV line resulting in import capability limitations and issuance of an EEA.
- Prolonged elevated demand during heat waves combined with thermal resource derates and forced outage rates presents risk.





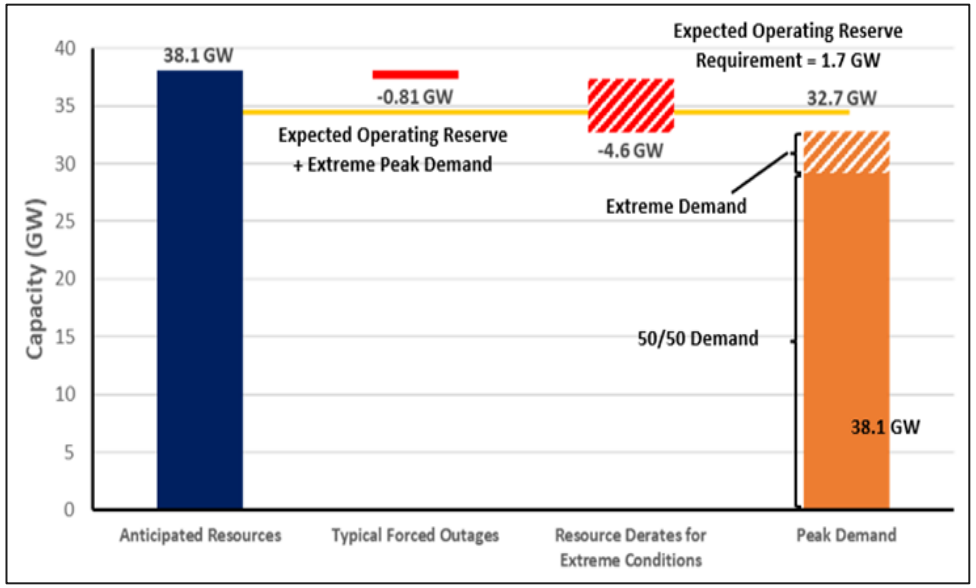
Mexico: Elevated Risk

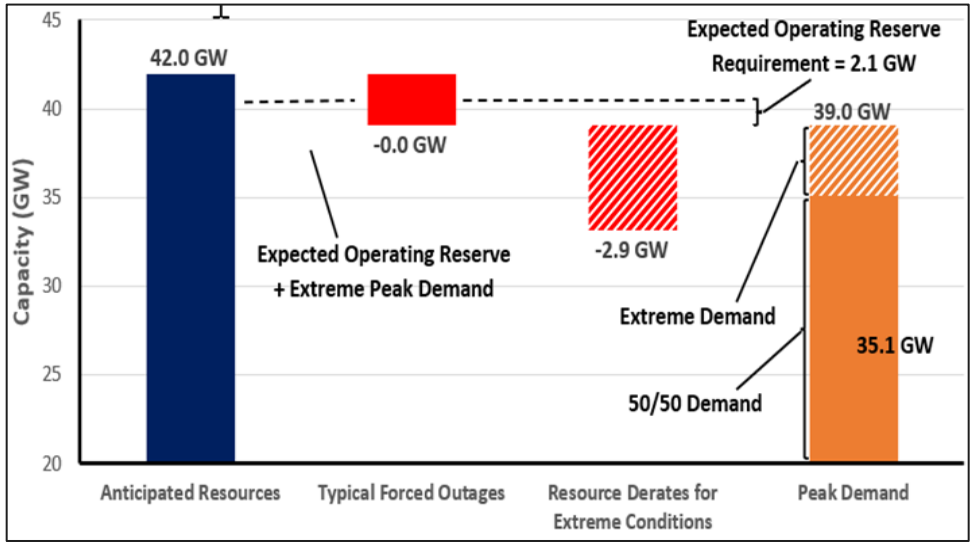
- Peak hour expected at HE 16 in early August.
- Operating reserves are a concern in this region during periods of extreme heat and elevated demand. High loading on Path 45 (See: WECC Path Rating Catalog) coupled with outages or derates to large thermal assets in this region can result in the declaration of an EAA and a request for assistance from RC West.

2025 SRA Results: Northwest & Southwest

Northwest: Normal Risk

- Peak hour expected at HE 17 in early July.
- Extreme heat corresponds with elevated loads, reduced transmission ratings, and temperature derates of thermal resources which can strain resource adequacy and grid reliability.
- Seasonal hydro variability is a risk.





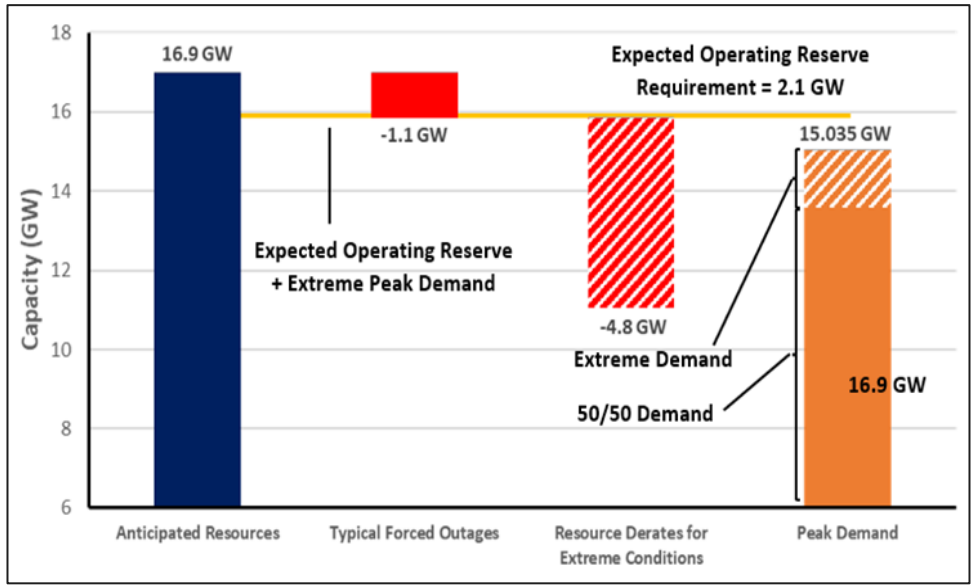
Southwest: Normal Risk

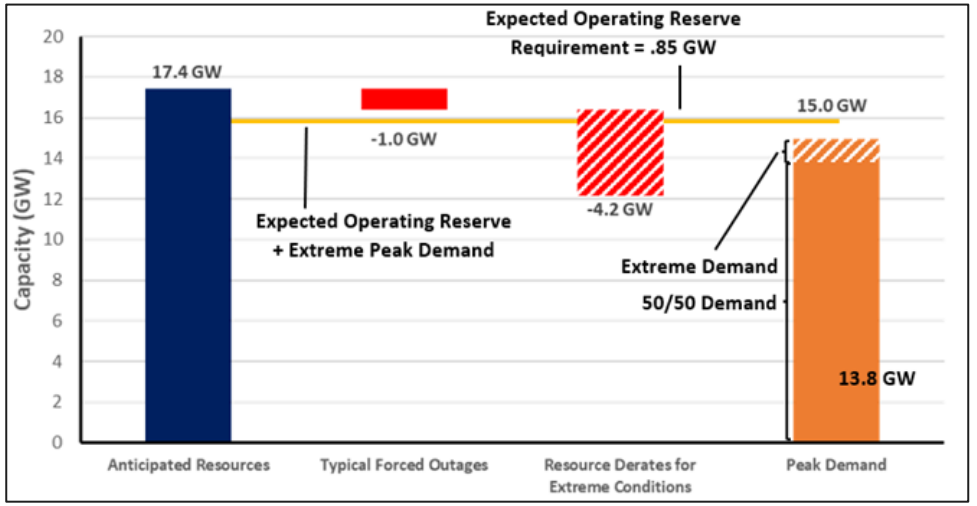
- Peak hour expected at HE 19 in early July.
- Operating reserves are a concern in this region during periods of extreme heat and elevated demand. High loading on Path 45 (See: WECC Path Rating Catalog) coupled with outages or derates to large thermal assets in this region can result in an EAA and a request for assistance from RC West.

2025 SRA Results: Basin & Rocky Mountain

Basin: Normal Risk

- Peak hour is expected at HE 15 in early July.
- Seasonal hydro supply fluctuations require monitoring to ensure anticipated capacity. Minimal drought conditions in Idaho, some in Utah.
- Wildfires near wind generation result in curtailment for safety reasons. Fire-damaged transmission lines





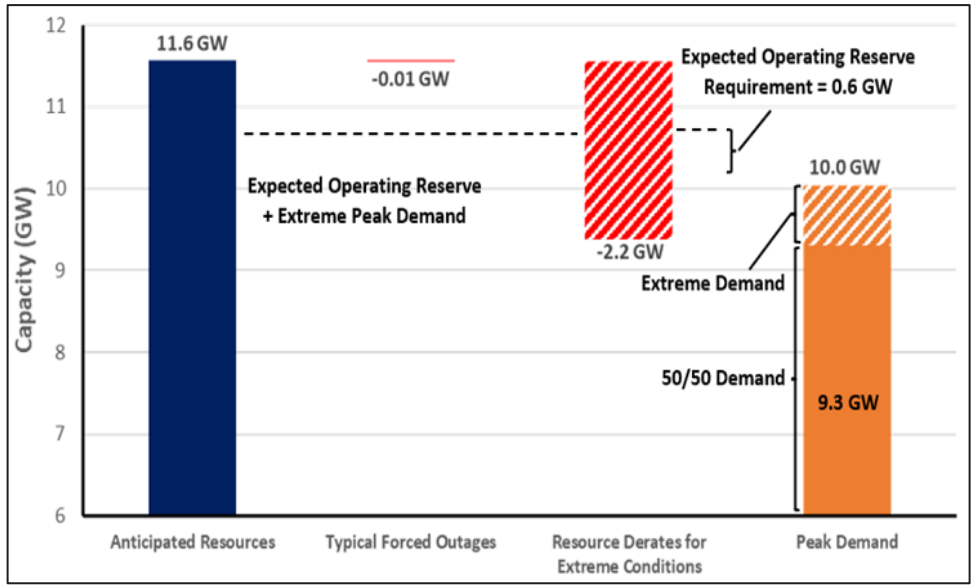
Rocky Mountain: Normal Risk

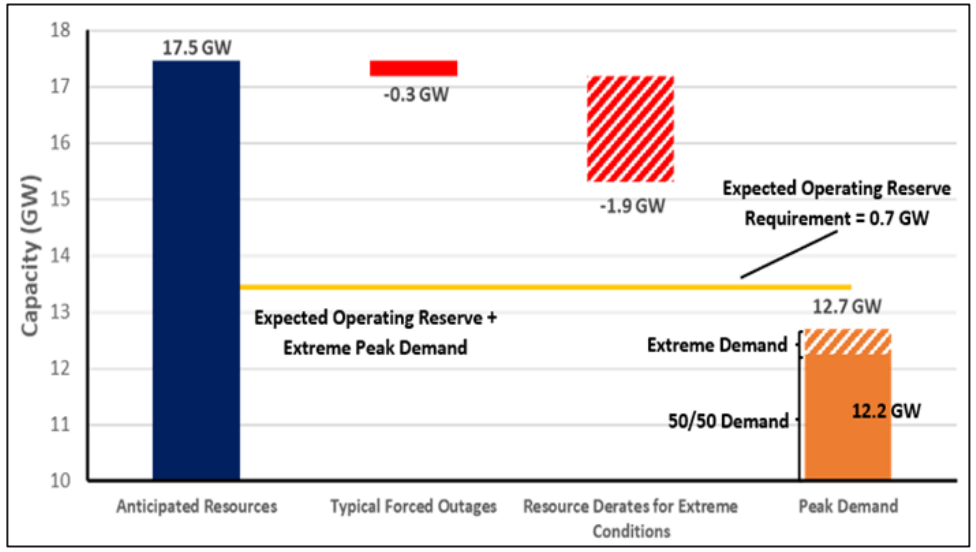
- Peak hour is expected around 4 pm in late July. Summer has increased load and decreased market availability. Low wind availability and ramping scarcity events are a concern.
- Climate change has contributed to a rise in wildfire frequency and shortening of the fire return interval, which, having caused generation outages, threatens rural co-ops disproportionately due to extensive line buildout over remote regions.

2025 SRA Results: British Columbia & Alberta

British Columbia: Normal Risk

- Peak hour expected at HE 15 in early August.
- Wildfire seasons will be increasingly hotter and drier in the area due to the changing climate. British Columbia had the greatest acreage burned by wildfires in the Western interconnection over the last three years, and drought conditions are not forecast to improve for the upcoming summer.





Alberta: Normal Risk

- Peak hour expected around 3p in late July.
- High temperatures, import limitations, and low or declining renewable output during summer evenings can result in Grid Alerts.
- Wildfires can threaten generating assets and transmission infrastructure.

Supply Chain Issues

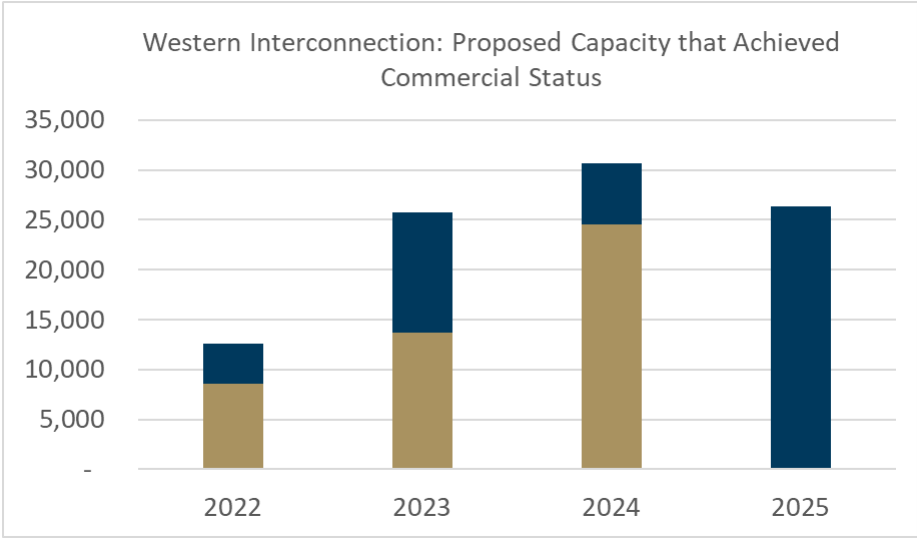
Rank	Equipment	Percentage of WECC BAs Citing Procurement Concerns
1	Transformers	59%
2	Circuit Breakers	52%
3	Switchgears	31%
4	Insulators	28%
Tied-5	Substation Switches	24%
Tied-5	Transmission Poles	24%

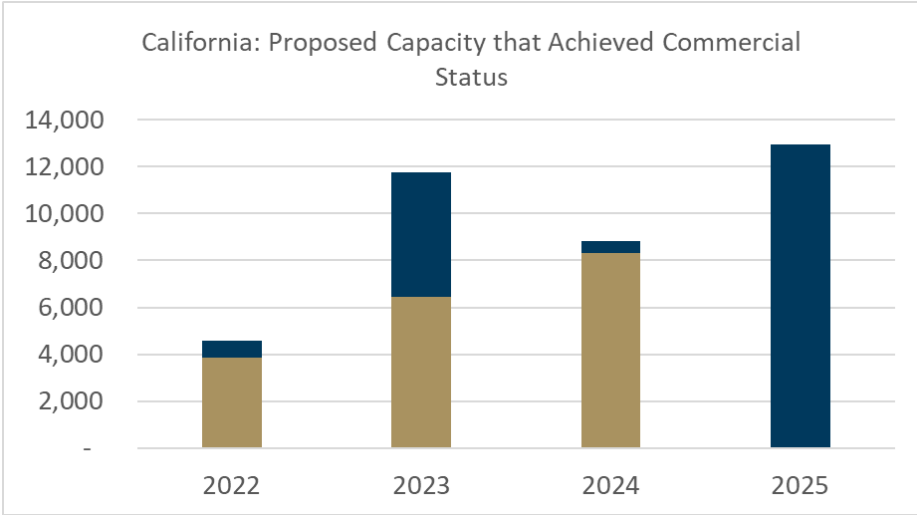
- Transformers (2–4 years) +1 year, +100% cost
- Circuit Breakers (2–4 years) +0.5 years, ↑ cost
- Switchgears (1.5–2 years) +0.5 years, +10% cost
- Insulators (1 year)
- Substation Switches (1–2 years) +10 weeks
- Transmission Poles (0.5 years) -0.5 years, ↑ cost

Proposed vs. Completed

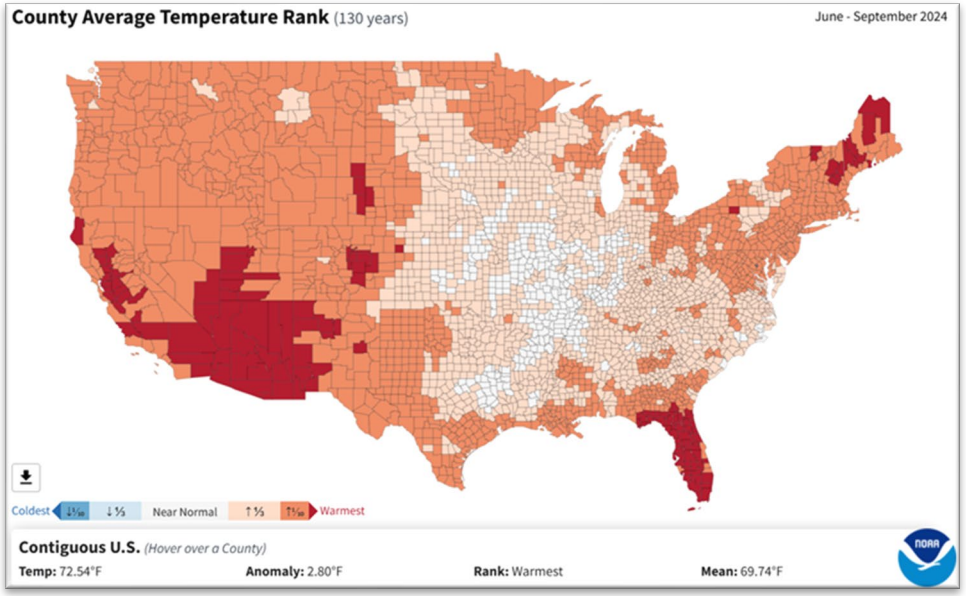
- **Vastly improved resource completion percentage in 2024 vs. 2023**
- **Delayed resources in 2022 & 2023 becoming operational**
- **Mitigation strategies for supply chain issues making an impact**

Year	Western Interconnection	California
2022	69%	84%
2023	53%	55%
2024	80%	94%
3-Year Avg.	67%	78%



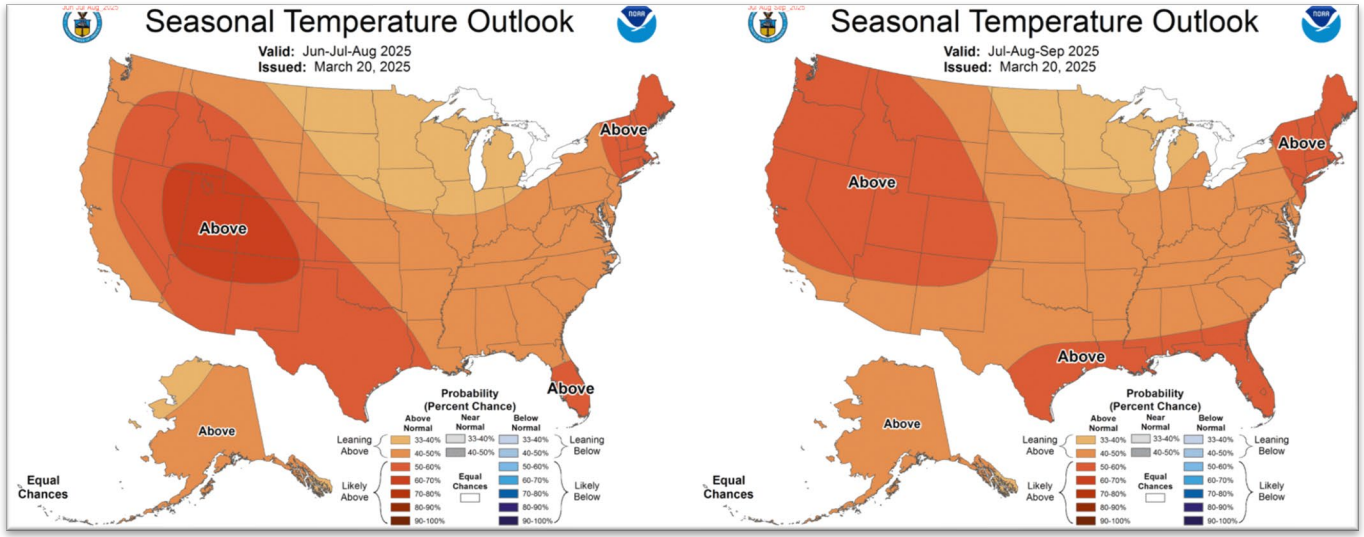


Climate Change: Extreme Heat



Rank	Operational Challenges and Reliability Concerns	Percentage of WECC BAs Citing this Concern
1	Extreme Hot Weather	60%
2	Wildfires	46%
3	Solar, Wind, Hydro Variability	34%
4	Federal/State Policies or Clean Energy Goals	31%
5	Aging Thermal Resource Fleet	23%

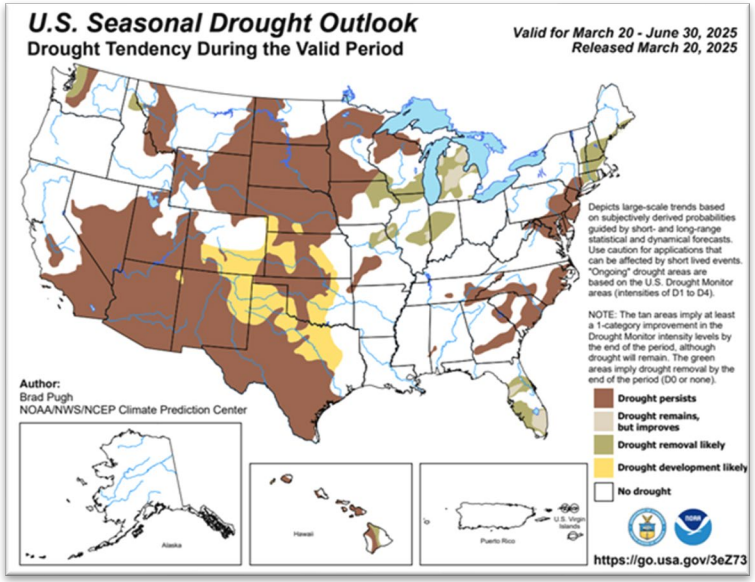
"August 2024 set a new monthly temperature record, capping **Earth's hottest summer since global records began in 1880**."
—NASA



Climate Change: Wildfire

- Public safety
- Curtailments of generating assets
- Damage to transmission & distribution
- Can limit import capability of high voltage lines

	2022	2023	2024
Alberta	323,357	5,436,318	1,767,302
Arizona	124,165	319,543	282,989
British Columbia	329,730	7,019,139	2,671,487
California	309,287	357,361	1,081,144
Colorado	45,732	40,527	60,539
Idaho	436,733	96,542	996,762
Montana	137,509	113,152	352,491
Nevada	58,402	9,851	70,410
New Mexico	859,906	172,823	82,531
Oregon	456,082	197,338	1,797,796
Utah	27,245	18,200	90,417
Washington	173,659	155,401	275,593
Wyoming	25,766	7,657	620,069
Totals	**3,307,573**	**13,943,852**	**10,149,530**



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Appendix