

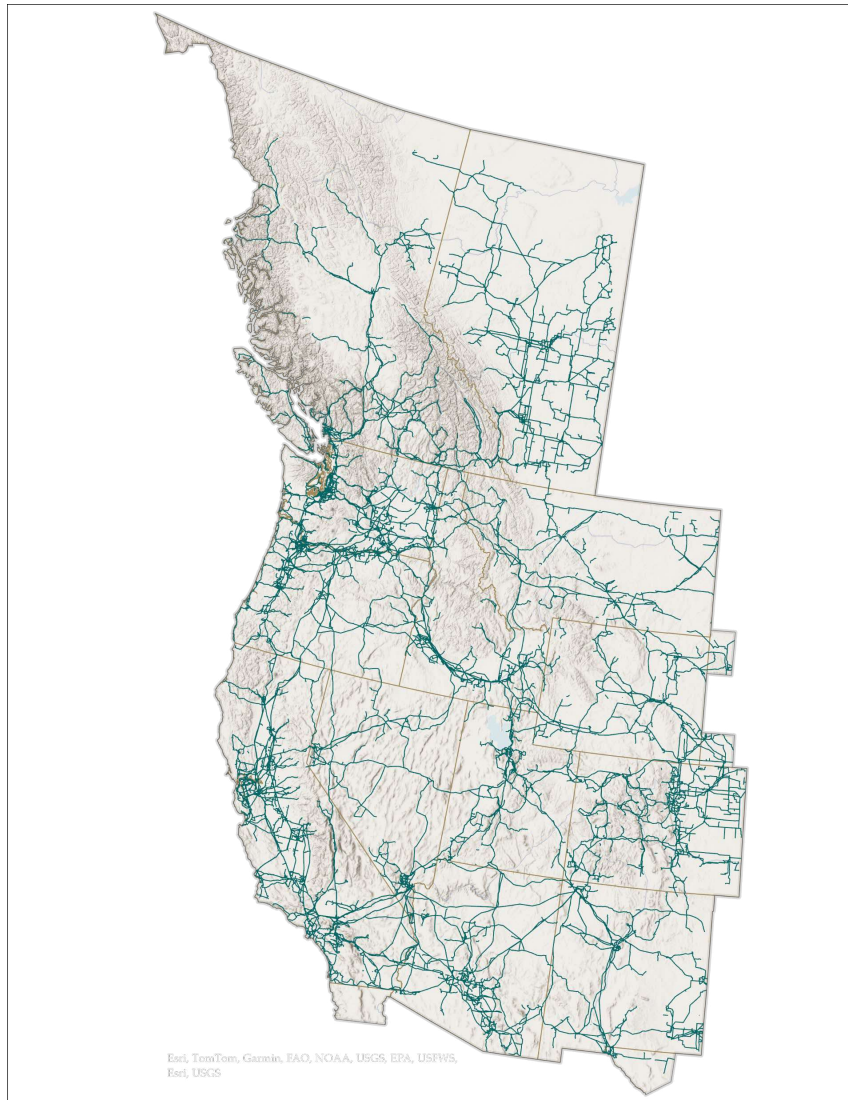


# NAIOP Regional Public Policy Summit

September 26, 2024

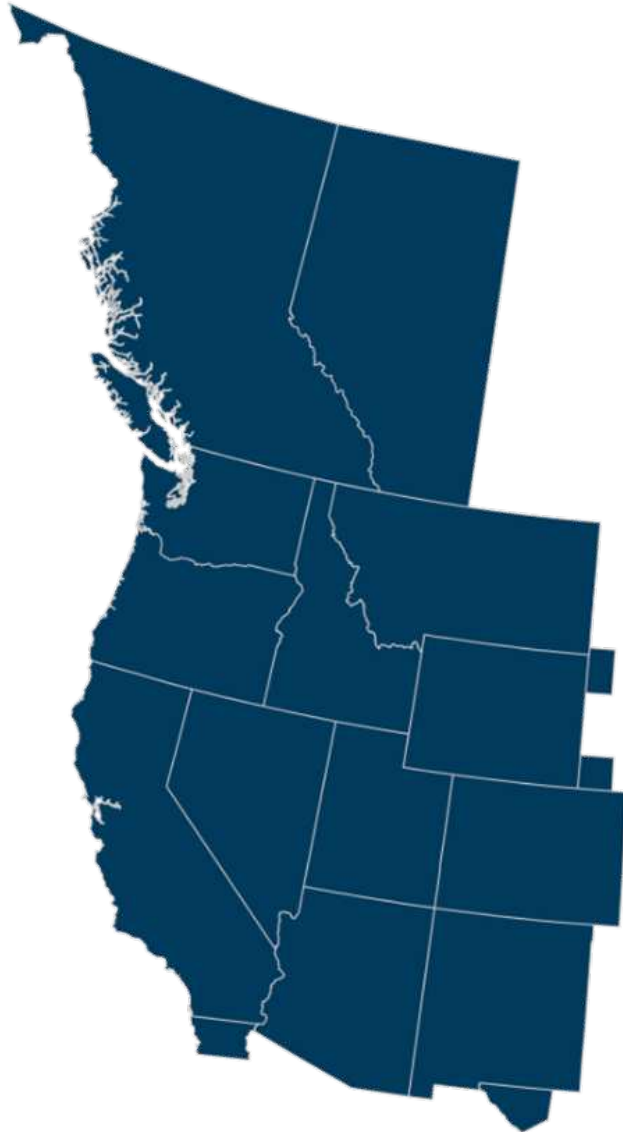
Melanie Frye  
President and CEO, WECC

# The Interconnected Power Grid



- The Western Interconnection is made up of about 156,000 miles of transmission lines
- Long, high-voltage lines were built to connect remote generating resources with distant population centers, primarily along the West Coast
- Due to unique geography, demography, and history, the Western interconnection is distinct from the other North American interconnections

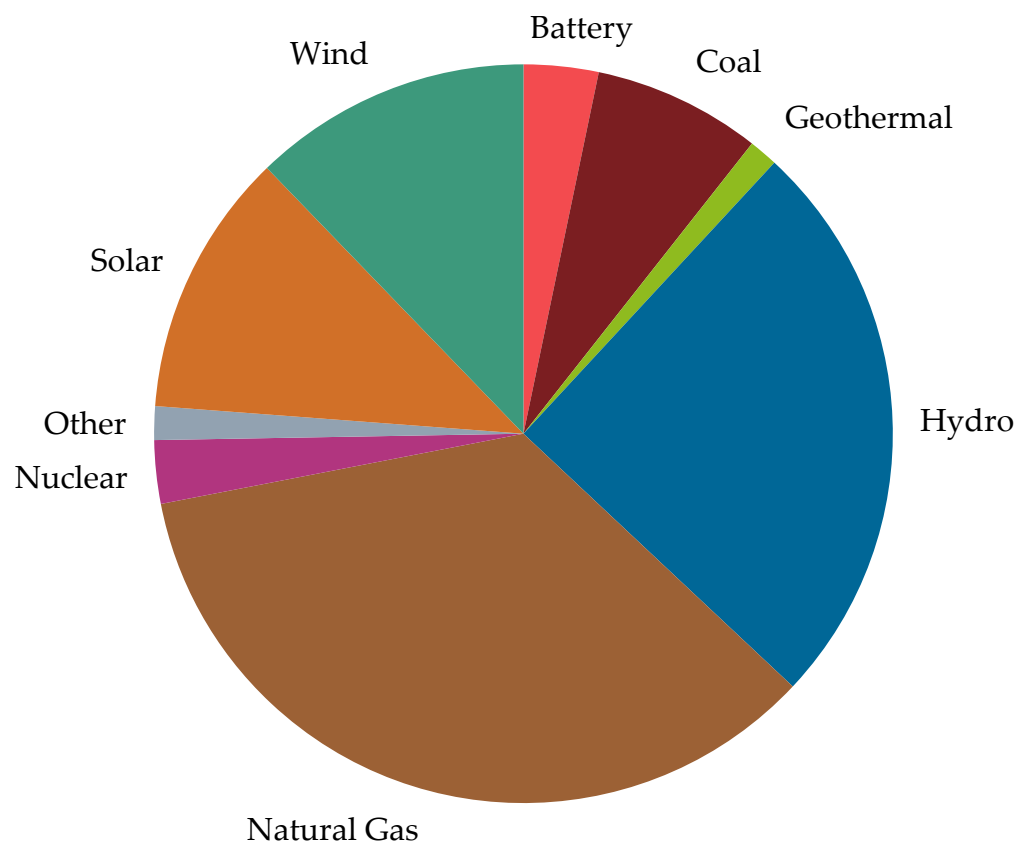
# Western Interconnection by the Numbers



|             |                             |
|-------------|-----------------------------|
| 90,000,000+ | People                      |
| 1,800,000   | Square miles                |
| 87%         | Public or protected land    |
| ~450        | Registered Entities         |
| 4           | Reliability Coordinators    |
| 37          | Balancing Authorities       |
| 52          | Transmission Operators      |
| 324         | Generator Owners            |
| 168         | GW 2024 Peak Demand         |
| 156,000     | Miles of transmission lines |

# The Western Commercial Resource Portfolio

2023 Total Installed Capacity (GW)



Updated September 2024

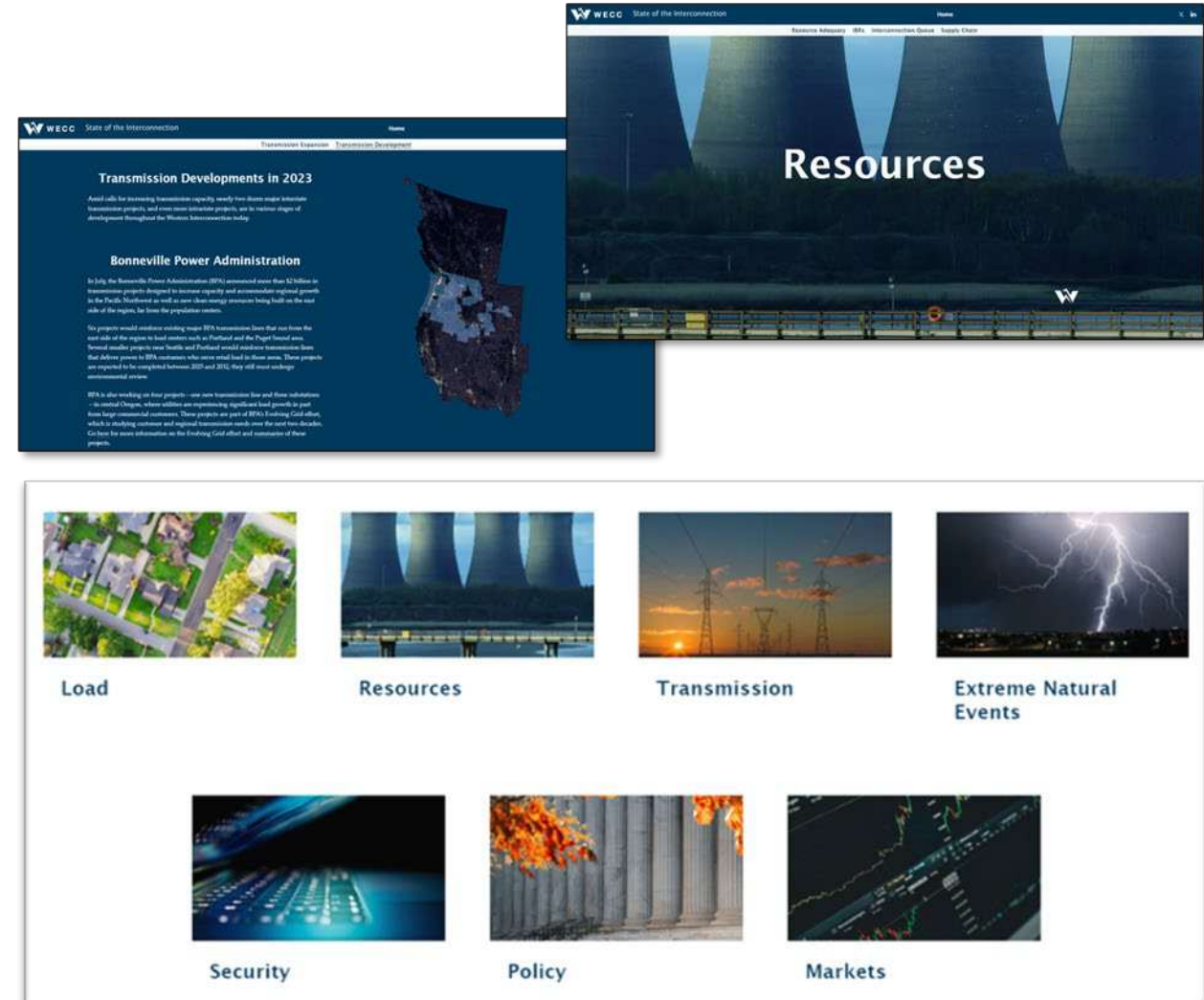
| Resource    | Capacity<br>GW |
|-------------|----------------|
| Battery     | 9.8            |
| Coal        | 22             |
| Geothermal  | 3.8            |
| Hydro       | 75.2           |
| Natural Gas | 104.7          |
| Nuclear     | 8.3            |
| Other       | 4.4            |
| Solar       | 34.7           |
| Wind        | 36.6           |

# 2024 *State of the Interconnection*

*“We envision a reliable and secure bulk power system in the Western Interconnection and work to effectively and efficiently mitigate risks to that system.”*



<https://feature.wecc.org/soti/index.html>



# Dynamic Change in the West

- The Western Interconnection is experiencing change at a magnitude and pace that is unprecedented. These changes include:
  - Extreme natural events due to climate change
  - Large-scale fossil fuel generator retirements to meet aggressive clean energy goals
  - Massive amounts of generators coming online that bring new technological and dispatchability challenges
  - Evolving and increasing cyber- and physical security threats
  - Rapidly changing demand such as electrification of transportation, adoption of consumer solar, advancement of Artificial Intelligence, and the development of large data centers

# WECC Overview

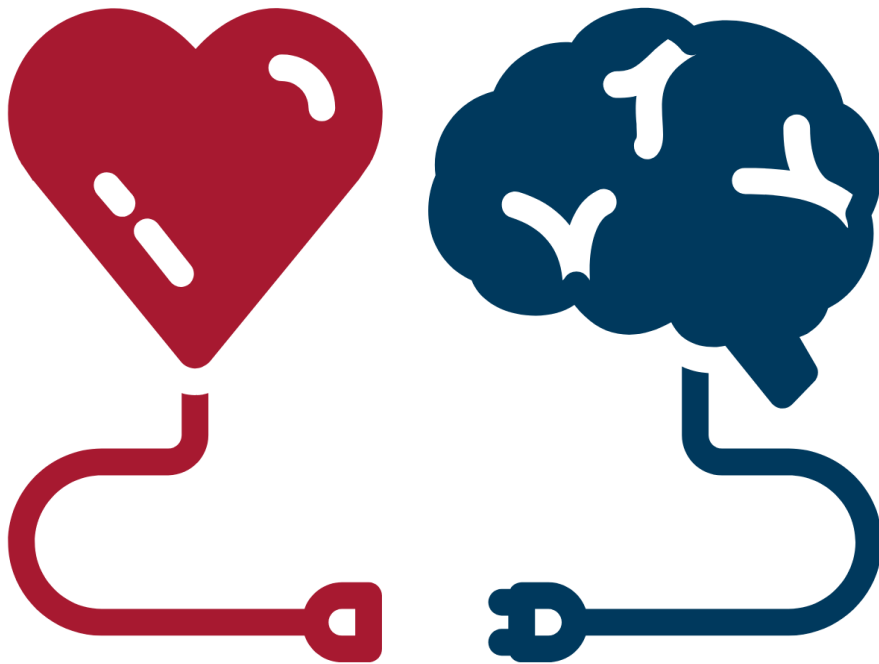
- Formed in 1967, WECC exists to mitigate risks to the reliability and security of the Bulk Power System in the west
- Responsible to develop, monitor, and enforce reliability standards and promote activities that ensure reliability
- Service territory
  - Canada (Alberta and British Columbia)
  - Northern part of Baja California, Mexico
  - All or parts of the 14 Western states in between



# WECC's Why

*"Electricity is an integral part of the fabric of modern life.*

*WECC strengthens that fabric to preserve and improve society's future."*



What happens when  
the power goes out?

# 2003—The Great Northeast Blackout



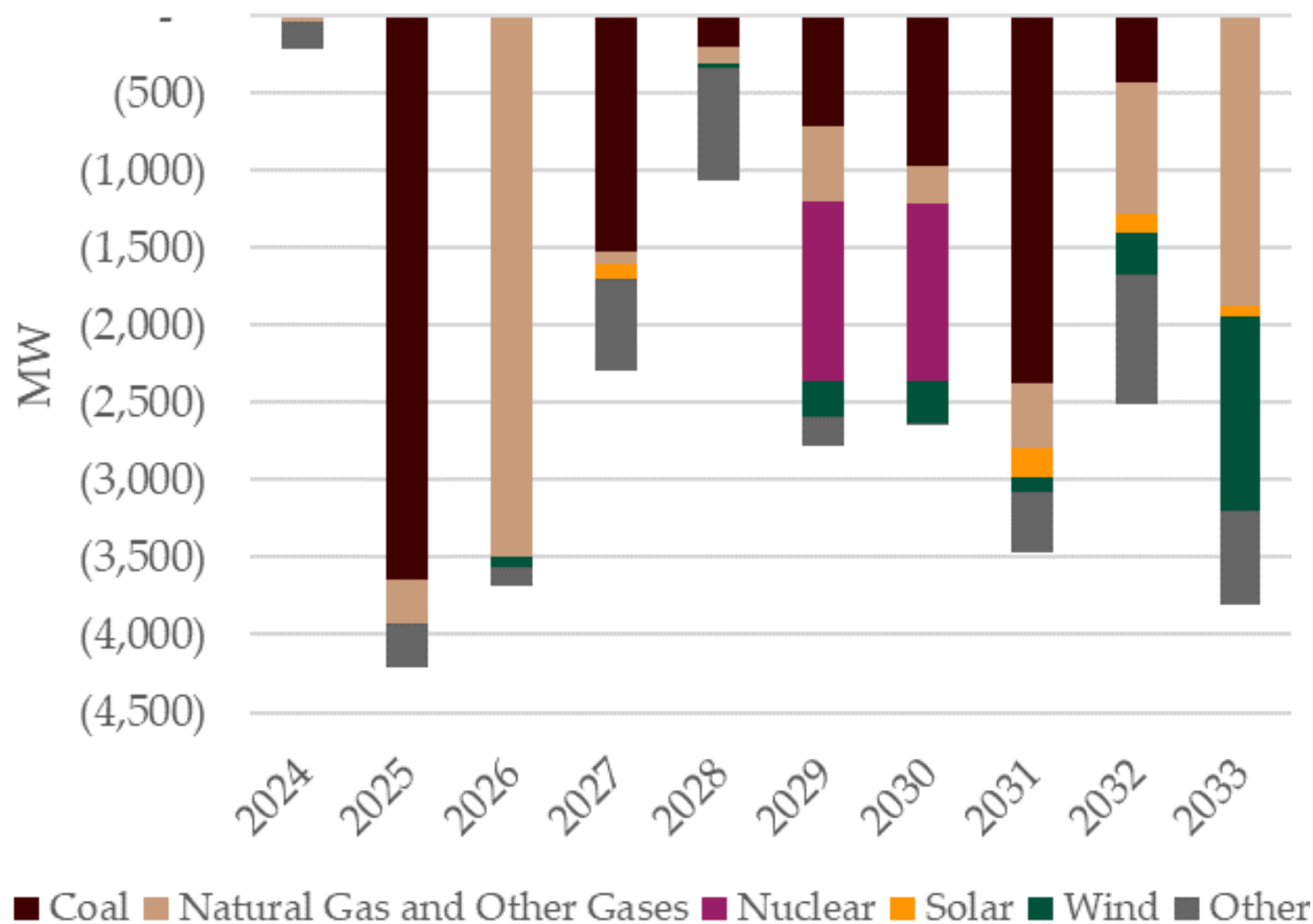
YouTube: <https://youtu.be/nd3teNgUq8E>

# WECC's *Western Assessment of Resource Adequacy*

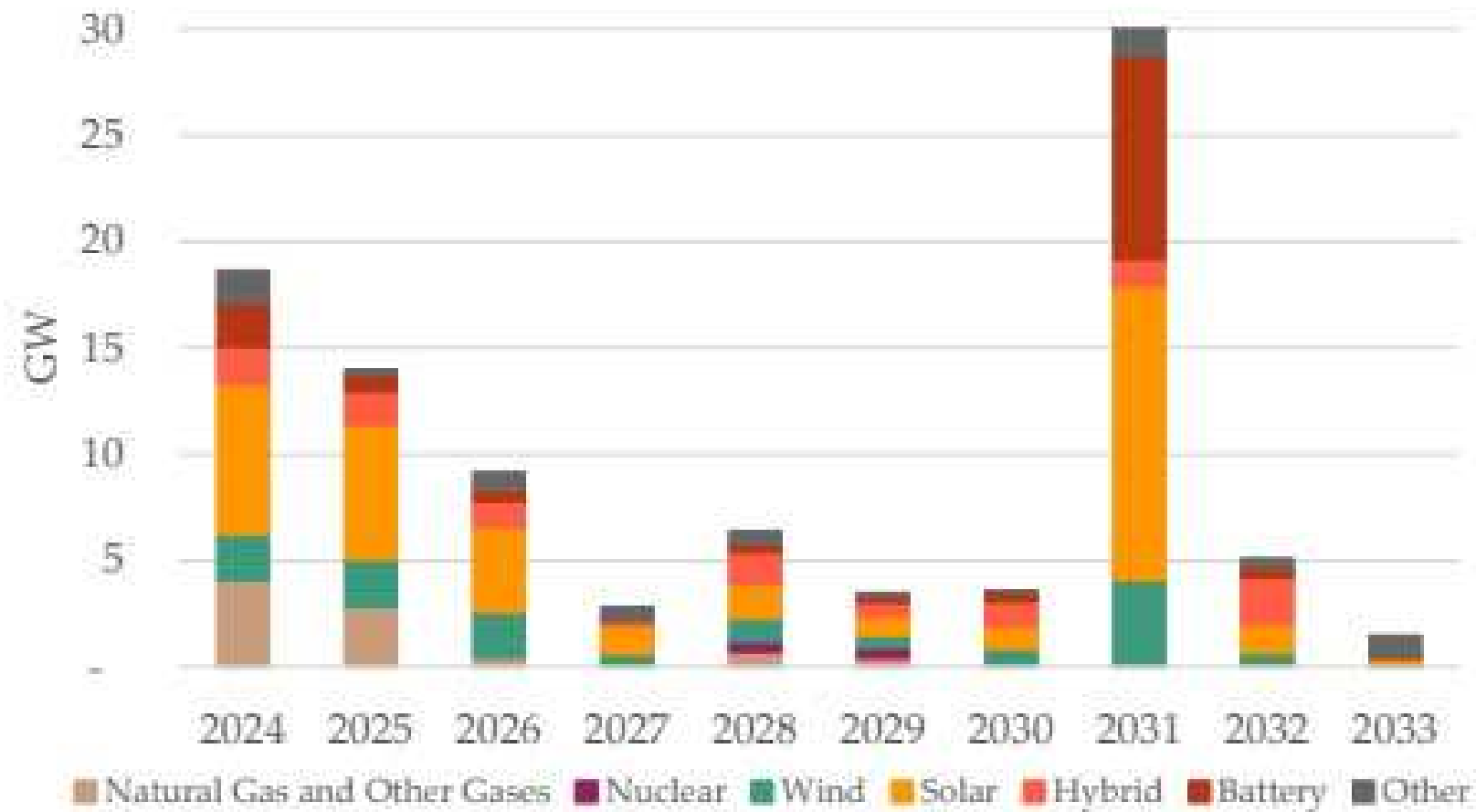
- Resource and demand variability increasing
- Resource additions (and retirements) coming at an unprecedented rate
- High load growth expected over the next several years



# Projected Resource Retirements

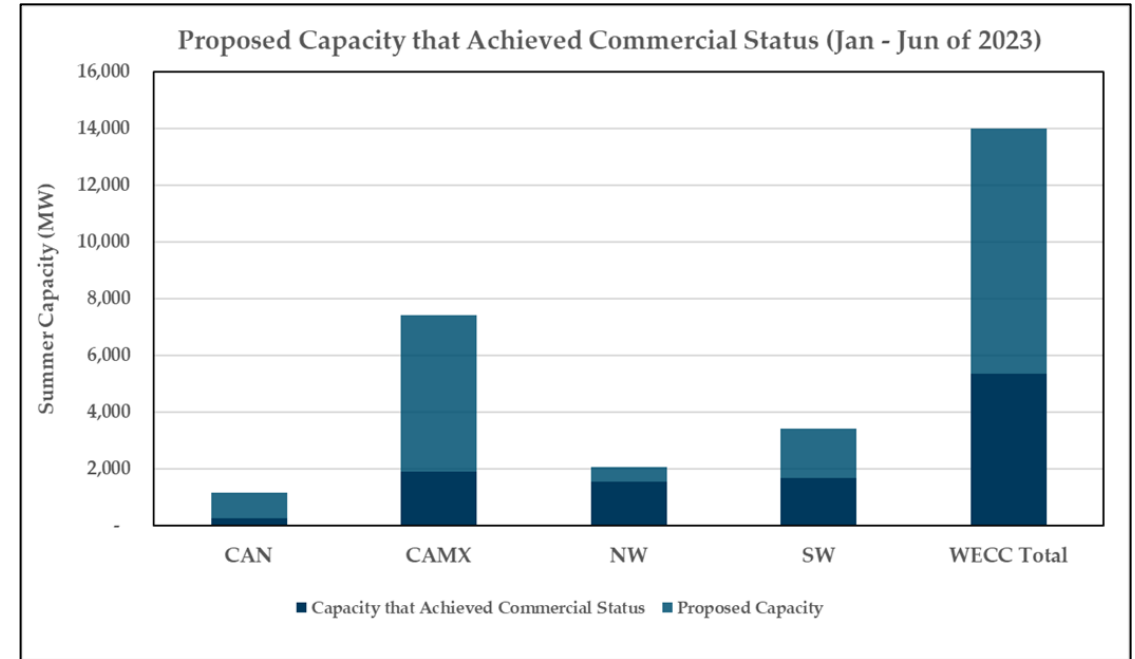


# Projected Resource Additions



# Resource Adequacy Risks Across the West

- Supply chain—project delays
  - Transformers (10 Months–3 Years)
  - Circuit breakers (1.5–2.5 Years)
  - Switchgears (1 Year)
- Increasing costs
- Skilled labor shortage
- 2024 summer proposed capacity additions = 17 GW



| WECC: Capacity Additions* |                                  |                                                                          |                                                                         |                                           |
|---------------------------|----------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------|
| Region                    | Proposed for Summer of 2023 (MW) | Proposed Capacity that Achieved Commercial Status by Summer of 2023 (MW) | Proposed Capacity that Achieved Commercial Status by Summer of 2023 (%) | Proposed Capacity for Summer of 2024 (MW) |
| CAN                       | 1,137                            | 265                                                                      | 23%                                                                     | 2,395                                     |
| CAMX                      | 7,409                            | 1,901                                                                    | 26%                                                                     | 5,871                                     |
| NW                        | 2,060                            | 1,528                                                                    | 74%                                                                     | 4,991                                     |
| SW                        | 3,401                            | 1,653                                                                    | 49%                                                                     | 3,802                                     |
| WECC Total                | 14,007                           | 5,347                                                                    | 38%                                                                     | 17,059                                    |

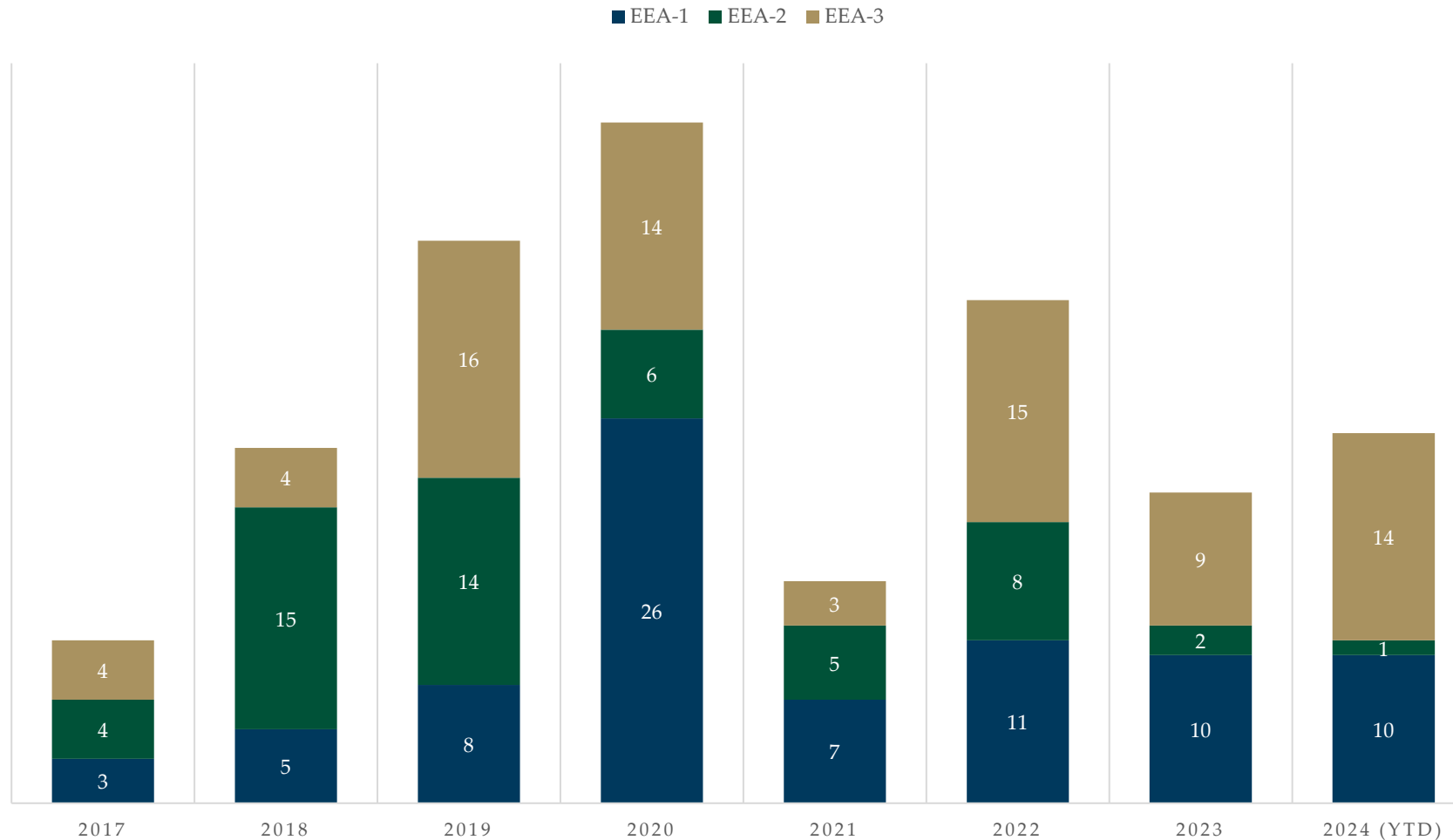
\*Capacity additions of any tier between January and July of listed year.

# Case Study: Large Loads and Electrification

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- Data centers spur load growth at Grant County PUD
  - 2023 Northwest Region Forecast projects 20% in load growth over the next five years
  - Grant County PUD – Peak demand of 1,000 MW in 2023
  - 2,000 MW of load in the queue, half of which are data centers, and the rest are mostly EV anode battery manufacturers

# Energy Emergency Alert Trends in the West



\*Data as of August 1, 2024

# Wildfire: A Growing Risk in the West



| State/Province   | Acres burned<br>2023 | Acres burned<br>2022 |
|------------------|----------------------|----------------------|
| Alberta          | 5,436,318            | 323,357              |
| Arizona          | 319,543              | 124,165              |
| British Columbia | 7,019,139            | 329,730              |
| California       | 357,361              | 309,287              |
| Colorado         | 40,527               | 45,732               |
| Idaho            | 96,542               | 436,733              |
| Montana          | 113,152              | 137,509              |
| Nevada           | 9,851                | 58,402               |
| New Mexico       | 172,823              | 859,906              |
| Oregon           | 197,338              | 456,082              |
| Utah             | 18,200               | 27,245               |
| Washington       | 155,401              | 173,659              |
| Wyoming          | 7,657                | 25,766               |



# Grid *FUNDAMENTALS*

November 5-6, 2024



