WECC

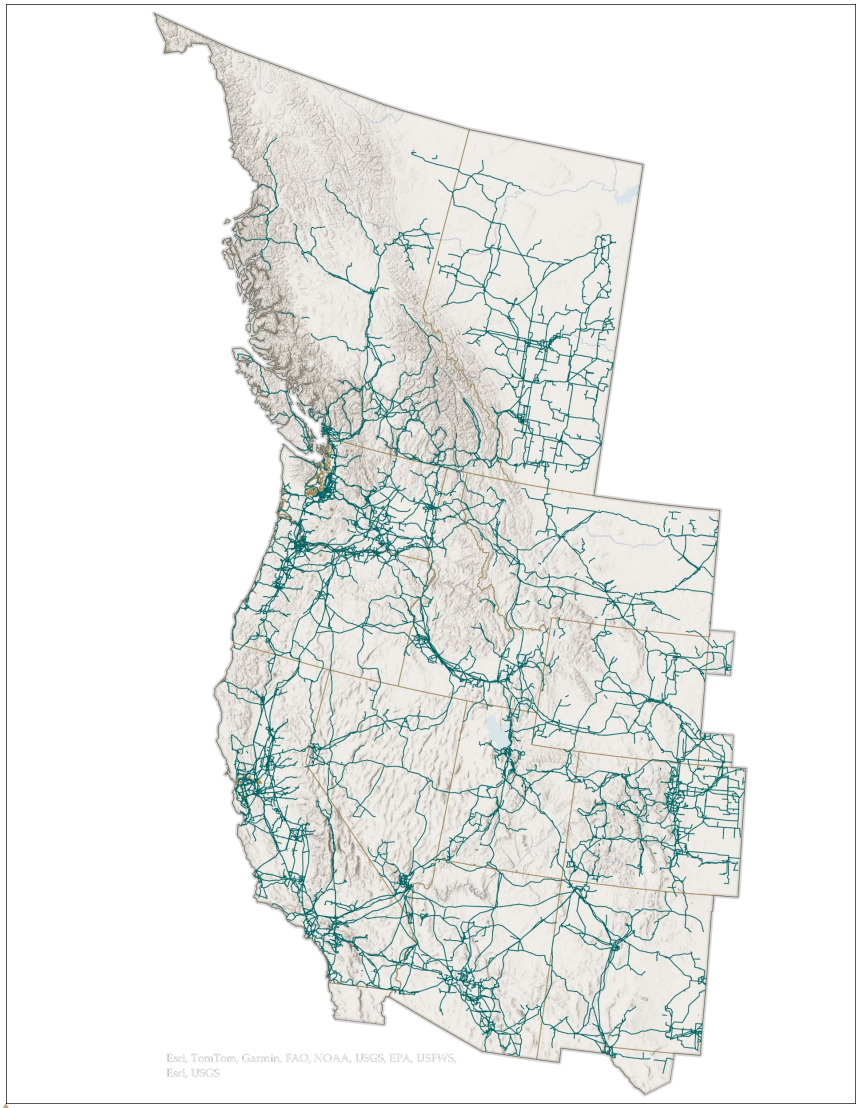
NAIOP Regional Public Policy Summit

September 26, 2024

Melanie Frye

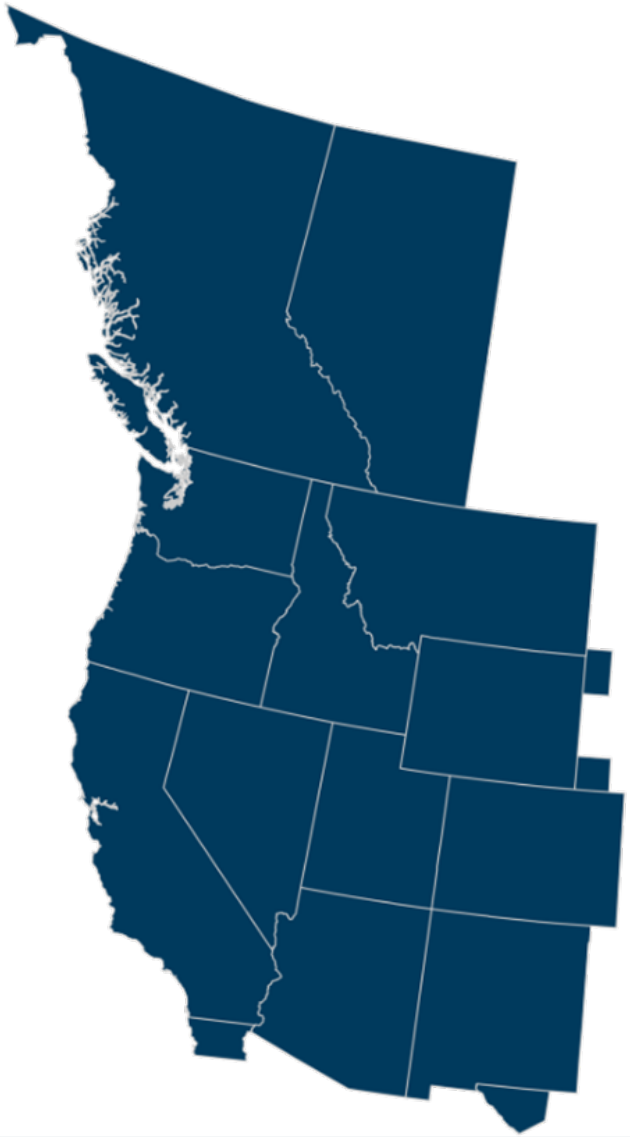
President and CEO, WECC

The Interconnected Power Grid



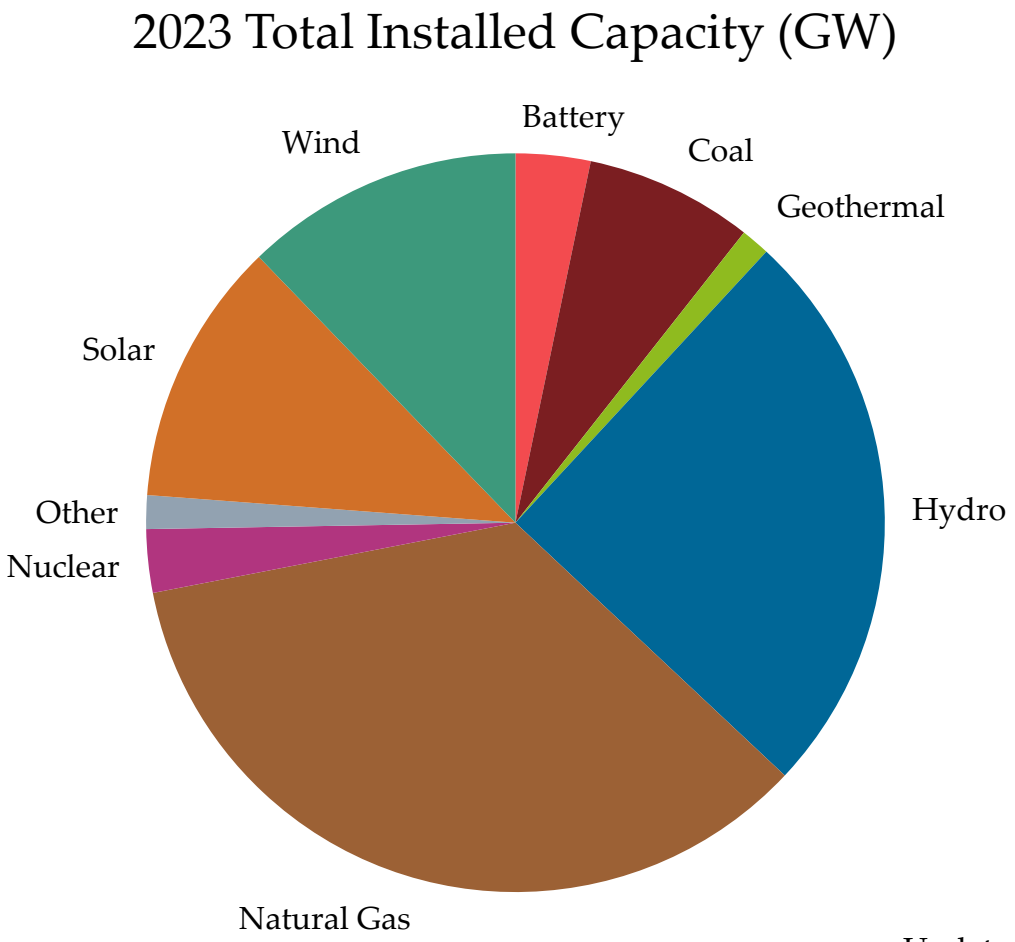
- The Western Interconnection is made up of about 156,000 miles of transmission lines
- Long, high-voltage lines were built to connect remote generating resources with distant population centers, primarily along the West Coast
- Due to unique geography, demography, and history, the Western interconnection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



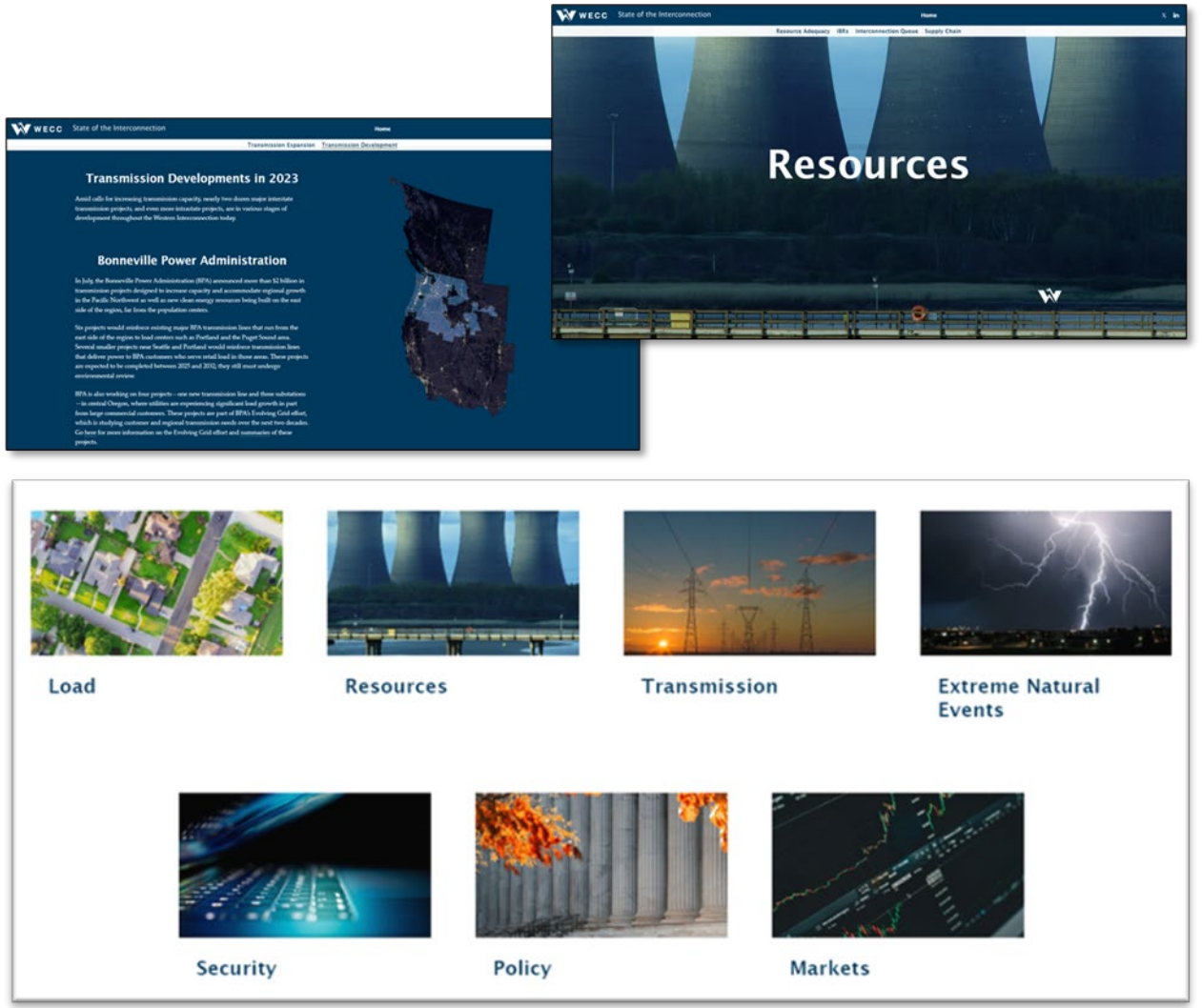
Resource	Capacity GW
Battery	9.8
Coal	22
Geothermal	3.8
Hydro	75.2
Natural Gas	104.7
Nuclear	8.3
Other	4.4
Solar	34.7
Wind	36.6

Updated September 2024

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

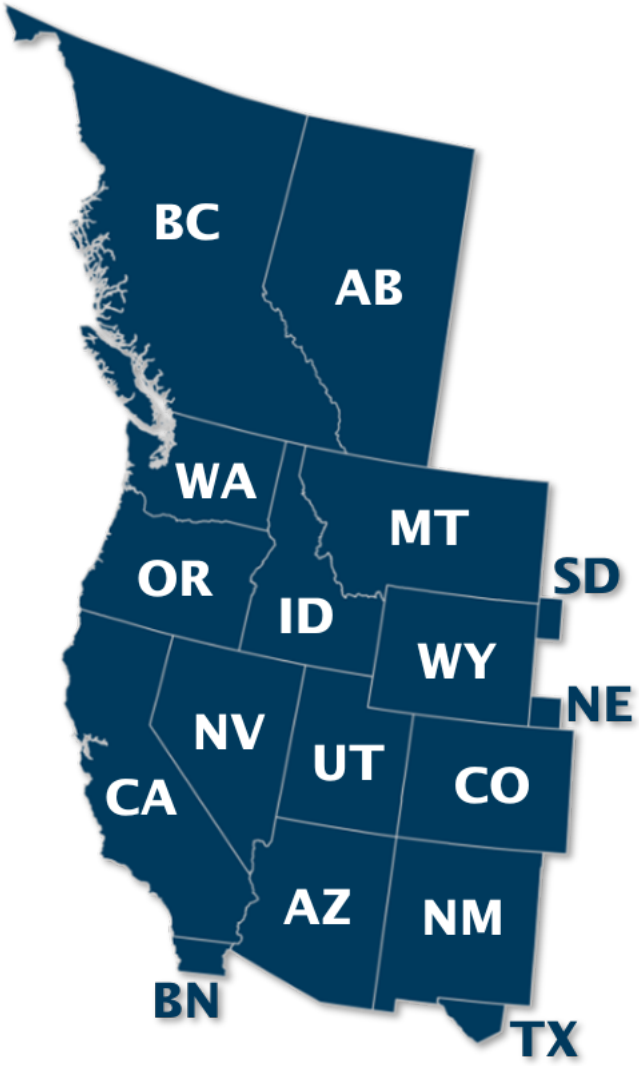


Dynamic Change in the West

- 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

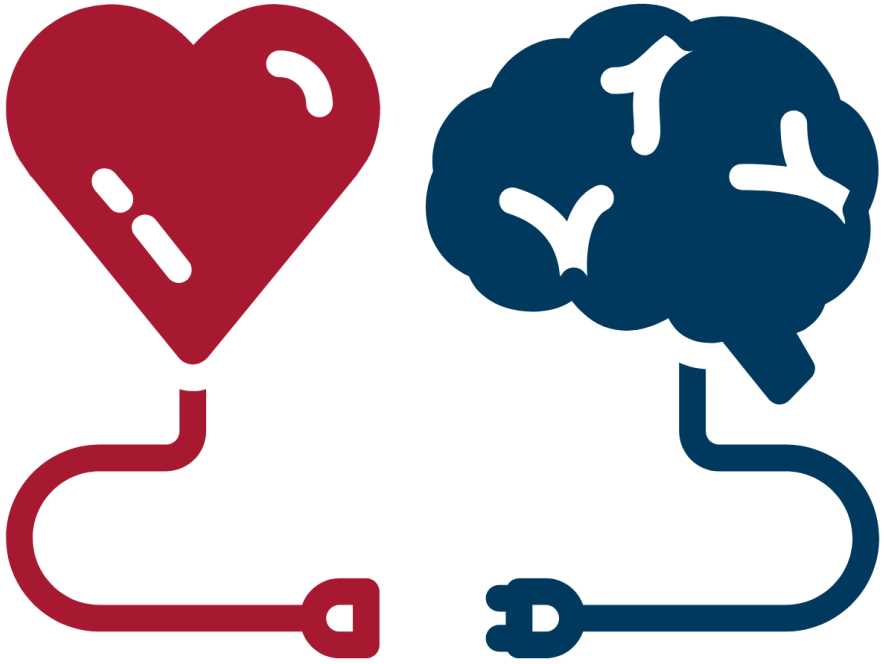
- Formed in 1967, WECC exists to mitigate risks to the reliability and security of the Bulk Power System in the west
- Responsible to develop, monitor, and enforce reliability standards and promote activities that ensure reliability
- Service territory
  - Canada (Alberta and British Columbia)
  - Northern 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

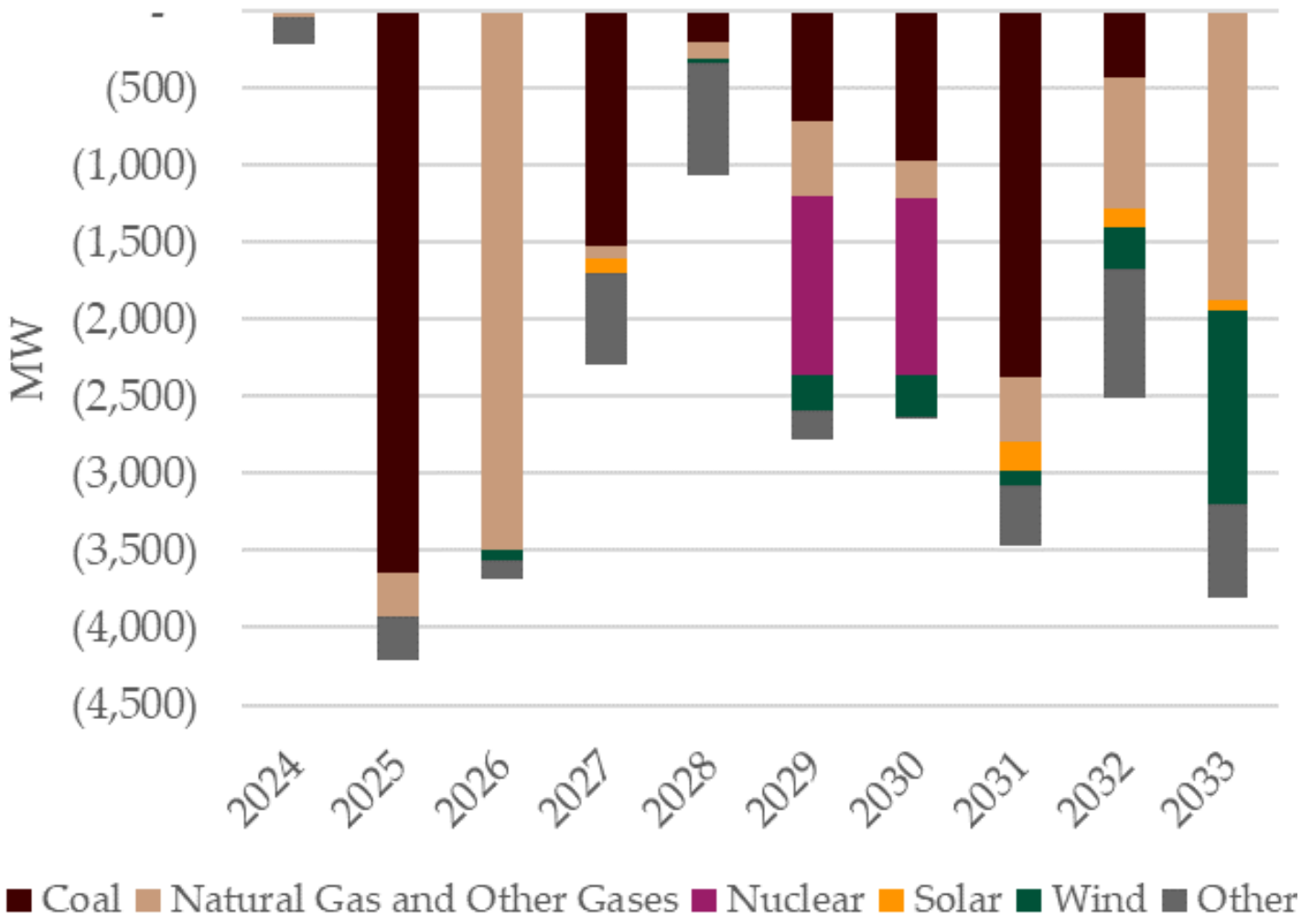
WECC's *Western Assessment of Resource Adequacy*

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

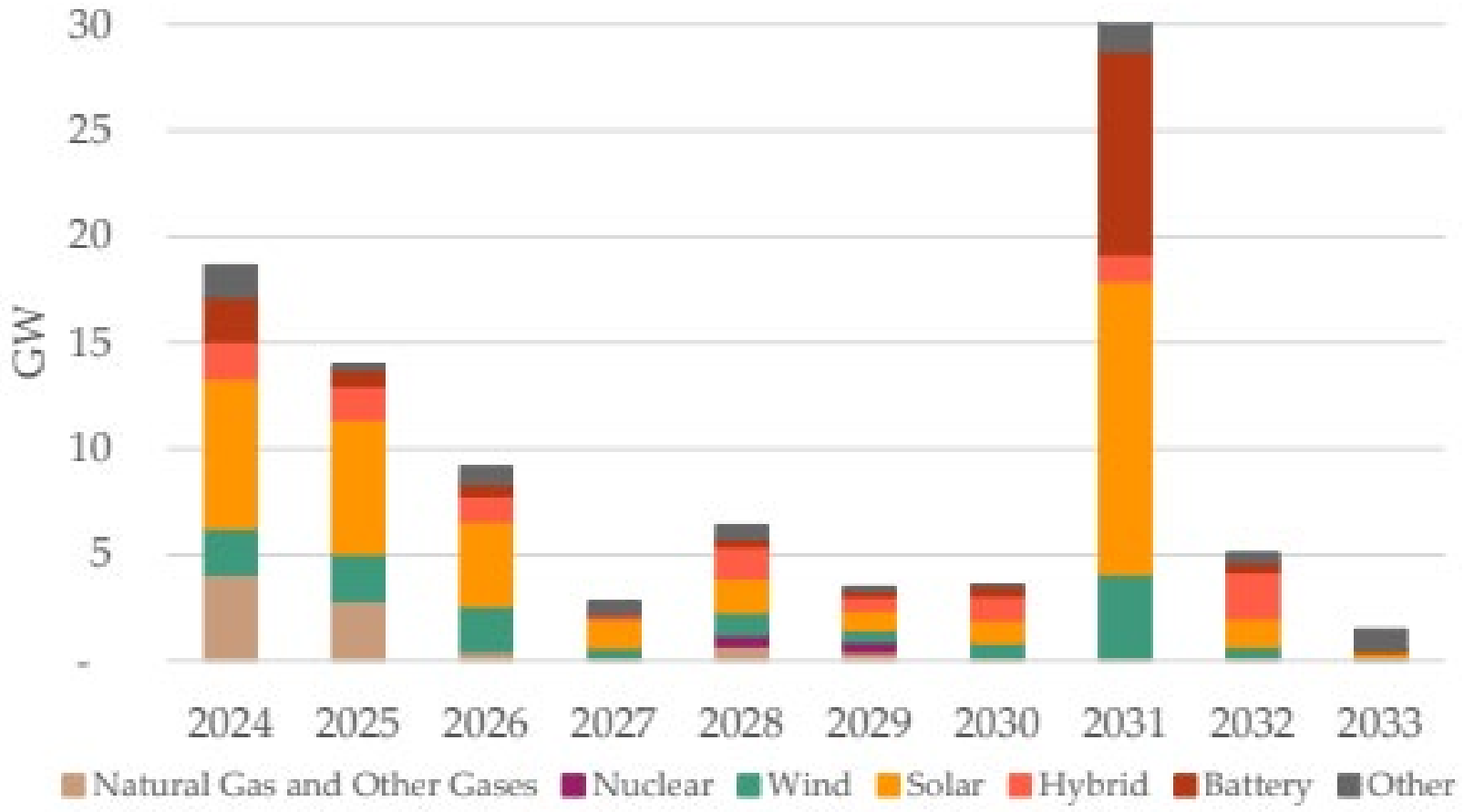
OVERVIEW

LEARN MORE

Projected Resource Retirements

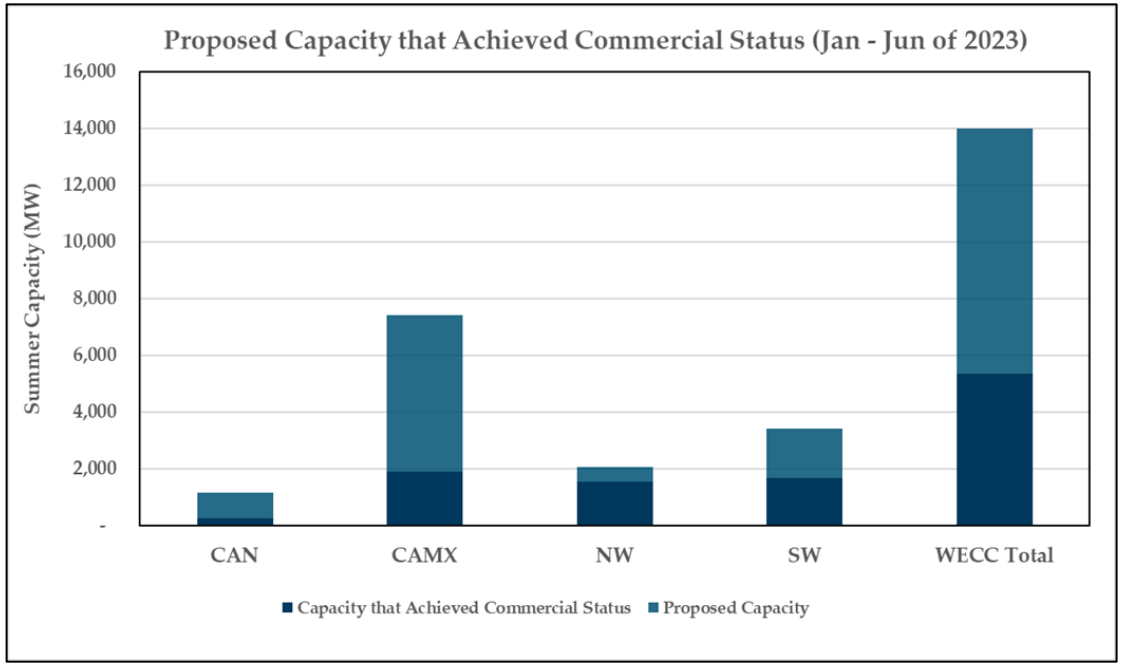


Projected Resource Additions



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

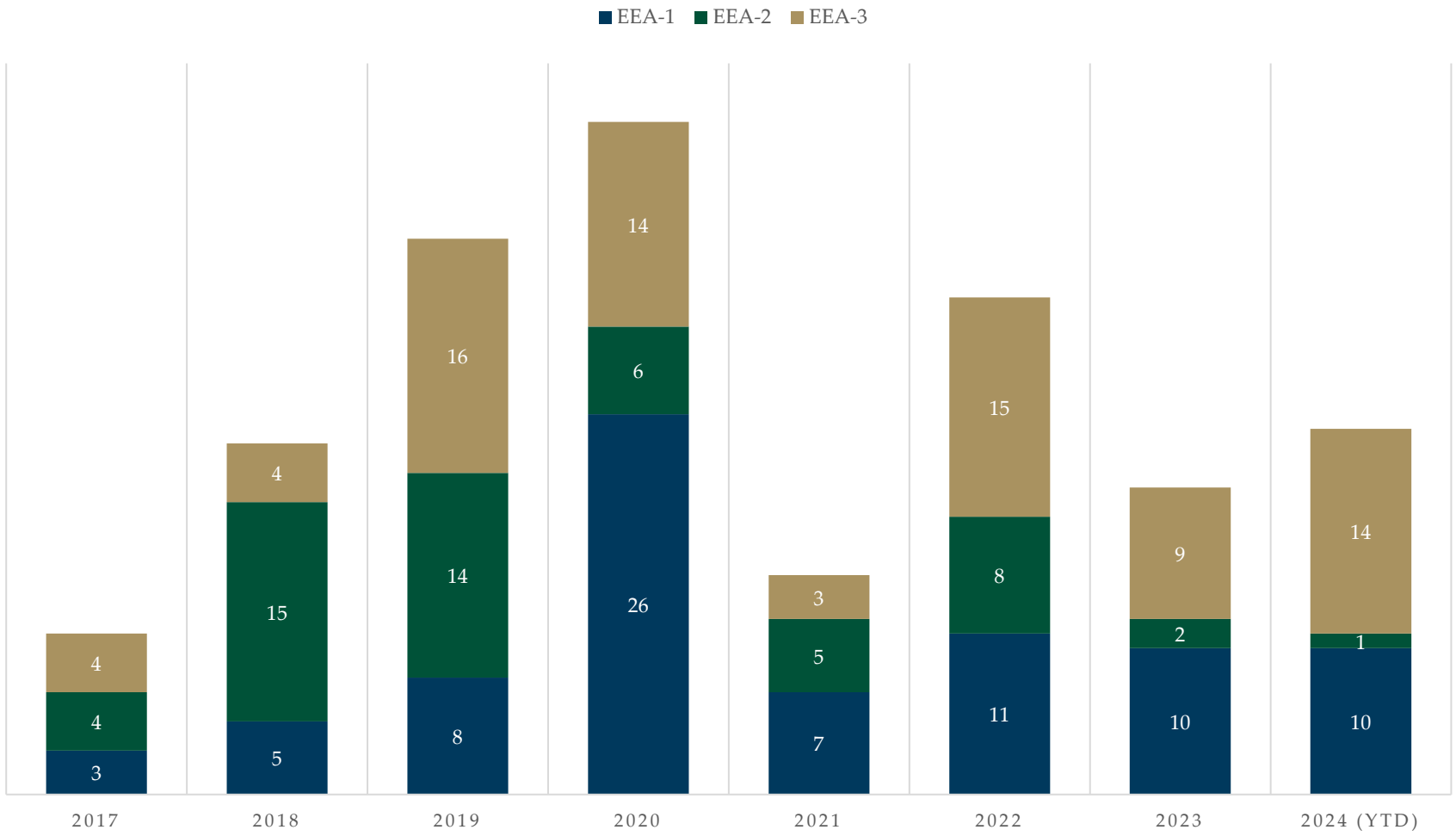


WECC: Capacity Additions*				
Region	Proposed for Summer of 2023 (MW)	Proposed Capacity that Achieved Commercial Status by Summer of 2023 (MW)	Proposed Capacity that Achieved Commercial Status by Summer of 2023 (%)	Proposed Capacity for Summer of 2024 (MW)
CAN	1,137	265	23%	2,395
CAMX	7,409	1,901	26%	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

- 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 2023	Acres burned 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

<Limited-Disclosure>

WECC

Electric Reliability and Security for the West

www.wecc.org