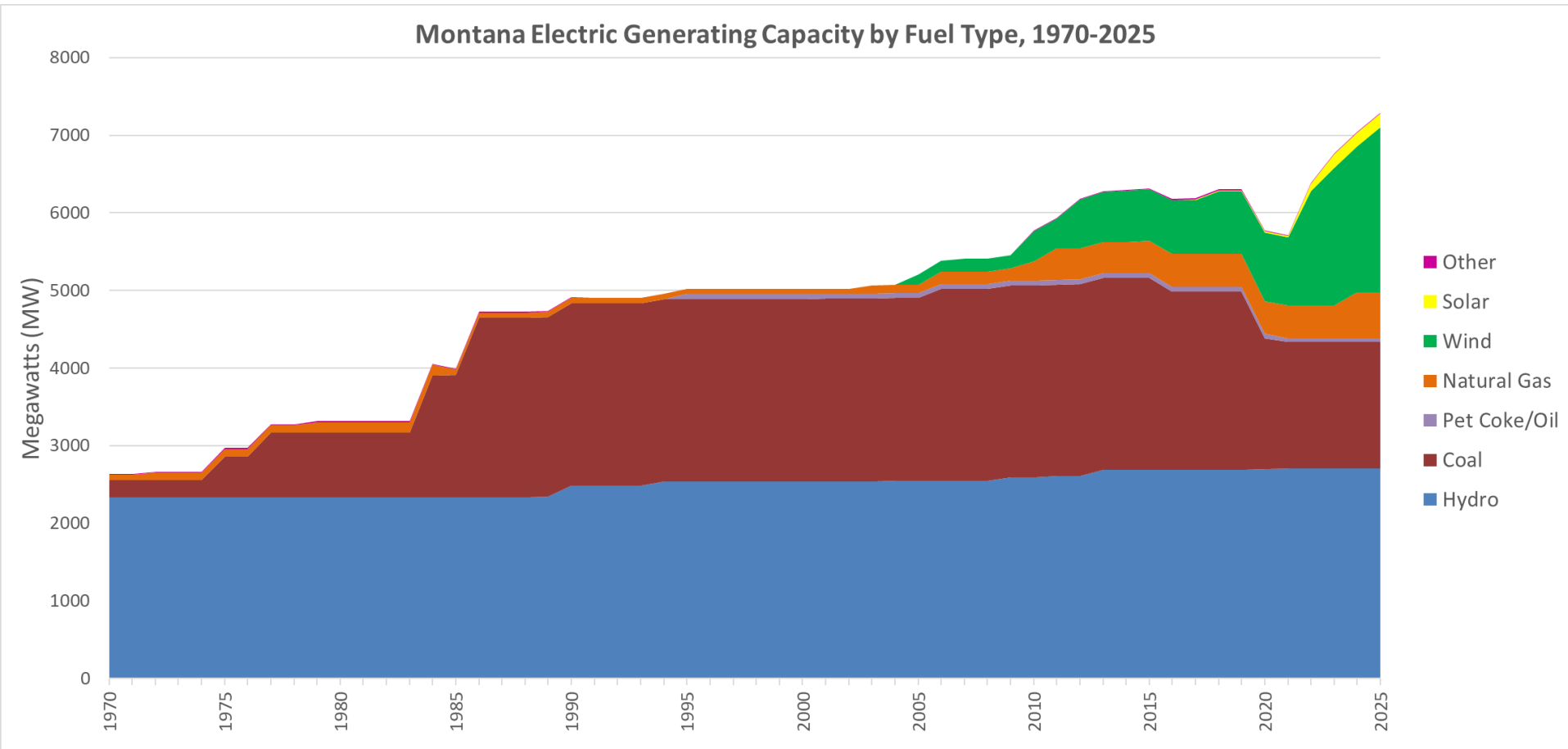


Generation Work Group

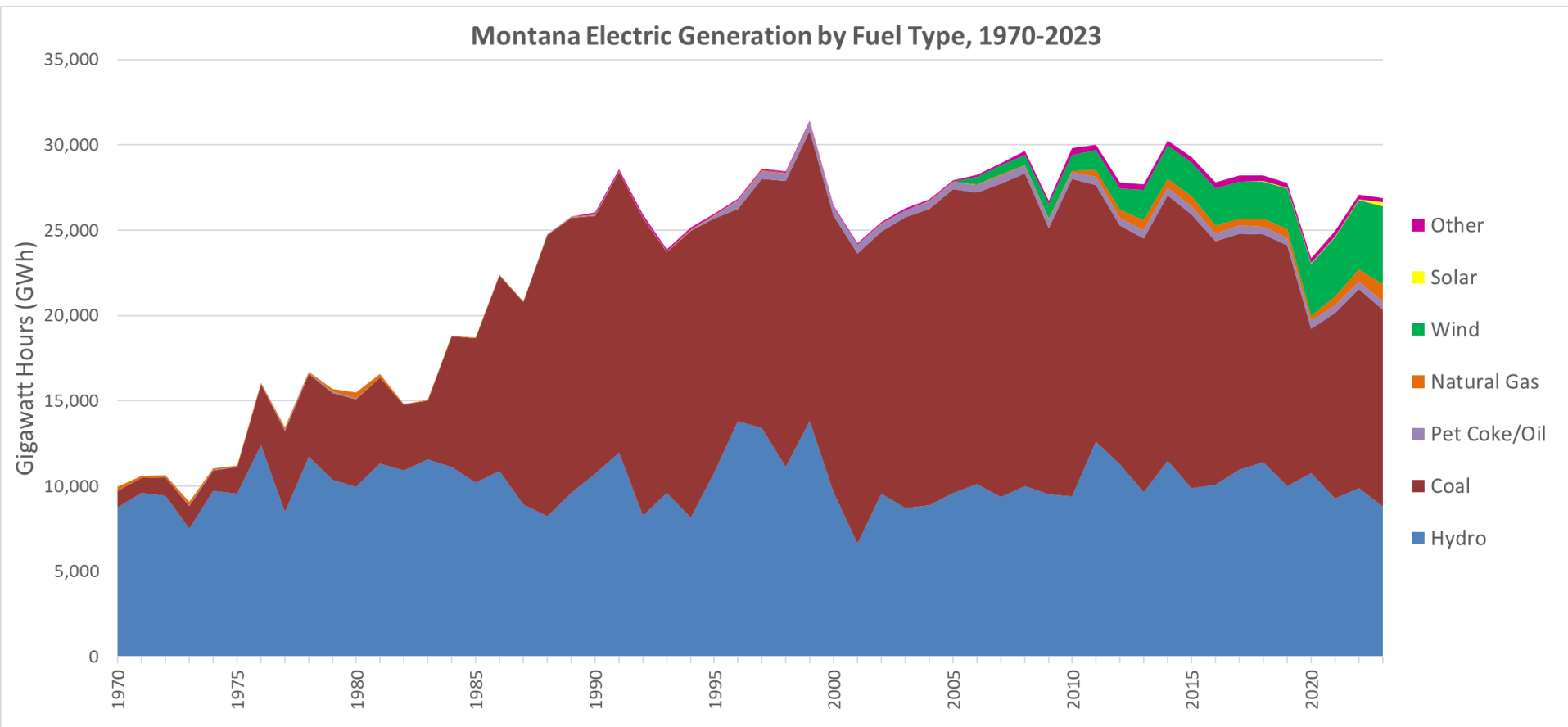
Energy Supply Trends & Resource Adequacy Assessments

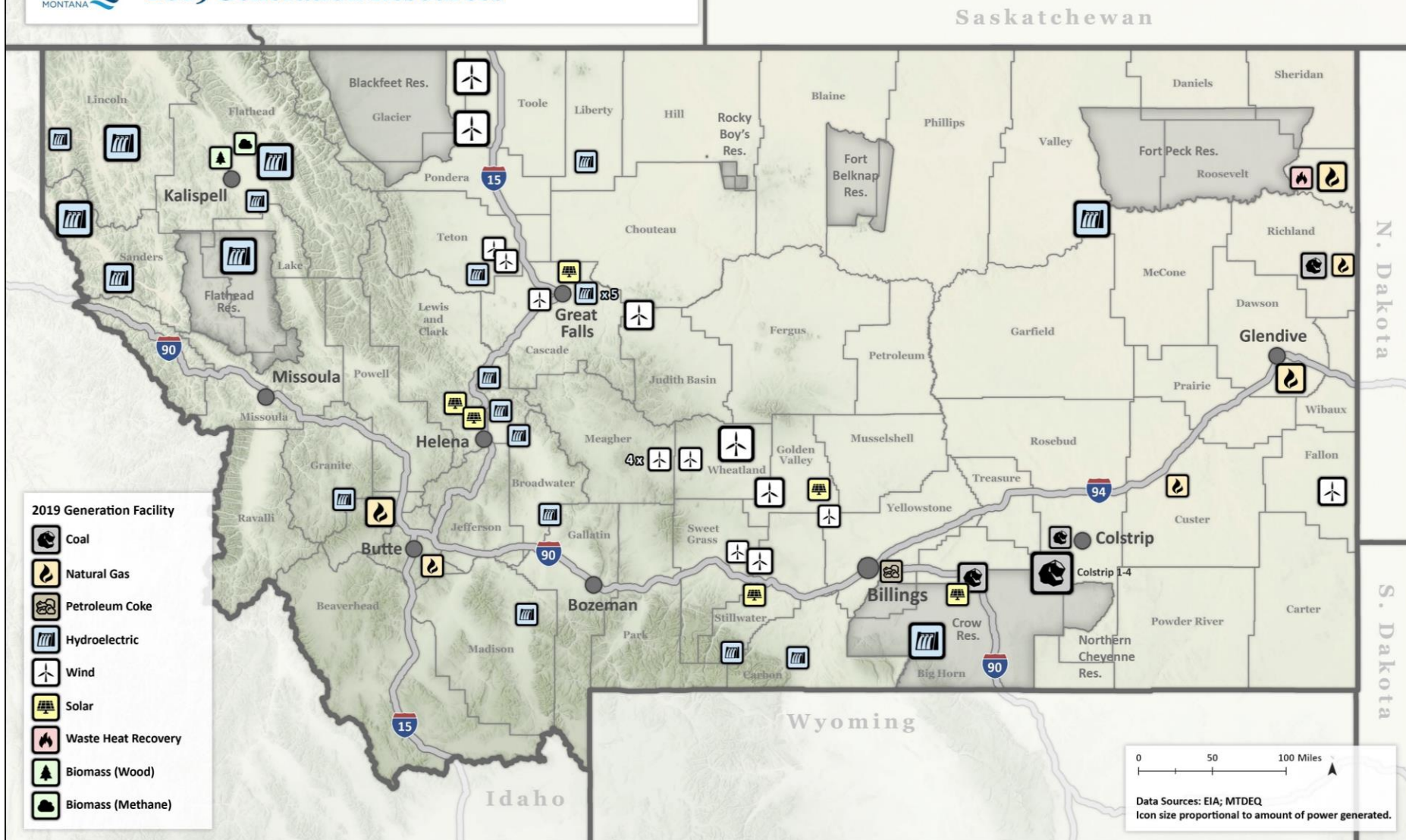
October 6, 2025

Montana Generating Capacity, 1970-2025

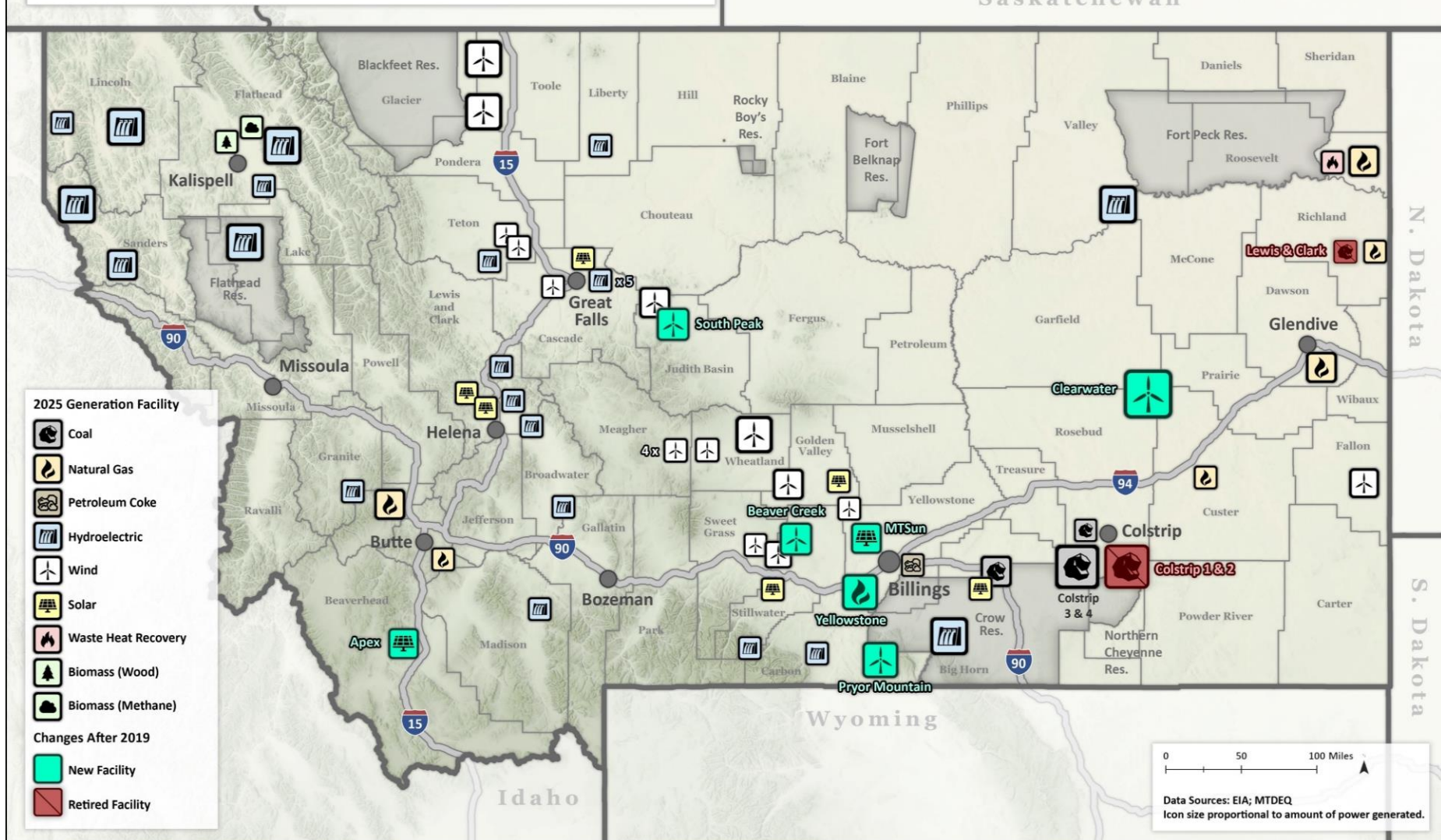


Montana Energy Generation, 1970-2025





Source: Energy Information Administration (EIA) Form 860



Source: EIA Form 860

Power Plant Retirements, 2020-2025



Colstrip Units 1 & 2

- Rosebud County
- 614 MW, Coal
- Retired 2020
- Owners: Puget Sound Energy (50%), Talen (50%)

Photo Credit: DEQ

Power Plant Retirements, 2020-2025



Lewis & Clark Generating Station

- Richland County
- 50 MW, Coal
- Retired 2021
- Montana-Dakota Utilities

Photo Credit: Montana-Dakota Utilities

Power Plant Additions, 2020-2025



Pryor Mountain Wind

- Carbon County
- 240 MW, Wind
- Operational 2021
- Owner/Offtaker: PacifiCorp

Photo Credit: PacifiCorp

Power Plant Additions, 2020-2025



Clearwater Wind

- Rosebud, Custer & Garfield Counties
- 750 MW, Wind
- Operational 2023-2024
- Owners: NextEra, Portland General Electric
- Offtakers: Portland General Electric, Avista, Puget Sound Energy

Photo Credit: Montana Governor's Office

Power Plant Additions, 2020-2025



Beaver Creek Wind

- Stillwater County
- 248 MW, Wind
- Operational 2025
- Owner: Puget Sound Energy

Photo Credit: Puget Sound Energy

Power Plant Additions, 2020-2025



South Peak Wind

- Judith Basin County
- 80 MW, Wind
- Operational 2020
- Owner: Allete
- Offtaker: NorthWestern Energy

Photo Credit: DEQ

Power Plant Additions, 2020-2025



Apex Solar

- Beaverhead County
- 80 MWac, Solar PV
- Operational 2023
- Owner: Clenera
- Offtaker: NorthWestern Energy

Photo Credit: Enlight/Clenera

Power Plant Additions, 2020-2025



MT Sun

- Yellowstone County
- 80 MWac, Solar PV
- Operational 2023
- Owner: Greenbacker
- Offtaker: NorthWestern Energy

Photo Credit: Greenbacker

Power Plant Additions, 2020-2025



Yellowstone County Generating Station

- Yellowstone County
- 175 MW, Natural Gas
- Operational 2024
- Owner: NorthWestern Energy

Photo Credit: NorthWestern Energy

Power Plant Additions, 2020-2025



GCC Trident

- Broadwater County
- 4 MWac, Solar PV
- Operational 2024
- Owner: GCC Trident

Photo Credit: American Cement Association

Western Electricity Coordinating Council--WECC

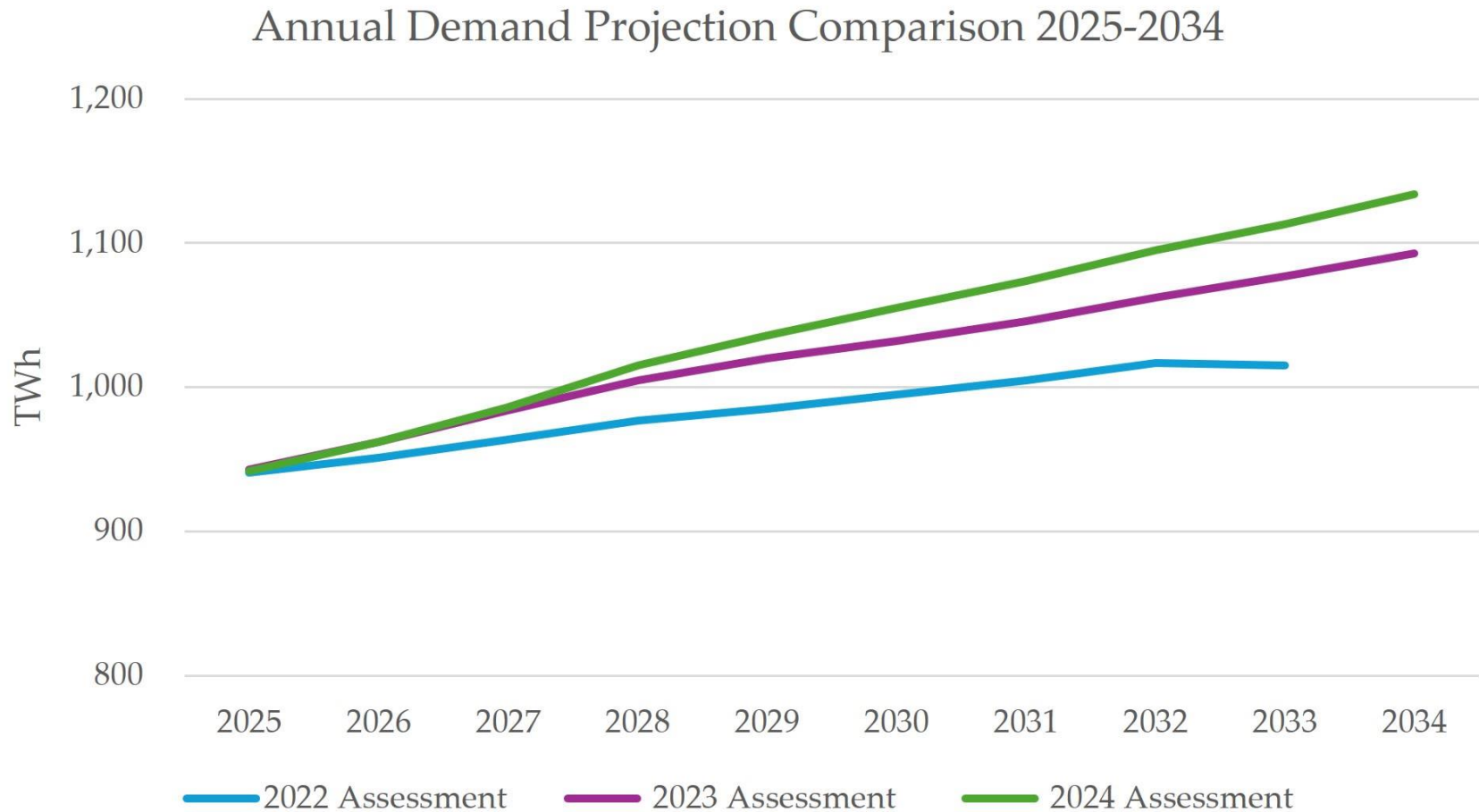
Western Assessment of Resource Adequacy, 2024



- The forecast rate of demand growth over the next decade is double what was forecast just two years ago.
- Never has generation been built in the West at the rate called for in many current resource plans.
- Challenges like supply chain issues, geopolitical turbulence, a shortage of skilled workers, siting issues, and the increasing interconnection queue can disrupt planned resources.

Source: WECC

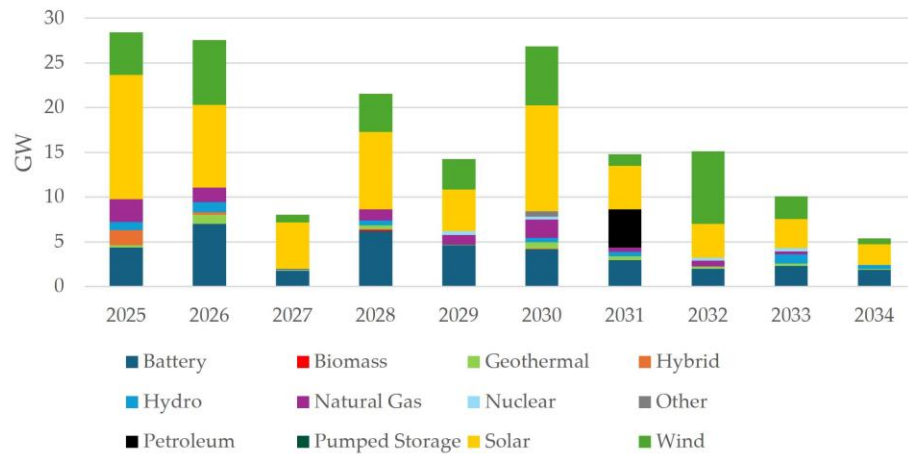
WECC--Western Assessment of Resource Adequacy, 2024



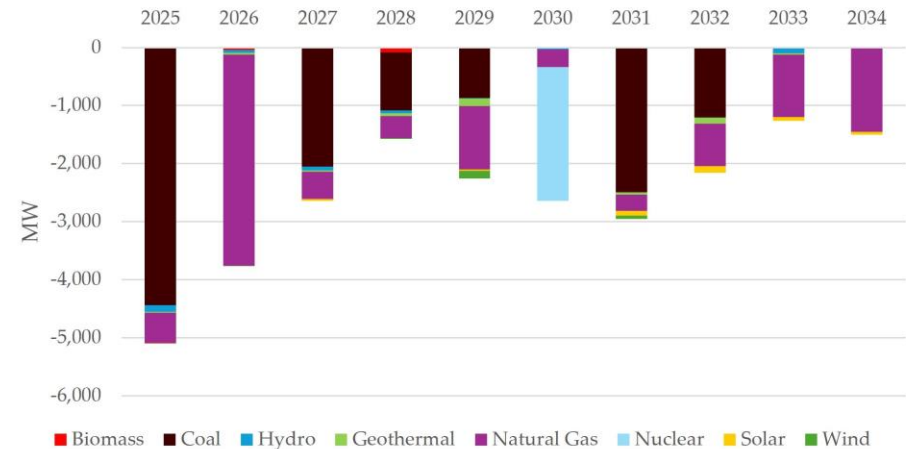
Source: WECC

WECC—Western Assessment of Resource Adequacy, 2024

Western Interconnection Planned Resource Additions



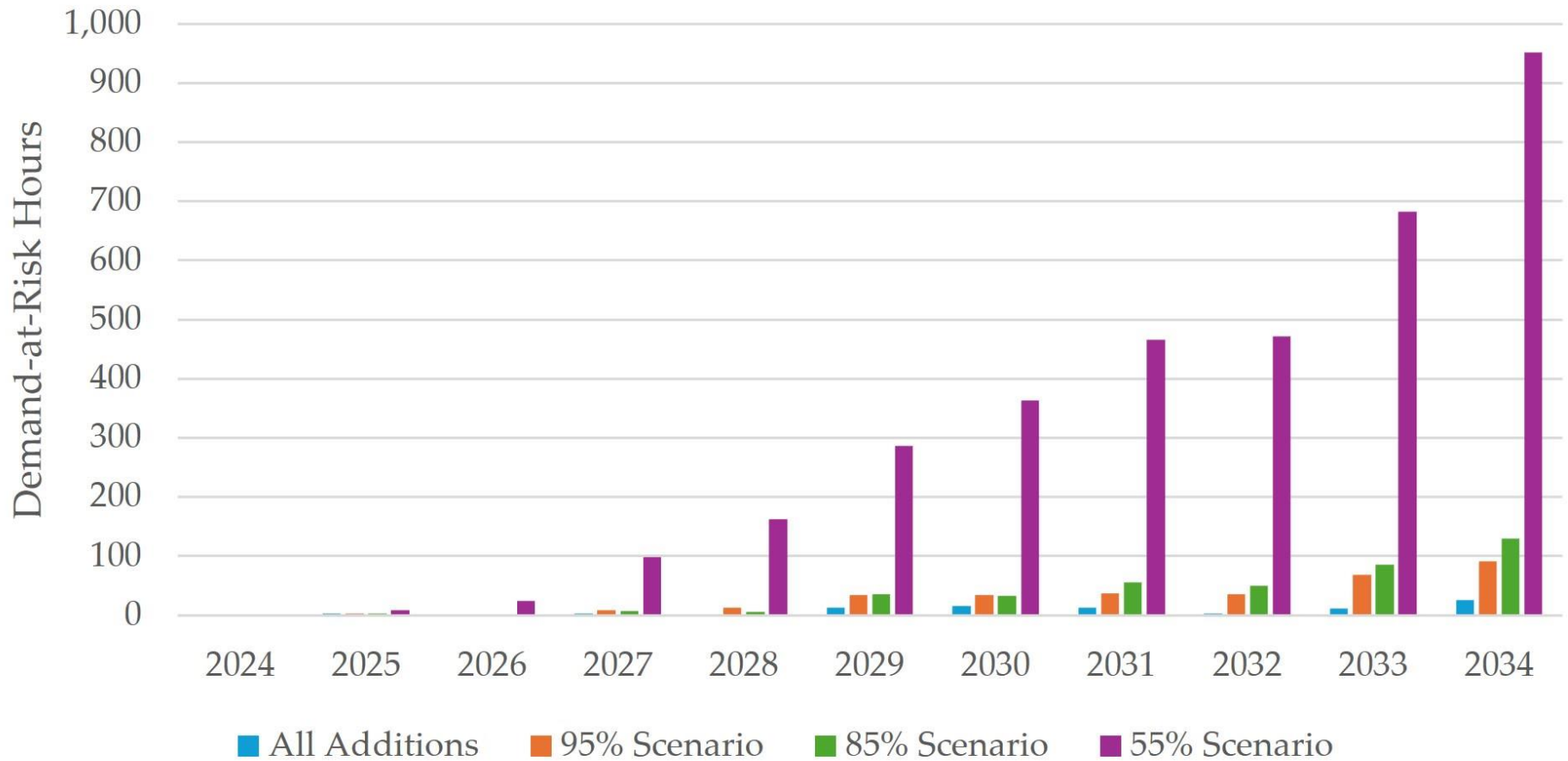
Western Interconnection Planned Retirements 2025-2034



Source: WECC

WECC—Western Assessment of Resource Adequacy, 2024

Comparison of Resource Build Out Scenarios



Source: WECC

WECC—Western Assessment of Resource Adequacy, 2024

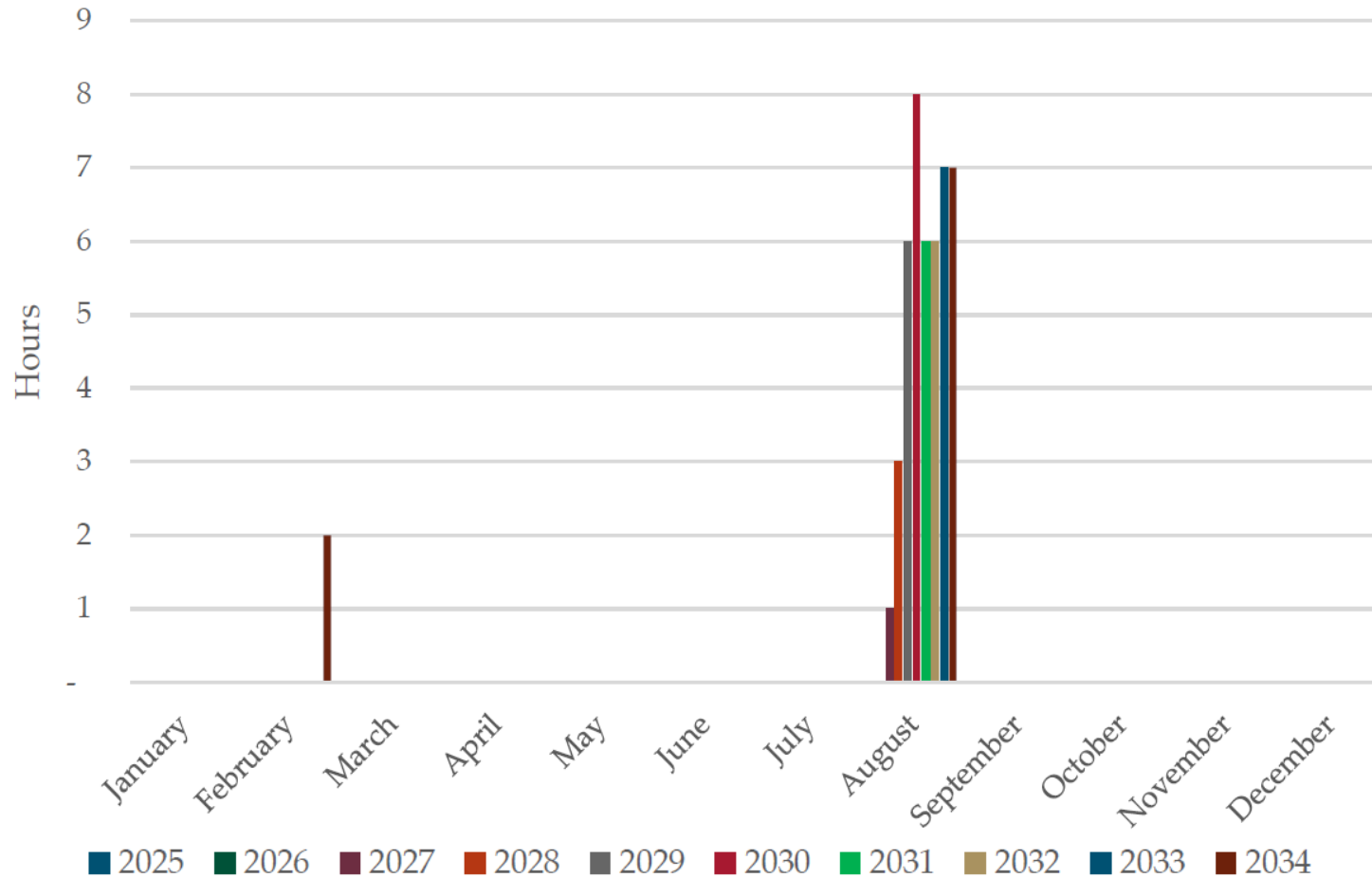
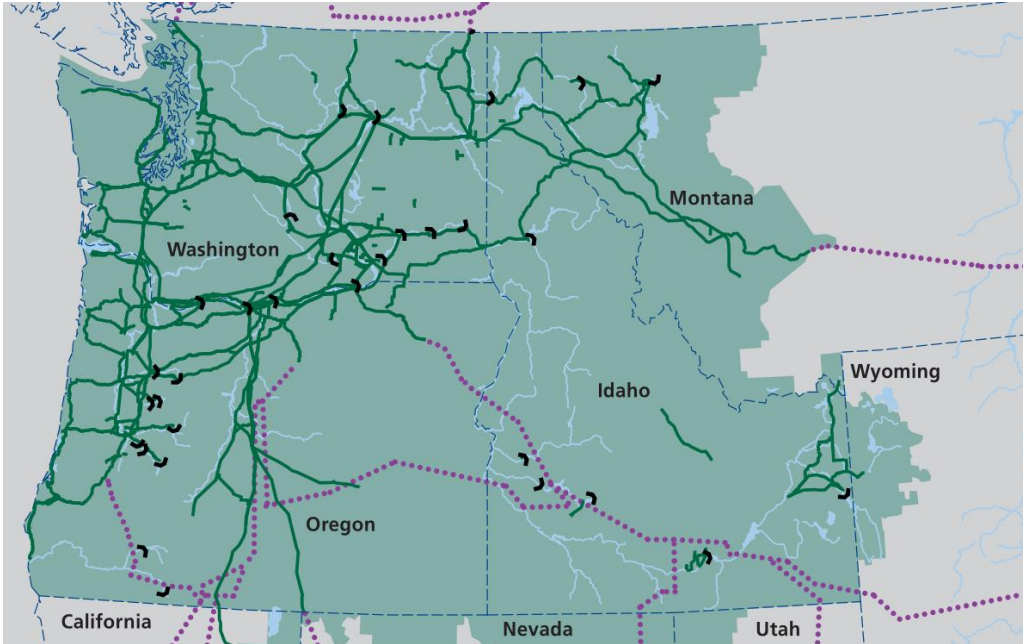


Figure 4: Demand-at-risk hours in the NW-Northeast subregion in the 95% scenario

Source: WECC

NW Power & Conservation Council—2029 Adequacy Assessment



Source (map): Bonneville Power Administration

- Assesses resource adequacy in 2029 relative to 2021 Power Plan.
- While the region is facing substantial load growth uncertainty, projected generation additions, energy efficiency and demand response programs, coal-to-gas conversions, and increased transmission capacity maintain adequacy in near term.
- If data center load growth accelerates, the resource strategy will be insufficient to maintain adequacy.

NW Power & Conservation Council—2029 Adequacy Assessment

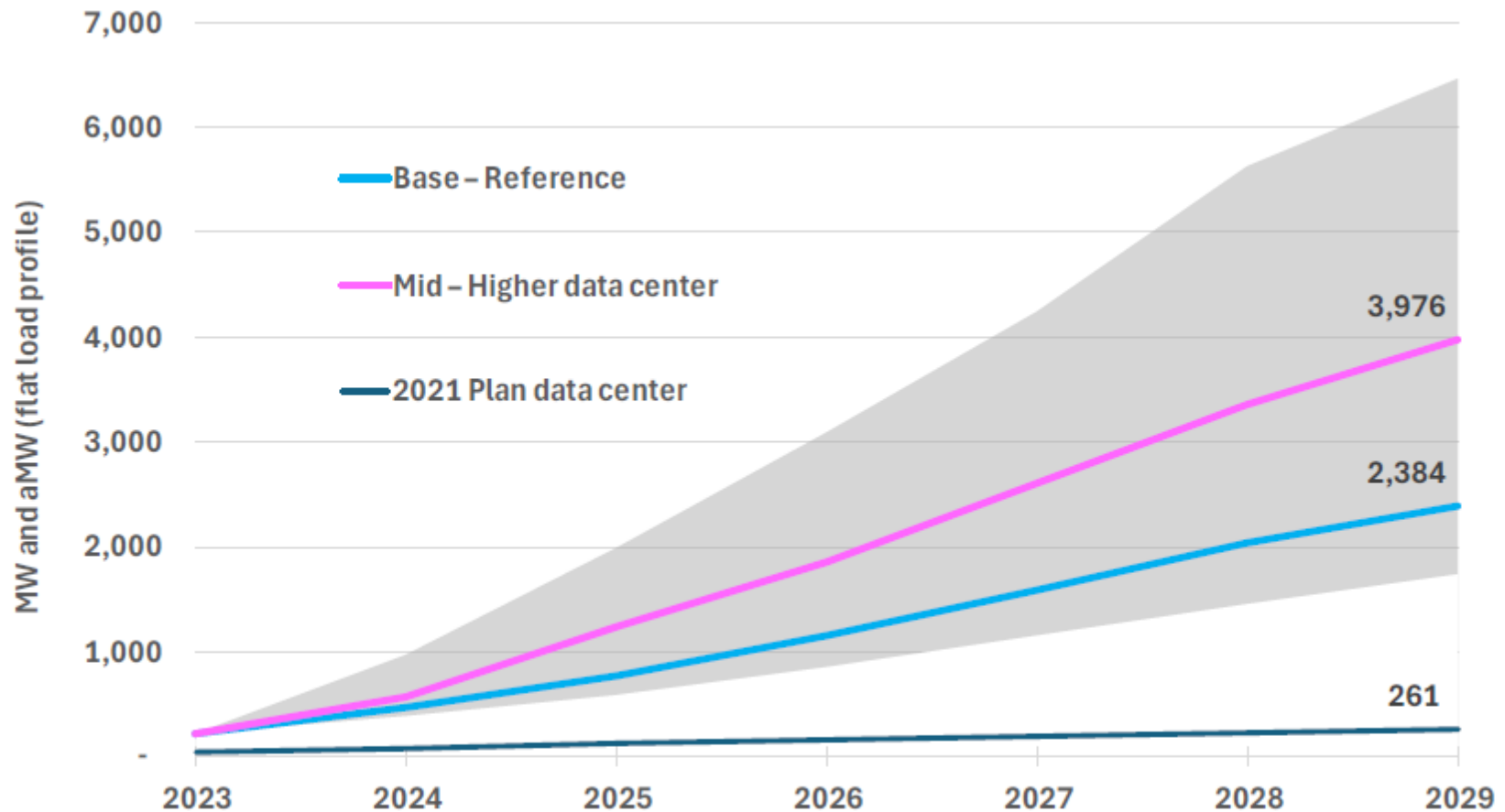


Figure 2. Incremental data center and fab growth forecast, 2023 to 2029

Source: NW Power & Conservation Council

NW Power & Conservation Council—2029 Adequacy Assessment

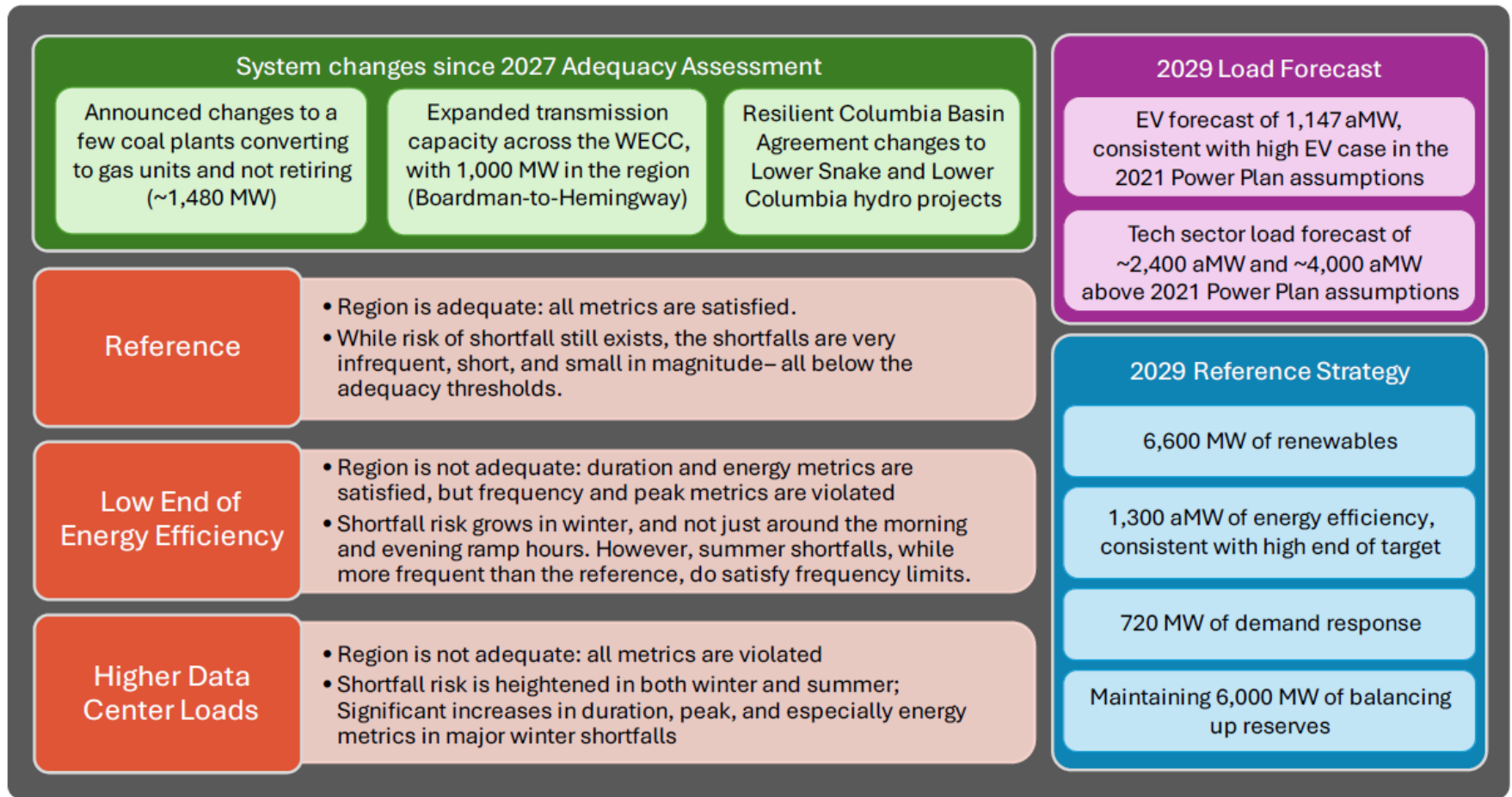


Figure 8. High-level summary of 2029 Adequacy Assessment

Source: NW Power & Conservation Council

NW Power & Conservation Council—2029 Adequacy Assessment

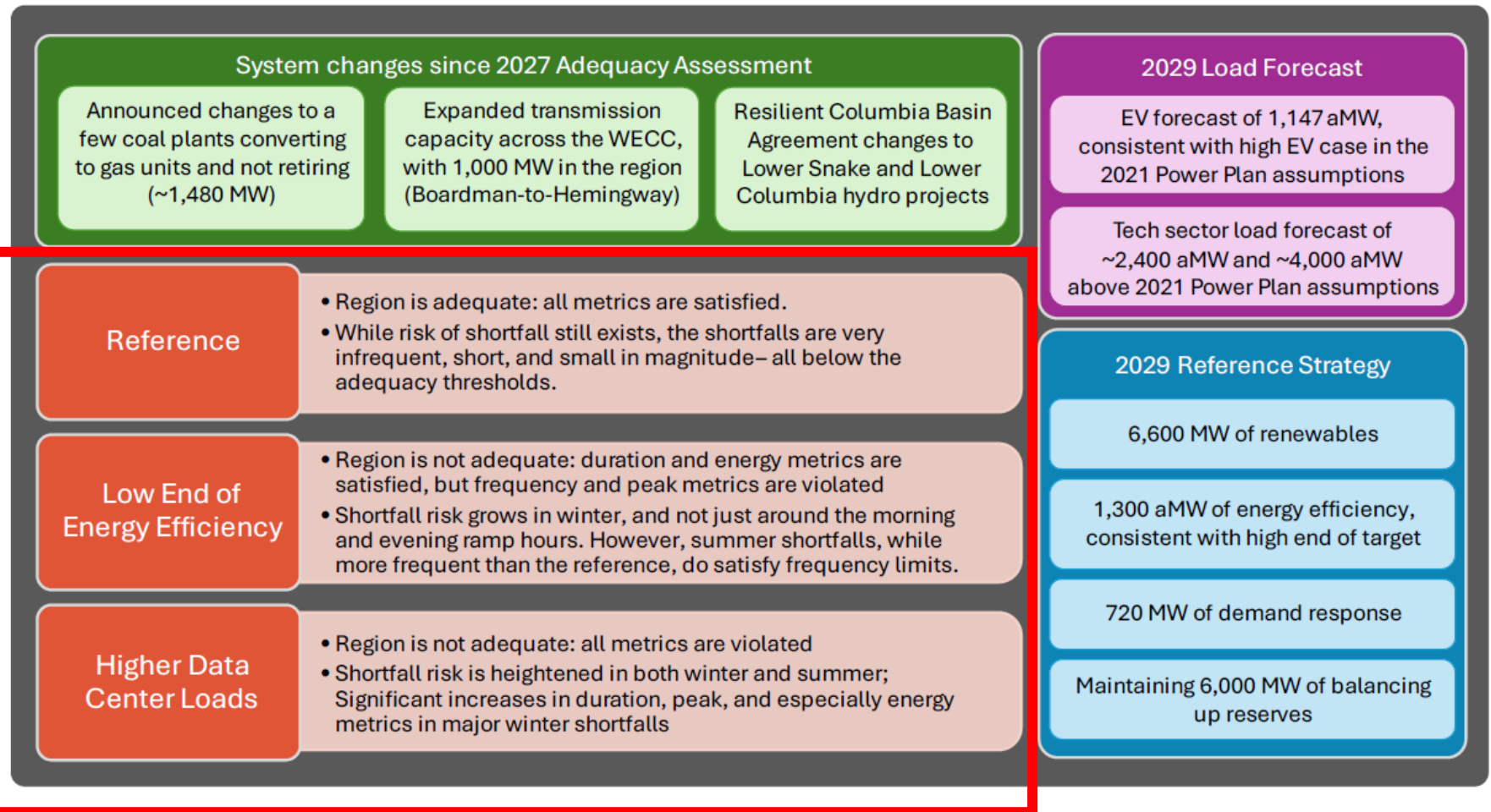


Figure 8. High-level summary of 2029 Adequacy Assessment

Source: NW Power & Conservation Council

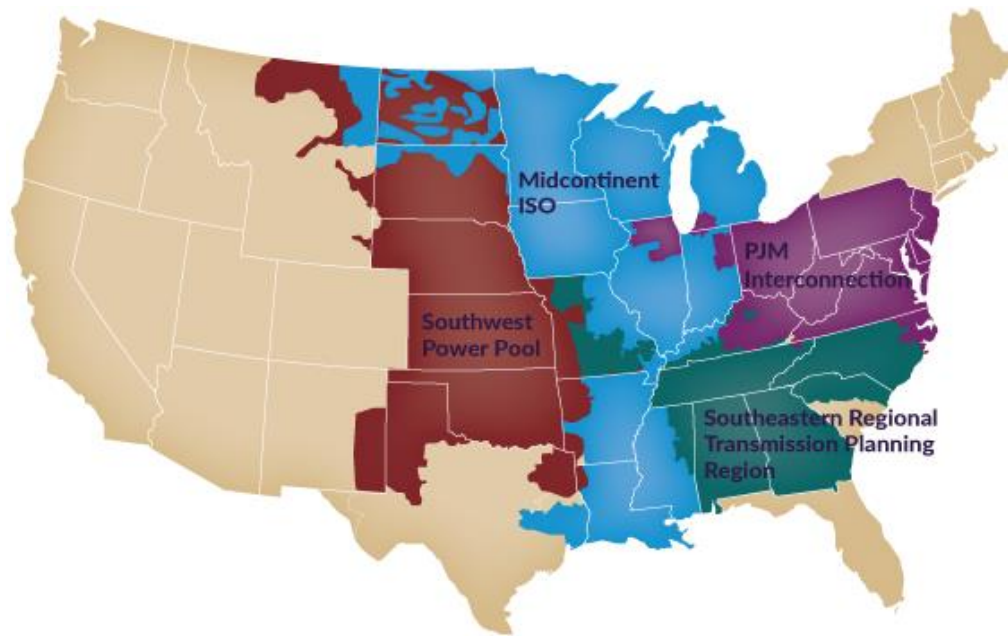
Western Resource Adequacy Program--WRAP



- Region-wide approach for assessing and addressing resource adequacy
- Addresses resource adequacy and ensures reliability through collaboration, taking advantage of operating efficiencies, diversity, and sharing pooled resources
- Entering first binding season in winter of 2027/28

Source: WRAP

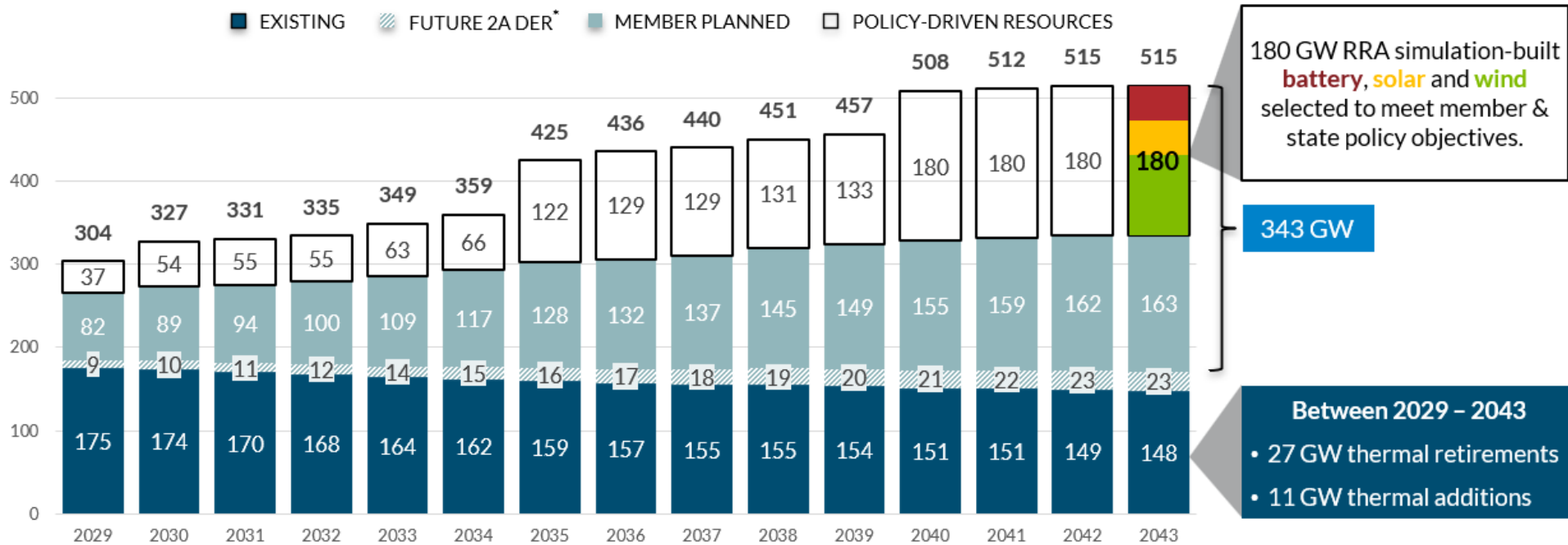
Midcontinent Independent System Operator—MISO Regional Resource Assessment, 2024



- Members and states may need to add capacity at 17 GW/year—over three times the recent average of 4.7GW/year—for 20 years to reliably meet future demand and policy goals.
- Thermal resources will continue to provide the bulk of the region's accredited capacity.

Source: MISO

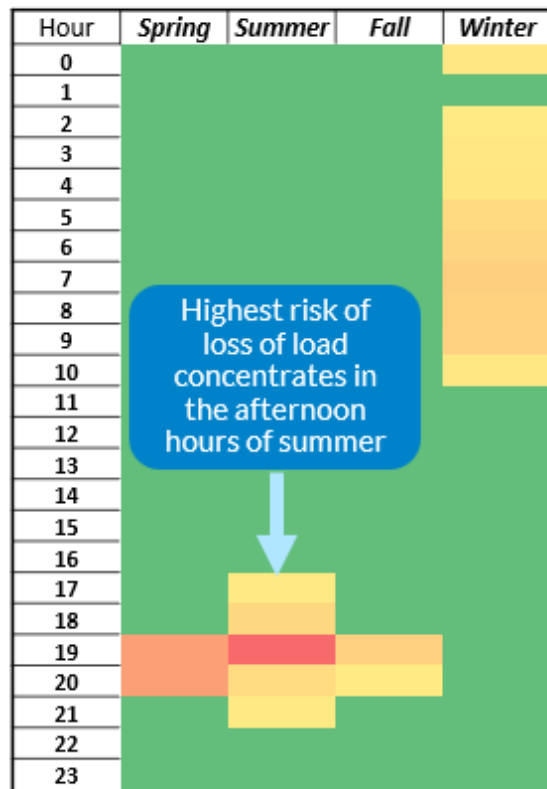
MISO—Regional Resource Assessment, 2024



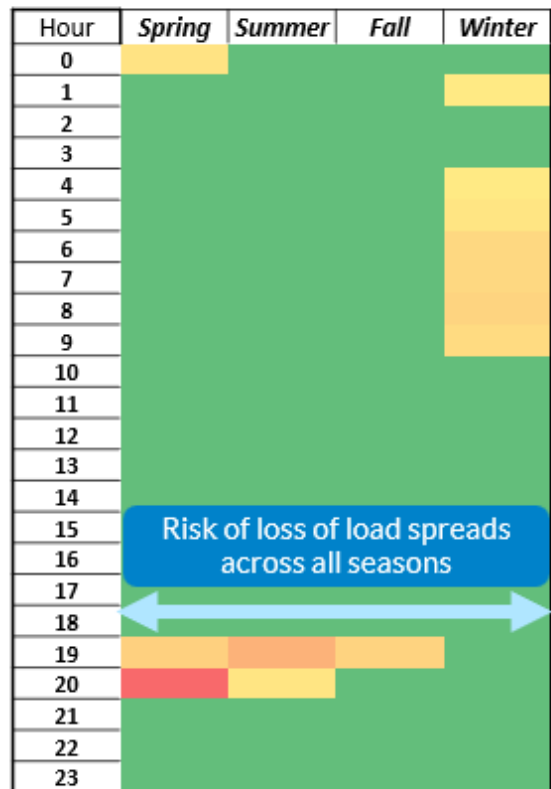
Source: MISO

MISO—Regional Resource Assessment, 2024

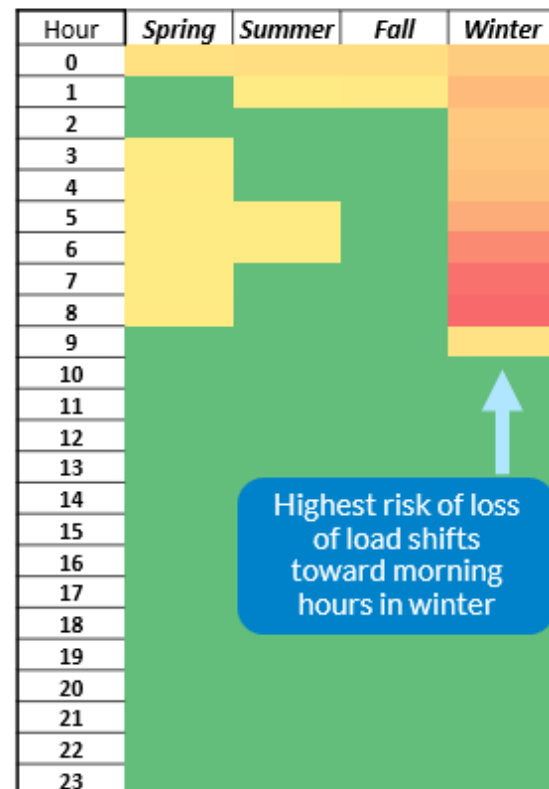
2030



2033



2043



*Based on Planning Year 2025-2026 results

Low risk Medium risk High risk

Source: MISO

MT Integrated Least-Cost Resource Planning and Acquisition Act

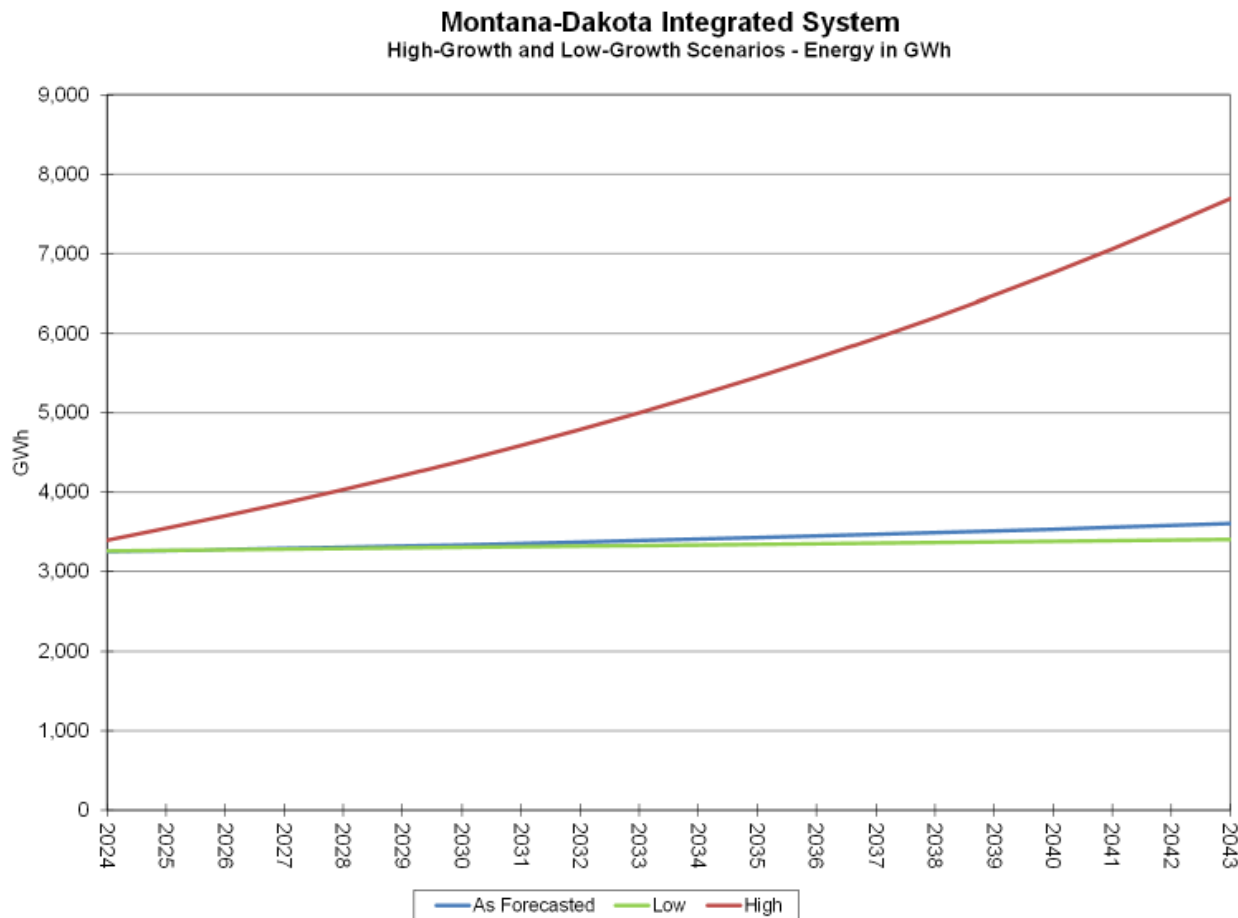
Title 69, Chapter 3, Part 12, MCA

2(a) A plan must contain but is not limited to:

- (i) an evaluation of the full range of cost-effective means for the public utility to meet the service requirements of its Montana customers, including conservation or similar improvements in the efficiency by which services are used including demand-side management programs in accordance with 69-3-1209;
- (ii) an annual electric demand and energy forecast developed pursuant to commission rules that includes energy and demand forecasts for each year within the planning period and historical data, as required by commission rule;
- (iii) an assessment of planning reserve margins and contingency plans for the acquisition of additional resources developed pursuant to commission rules;
- (iv) an assessment of the need for additional resources and the utility's plan for acquiring resources;
- (v) the proposed process the utility intends to use to solicit bids for energy and capacity resources to be acquired through a competitive solicitation process in accordance with 69-3-1207; and
- (vi) descriptions of at least two alternate scenarios that can be used to represent the costs and benefits from increasing amounts of renewable energy resources and demand-side management programs, based on rules developed by the commission.

69-3-1204, Montana Code Annotated

Montana-Dakota Utilities—MDU Integrated Resource Plan, 2024



Source: Montana-Dakota Utilities

Montana-Dakota Utilities—MDU

Integrated Resource Plan, 2024

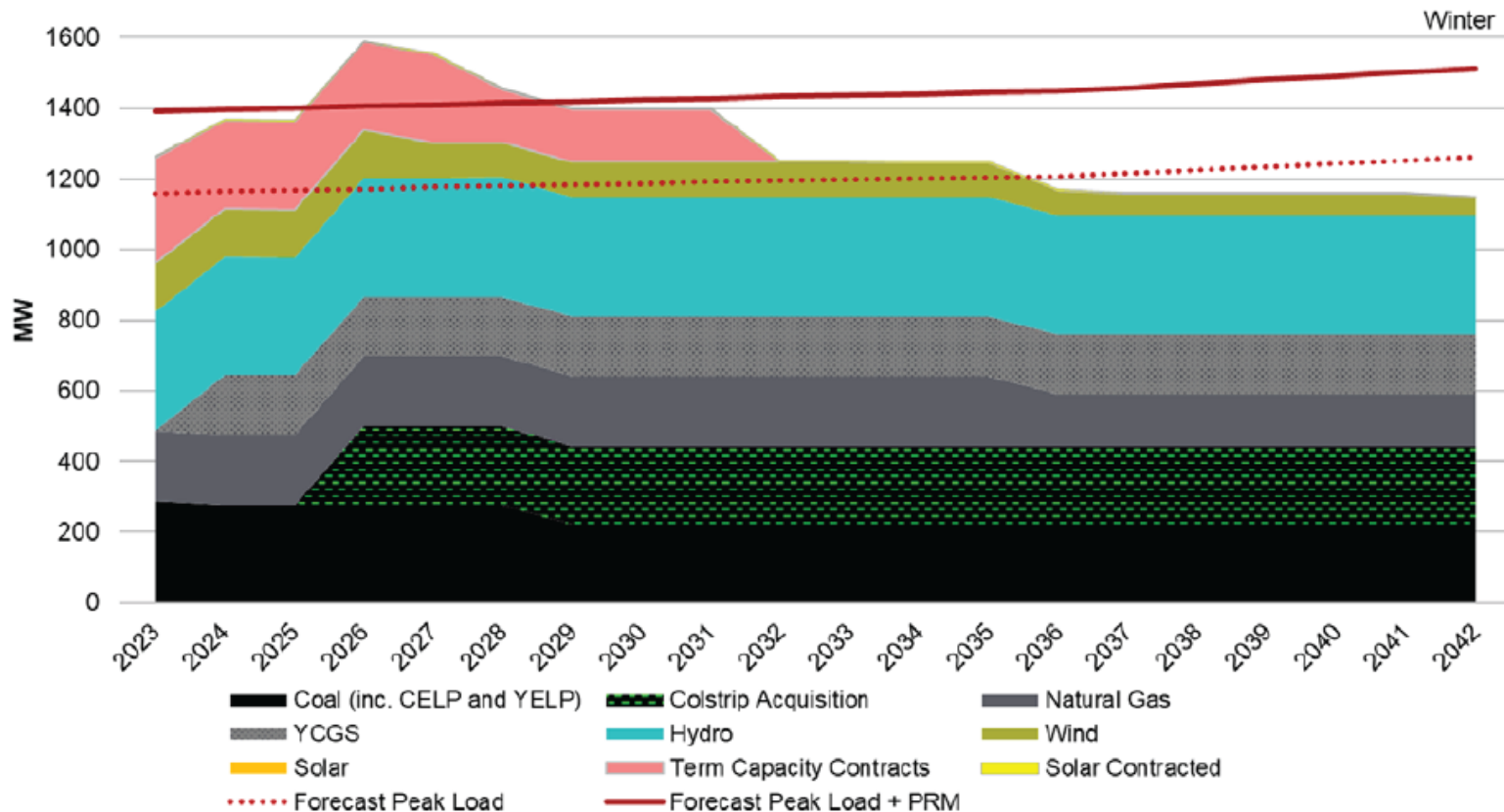
Action Plan Highlights

- Complete commissioning of Heskett 88 MW simple cycle natural gas turbine (2024).
- Issue a new RFP for supply resources.
- Continue implementing existing and evaluate new cost-effective EE and DR programs.
- Monitor the availability and price of energy and short-term capacity in the MISO market or through bi-lateral arrangements and purchase additional capacity as needed.

Source: Montana-Dakota Utilities

NorthWestern Energy—NWE Integrated Resource Plan, 2023

Figure 6-5. NorthWestern's Winter Capacity with Existing Resources Based on WRAP ELCCs



Source: NorthWestern Energy

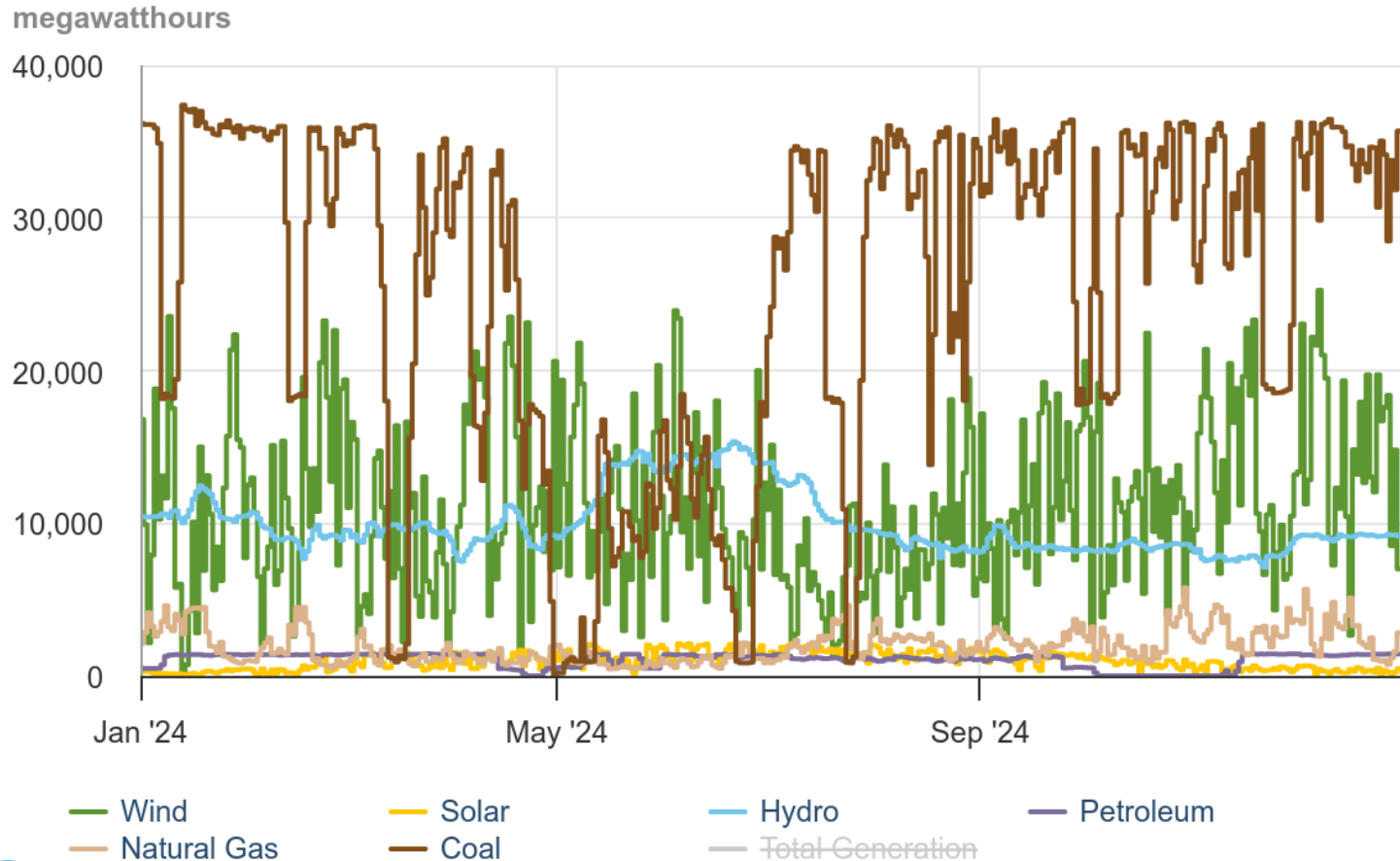
NWE Integrated Resource Plan, 2023

Action Plan Highlights

- Participate in development of WRAP
- Complete Yellowstone County Generating Station
- Evaluate need for RFP
- Evaluate early closure of Colstrip
- Execute demand side management RFP
- Monitor acceleration of electrification
- Evaluate the development of new technologies
- Study the most cost effective transmission capacity opportunities

NWE Balancing Authority Resources, 2024

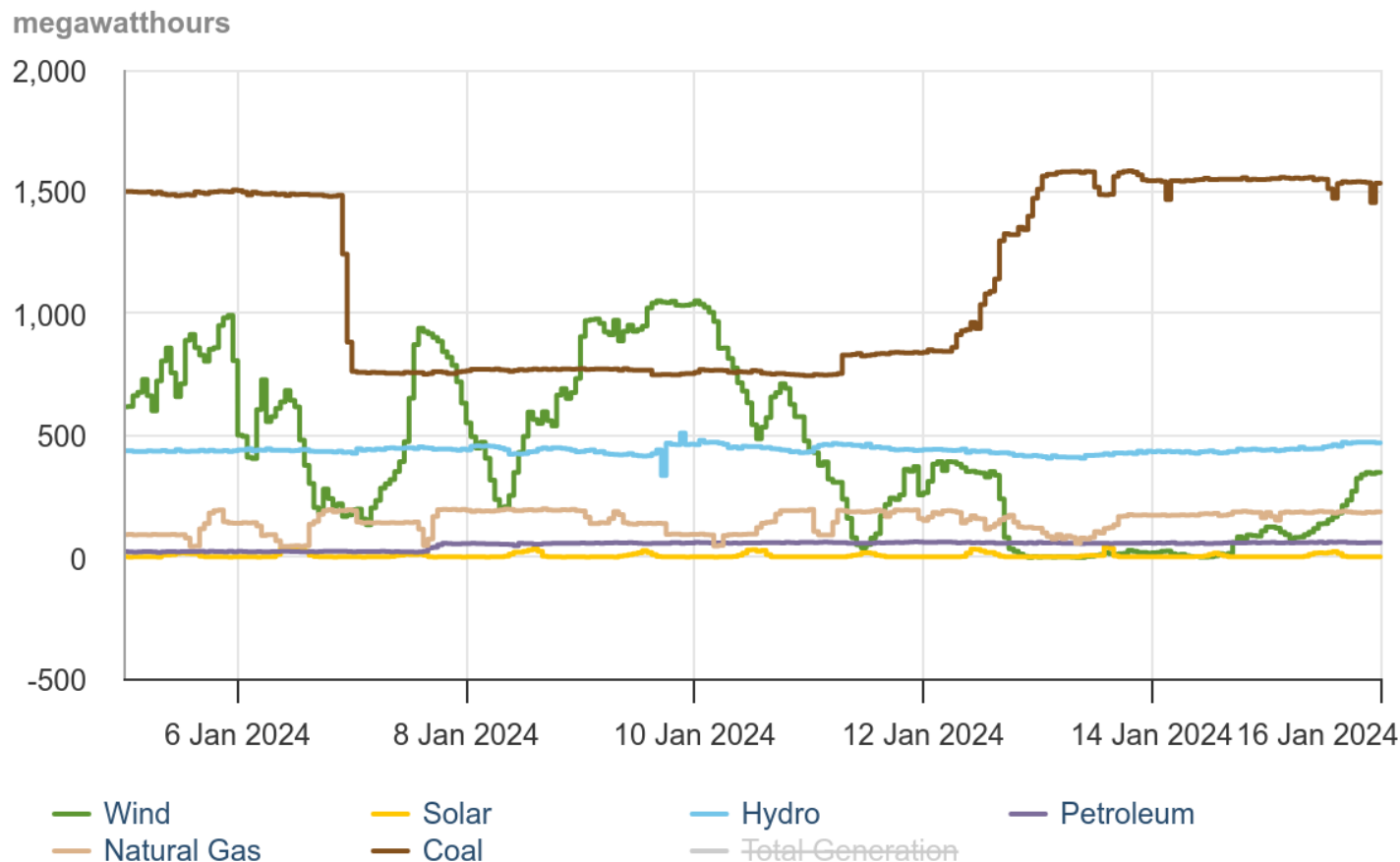
NorthWestern Corporation (NWM) electricity generation by energy source 1/1/2024 – 12/31/2024, Mountain Time



Data source: U.S. Energy Information Administration

NWE Balancing Authority Resources, Jan. 2024

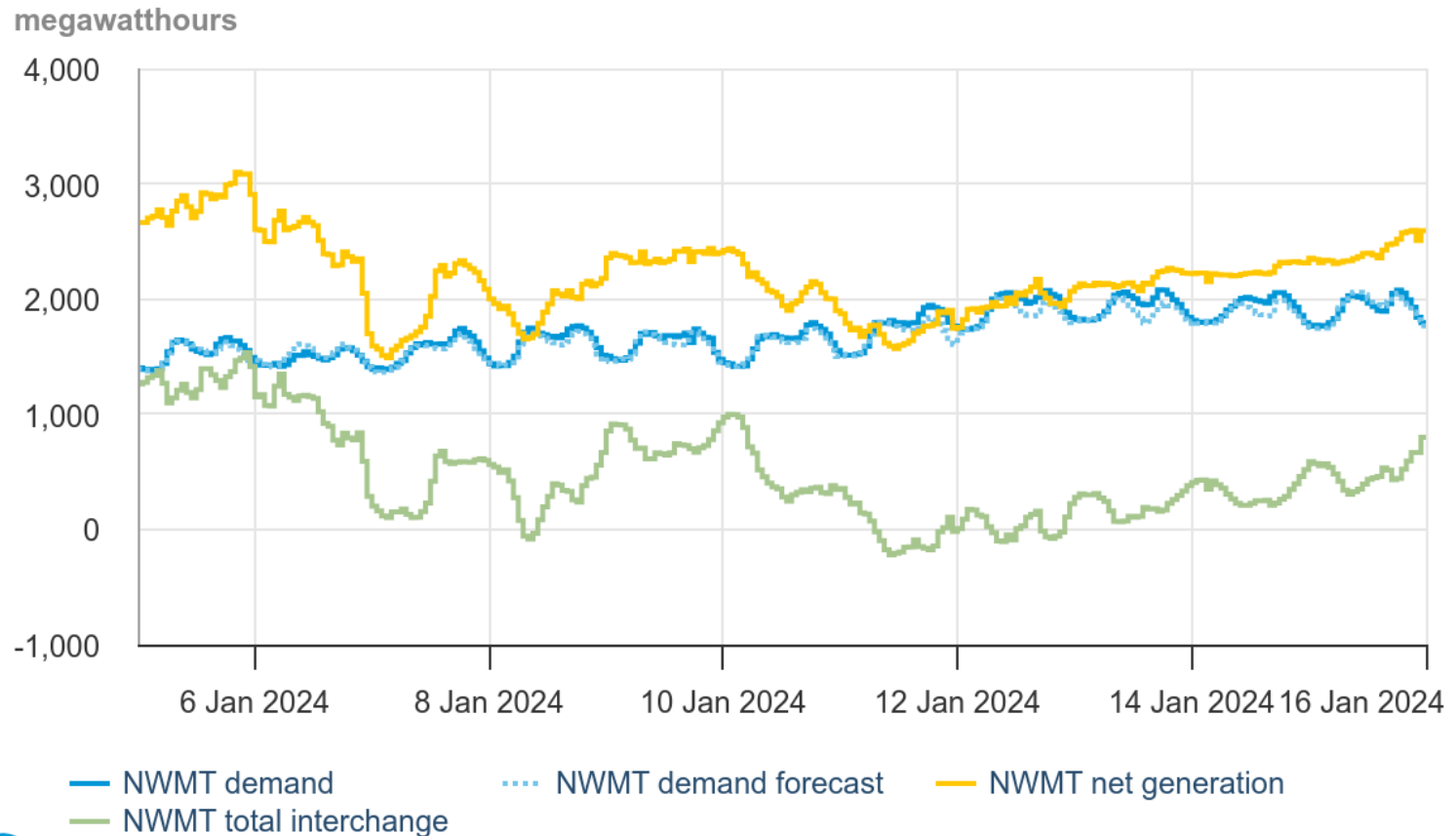
NorthWestern Corporation (NWM) electricity generation by energy source 1/5/2024 – 1/15/2024, Mountain Time



Data source: U.S. Energy Information Administration

NWE Balancing Authority Resources, Jan. 2024

NorthWestern Corporation (NWM) electricity overview (demand, forecast demand, net generation, and total interchange) 1/5/2024 – 1/15/2024, Mountain Time



Data source: U.S. Energy Information Administration

Resources

- WECC Western Assessment of Resource Adequacy, 2024
<https://feature.wecc.org/wara/>
- NW Power & Conservation Council, 2029 Resource Adequacy Assessment
<https://www.nwcouncil.org/reports/2024-4/>
- Western Resource Adequacy Program
<https://www.westernpowerpool.org/about/programs/western-resource-adequacy-program>
- MISO 2024 Regional Resource Assessment
https://cdn.misoenergy.org/2024%20RRA%20Report_Final676241.pdf
- NorthWestern Energy Integrated Resource Plan, 2023
<https://northwesternenergy.com/about-us/gas-electric/montana-electric-supply-planning/montana-integrated-resource-plan-2023>
- Montana-Dakota Utilities, Integrated Resource Plan, 2024
<https://www.montana-dakota.com/wp-content/uploads/PDFs/Rates-Tariffs/2024-MT-IRP-Vol-1-nonprint.pdf>
- Montana Energy Business Alliance, Grid Lab, Energy Strategies, Assessing Resource Adequacy in Montana
https://renewablenw.org/sites/default/files/Reports-Fact%20Sheets/GridLab_Montana-RA-study_Dec-2023_0.pdf
- E3, Resource Adequacy and the Energy Transition in the Pacific Northwest: Phase 1 Results, 2025
[https://www.utc.wa.gov/sites/default/files/2025-09/E3%20Regional%20resource%20adequacy%20study%20phase%201%20presentation%20September%202022%20RA%20Me
eting.pdf](https://www.utc.wa.gov/sites/default/files/2025-09/E3%20Regional%20resource%20adequacy%20study%20phase%201%20presentation%20September%202022%20RA%20Meeting.pdf)
- Montana Public Service Commission, Docket 2022.09.087

Contact

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