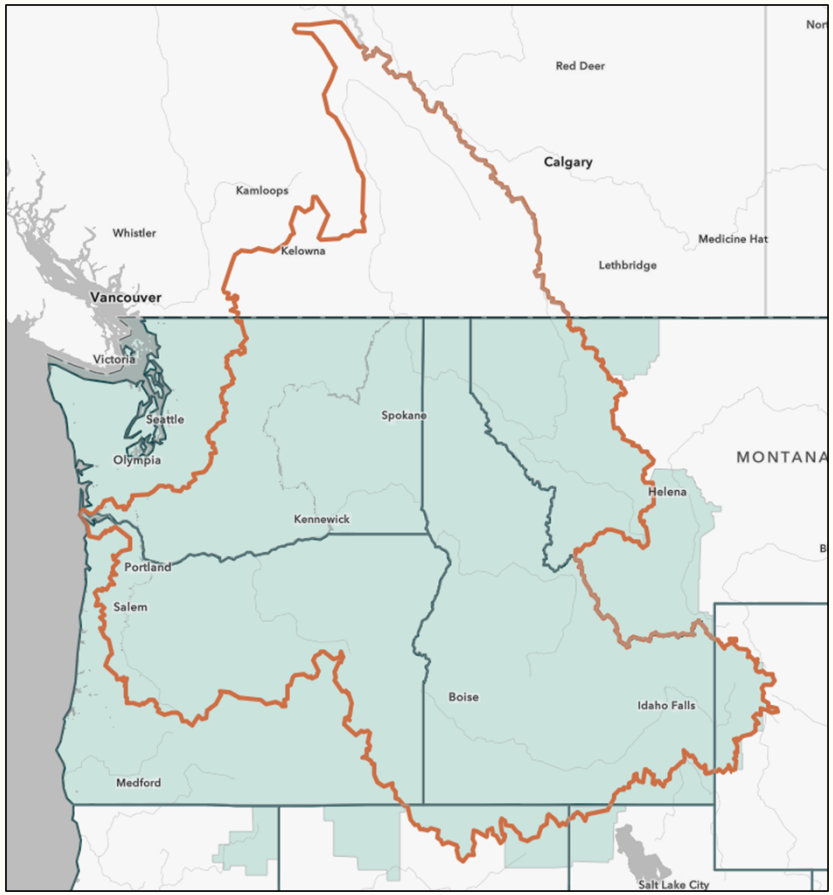
# Ninth Power Plan for the Northwest

Jennifer Light
Director of Power Planning
March 16, 2026

Northwest **Power** and **Conservation** Council

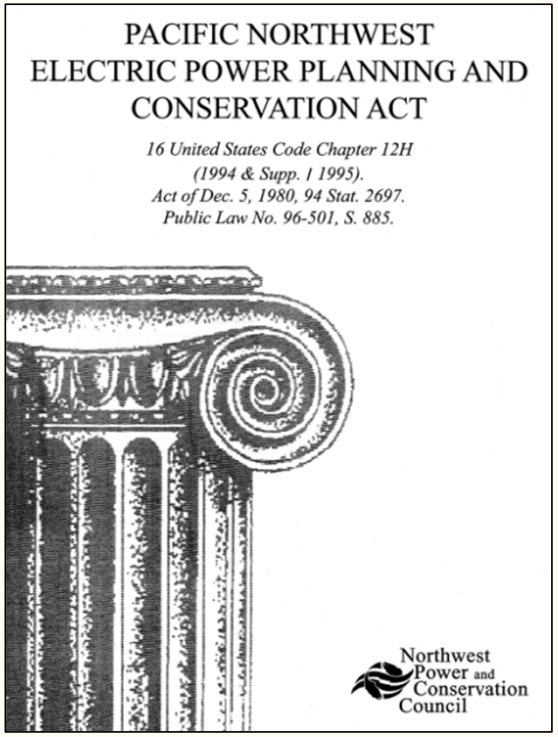
# Northwest Power and Conservation Council

- Authorized by Congress through the Northwest Power Act of 1980
- Council appointed by the governors of Idaho, Montana, Oregon, and Washington
- Key responsibilities include:
  - Develop a program to protect, mitigate, and enhance fish and wildlife affected by the hydro facilities
  - Develop a power plan to assure an adequate, efficient, economical, and reliable power supply
  - Inform and involve the public in these planning efforts



# Power Act Guides the Council's Power Planning

- Prepare a regional conservation and electric power plan
- Give priority to cost-effective resources, with first priority to conservation, then renewables, then to generating resources utilizing waste heat, then all other resources
- Include a scheme for "implementing conservation measures and developing resources … to reduce or meet the Administrator's obligations…"
- Council must give "due consideration" to:
  - Environmental quality
  - Compatibility with the existing system
  - Council's Fish and Wildlife Program
  - Other criteria the Council might set forth in the plan



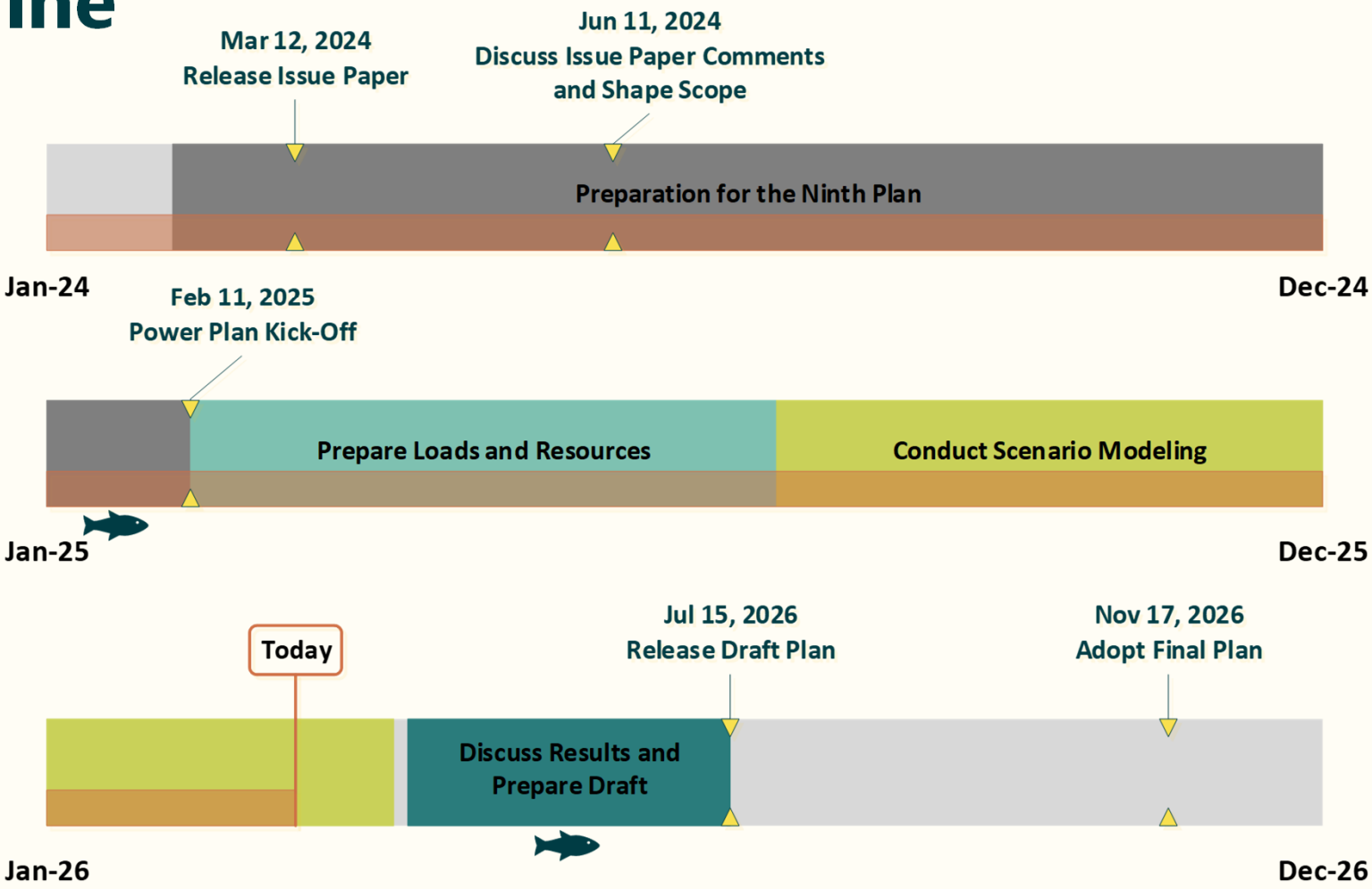
# Developing Ninth Power Plan

- Council kicked-off its formal review of the Power Plan in February of 2025
- Goal is to ensure an adequate, efficient, economical, and reliable power supply, while balancing all the considerations required by the Power Act
  - Focused on the electric system
  - Provides a 20-year perspective, with a near-term focus
  - Aims for a resource strategy, and supporting recommendations to meet regional needs while managing costs and risk
- Will include recommendations for the region, but with particular focus on Bonneville

The 9th Northwest Power Plan

Draft – Subject to Change

# Timeline



# Key Questions for this Power Plan

## Scenario Modeling

### New Resource and Transmission Risk Scenario

Informing how resource selection changes with uncertainty around new resource availability and costs and a changing transmission landscape

### Changing Hydro Operations Scenario

Informing how the uncertainty around future hydro operations impacts the optimal resource solutions for the region

Estimating 13 sensitivities to explore these uncertainties

## Uncertainty Represented by Futures

### Extreme Weather

Developed a suite of futures to reflect a range of hydro conditions, temperatures/loads, and wind conditions

### Load Growth Uncertainty

Developed a suite of futures to reflect uncertainty around the amount, shape, and timing of new load growth

100s model runs to represent these uncertainties

# New Resource and Transmission Risk Scenario

| | |
|---|---|
| **Constrained Resources and Transmission** | Explores resource options if supply side resources are constrained in the near-term, there is no new transmission, and emerging tech is delayed |
| **Changing Transmission Availability** | Explores resource development assuming three different transmission buildouts, leveraging public information from the WestTEC effort |
| **Changing Emerging Technology Costs** | Explores impact of uncertainty of emerging technology costs through both a study of decreased costs (25% less) and increased costs (50% more) |
| **Limited Short-Duration Storage Availability** | Explores how resource buildout changes if short-duration storage availability is limited in the near-term across the west |
| **Slower Demand Side Resource Availability** | Assumes energy efficiency, demand response, and rooftop solar take longer to develop than what is technical feasible |
| **Evolving Federal Policy Landscape** | Explores how changes in Federal policies impact resource decisions in the region, with a focus on tax credits and natural gas requirements |

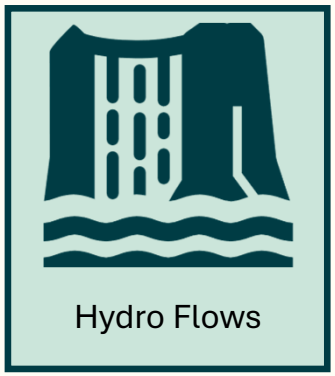
# Changing Hydro Operations Scenario

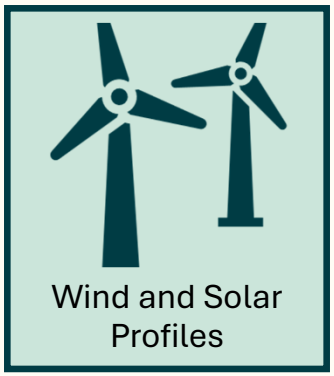
| | |
|---|---|
| **2020 BiOp Flex Spill Operation** | Assumes operations based on the 2020 CRSO EIS to represent "current operations" and provide a basis for comparison |
| **2023 RCBA Operation** | Given uncertainty around 2026 operations, uses RCBA defined spill operations to represent a "steady spill" option as a point of comparison |
| **Recommended Spill and MOP Targets** | Analyzes specific minimum operating pool elevations and limits and spill operations recommended by some of the states and tribes into the F&W Program amendment process |
| **Limited Flex Operation** | Analyzes power system implications of limiting the hydro system's ability to change daily elevations and outflows |

This scenario was scoped in August 2025 reflecting uncertainty around future operations and exploring recommendations submitted to the Council as part of its fish and wildlife program amendment process.

# Approach to Futures in the Ninth Plan

- Futures capture uncertainty and volatility around:



- Council uses three climate models to guide the range of futures for loads, hydro flows, and renewable profiles
- We also developed a range of natural gas prices and approach to accounting for natural gas price volatility
- Collectively, these uncertainties represent over 13,500 future trajectories that guide our modeling

# Modeling Enhancements for Ninth Plan

Location

### Modeling 17 Zones

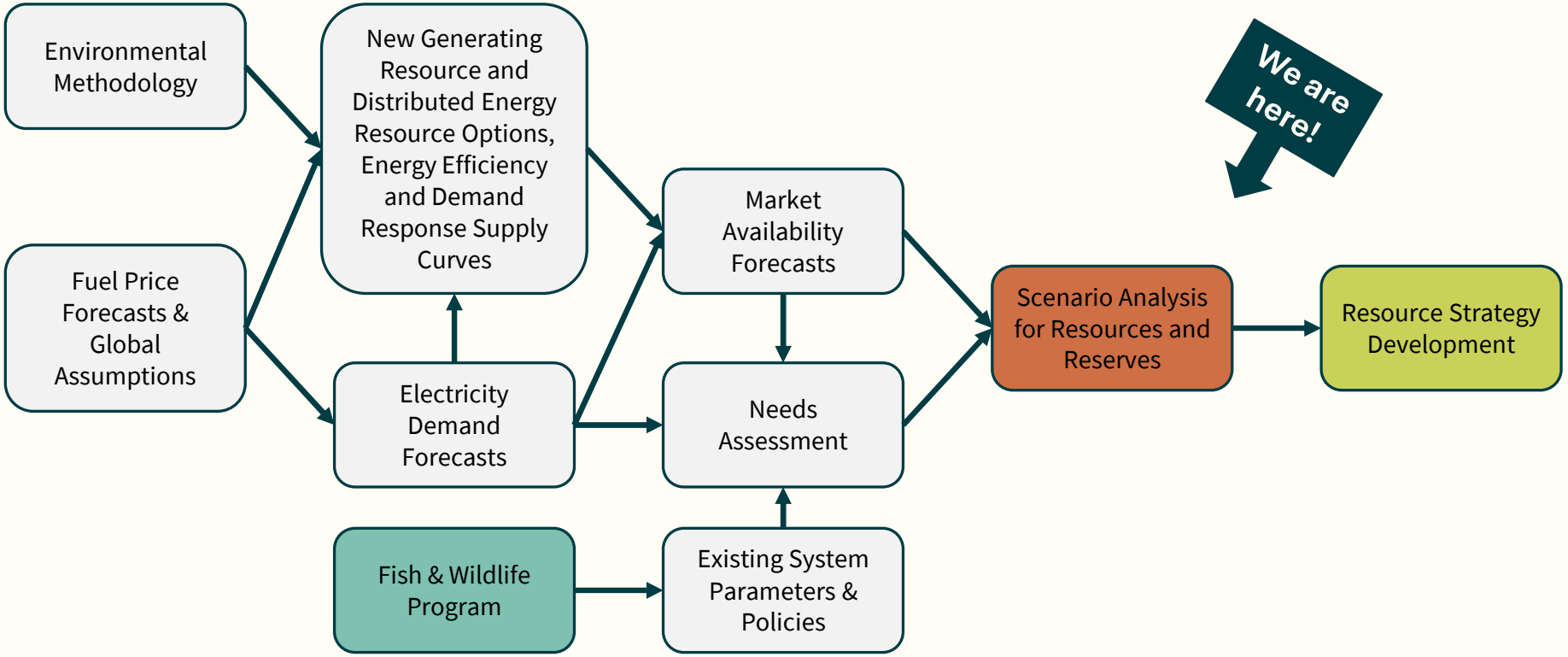
- Understand impacts of load growth unique to specific geographic areas
- Explore trade-offs between transmission development timelines and new resources
- Assess the locational value of resources

Timing

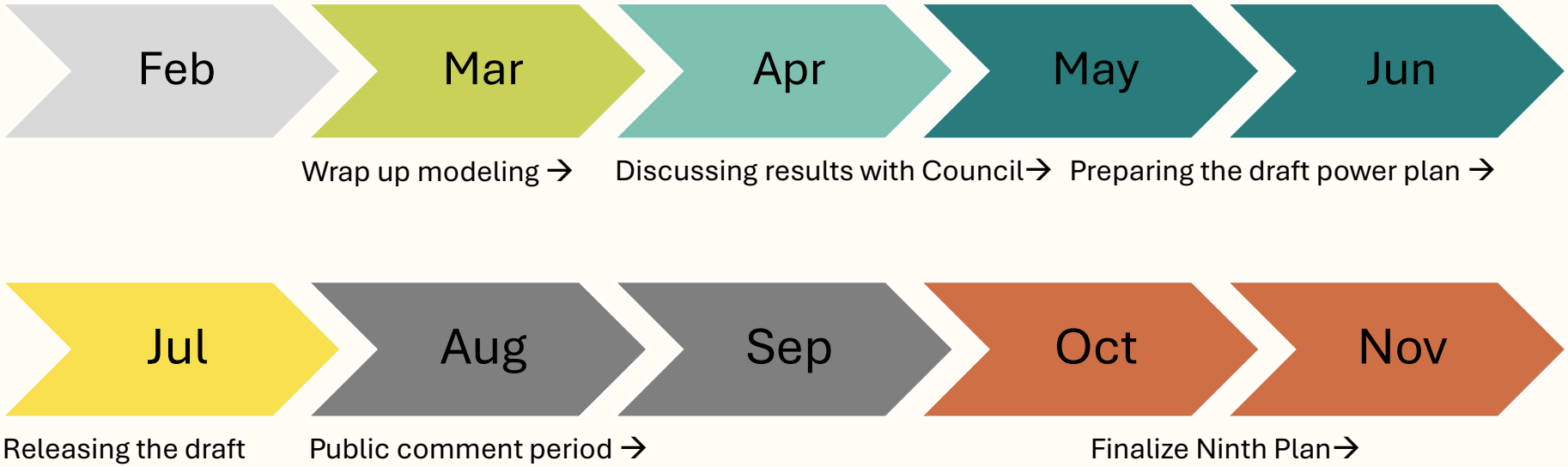
### Hourly Analysis

- Enhanced analysis of weather impacts on resource availability
- Analyze the effect of end-use demand profiles at critical peak times
- Explore cost and risk of proposed portfolios' hourly operations implications

# Power Plan Process Flow

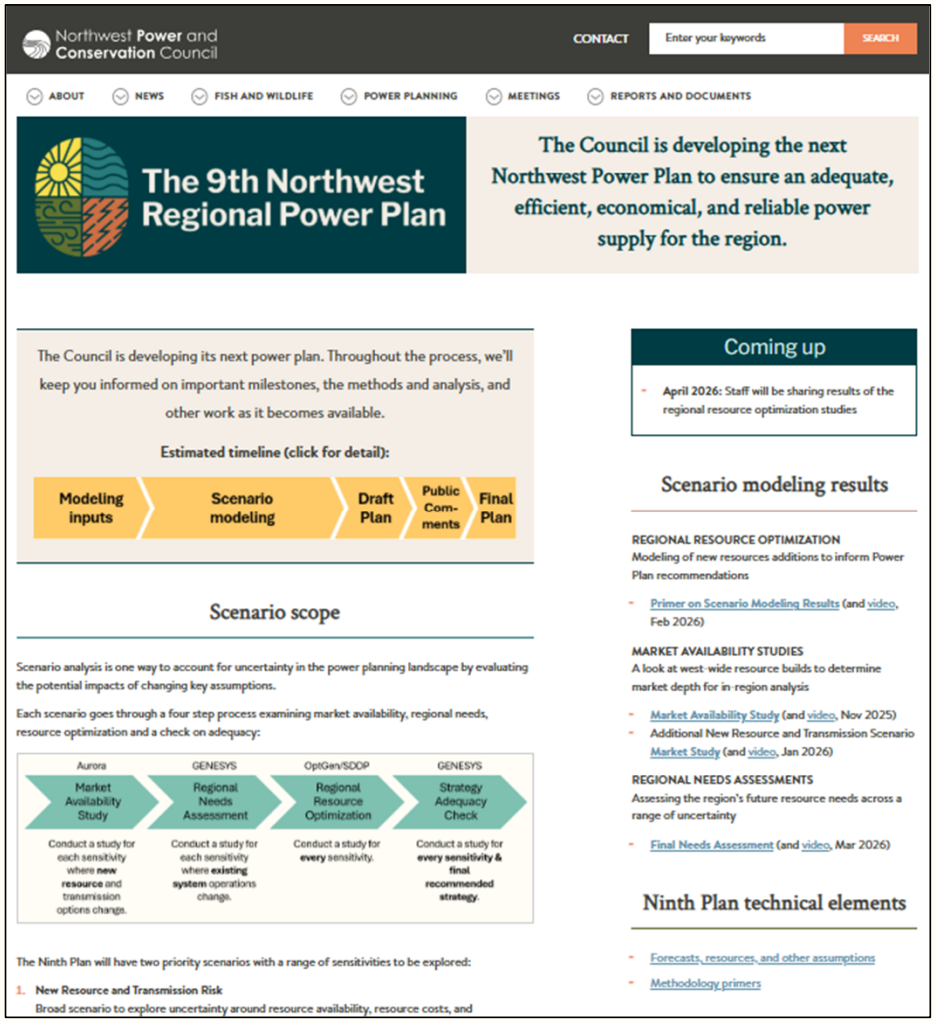


# Next Steps in Developing the Ninth Plan



# For More Information

- All material is available on the Council's Ninth Power Plan webpage: https://www.nwcouncil.org/energy/ninthpowerplan/
- Council will continue to work in public via its regular meetings and advisory committee meetings
- Reach out with any questions



# Additional Slides

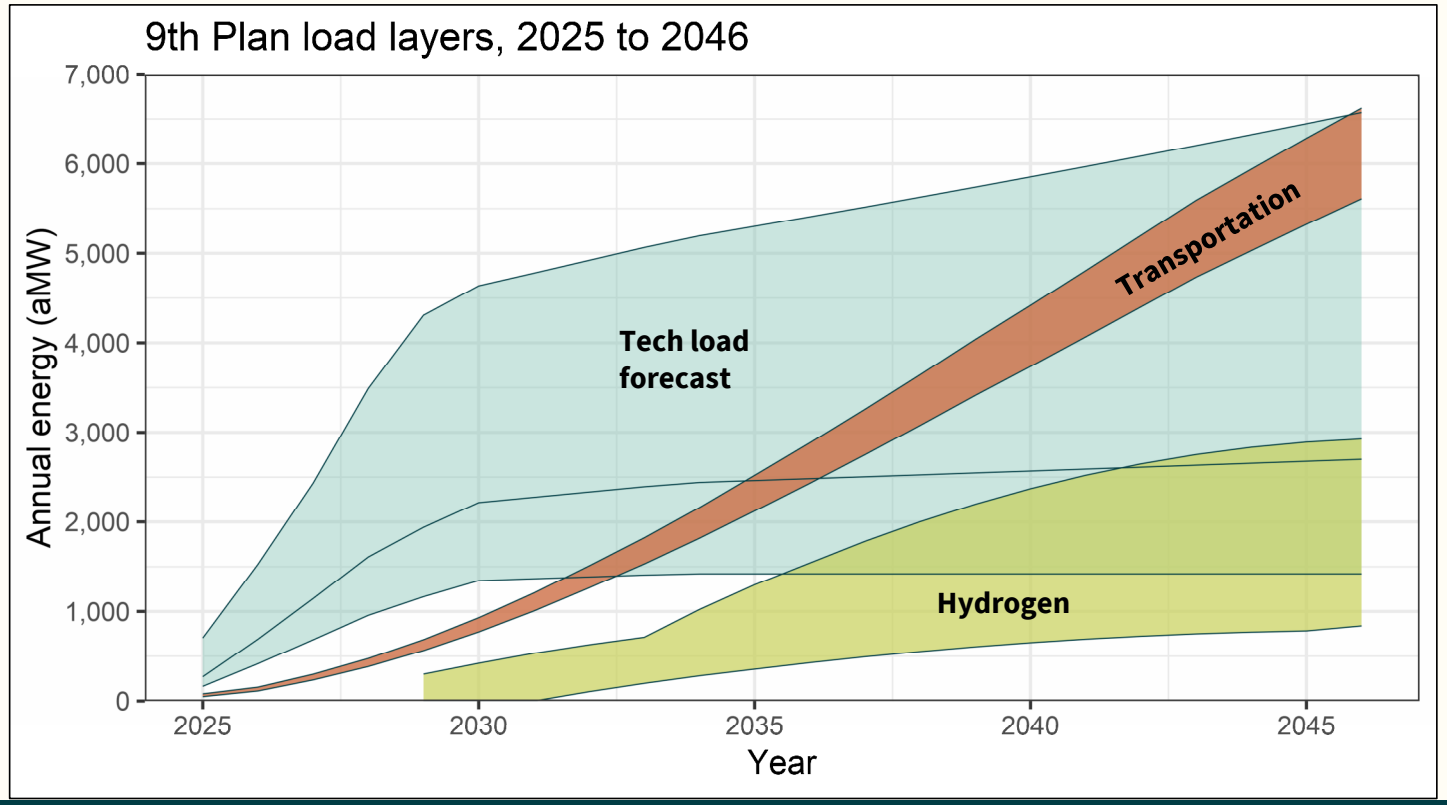
# Load Forecast

# Load Forecast Approach for Ninth Plan

- Developed five pathways of load growth reflecting a range of assumptions across different sectors to account for uncertainty in timing, size, and shape
- Temperature data from three climate models are then used across each of these trajectories to ultimately create 15 futures
- All forecasts represent a “frozen efficiency” view, allowing the models to optimize the demand-side resources

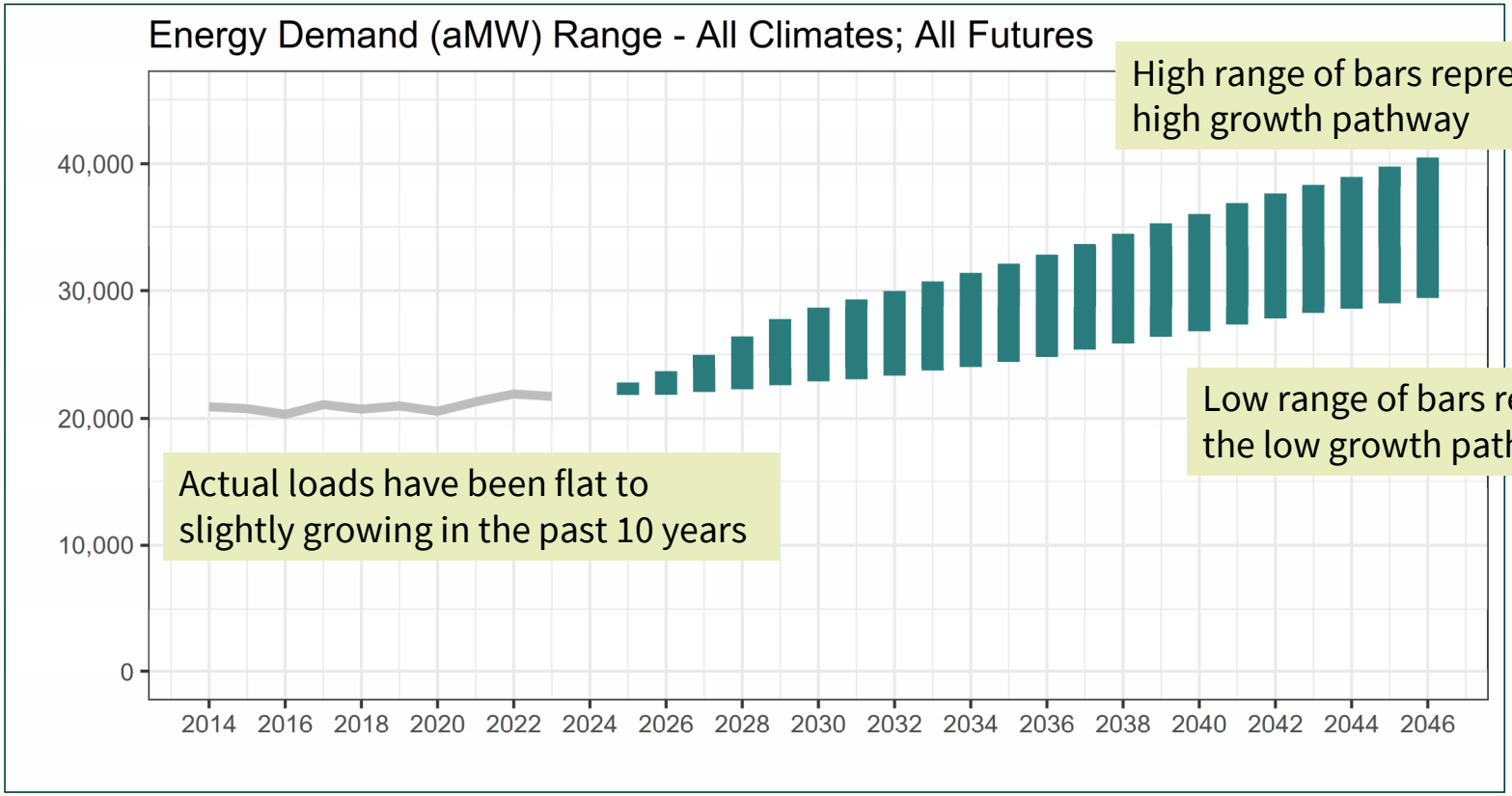
| Pathways | Economics | Transportation | Data Centers | Building Electrification | Hydrogen |
|---|---|---|---|---|---|
| Persistent high growth | Medium | Higher | Higher | Higher | Higher |
| Persistent low growth | Lower | Lower | Lower | Lower | Lower |
| Early growth | Medium | Lower | Higher | Lower | Lower |
| Late growth | Medium | Higher | Medium | Higher | Higher |
| Mixed bag | Medium | Higher | Medium | Lower | Lower |

# Load Forecast, Key Sectors




Tech and transportation electrification can reach similar levels by 2046

# Load Forecast, Energy



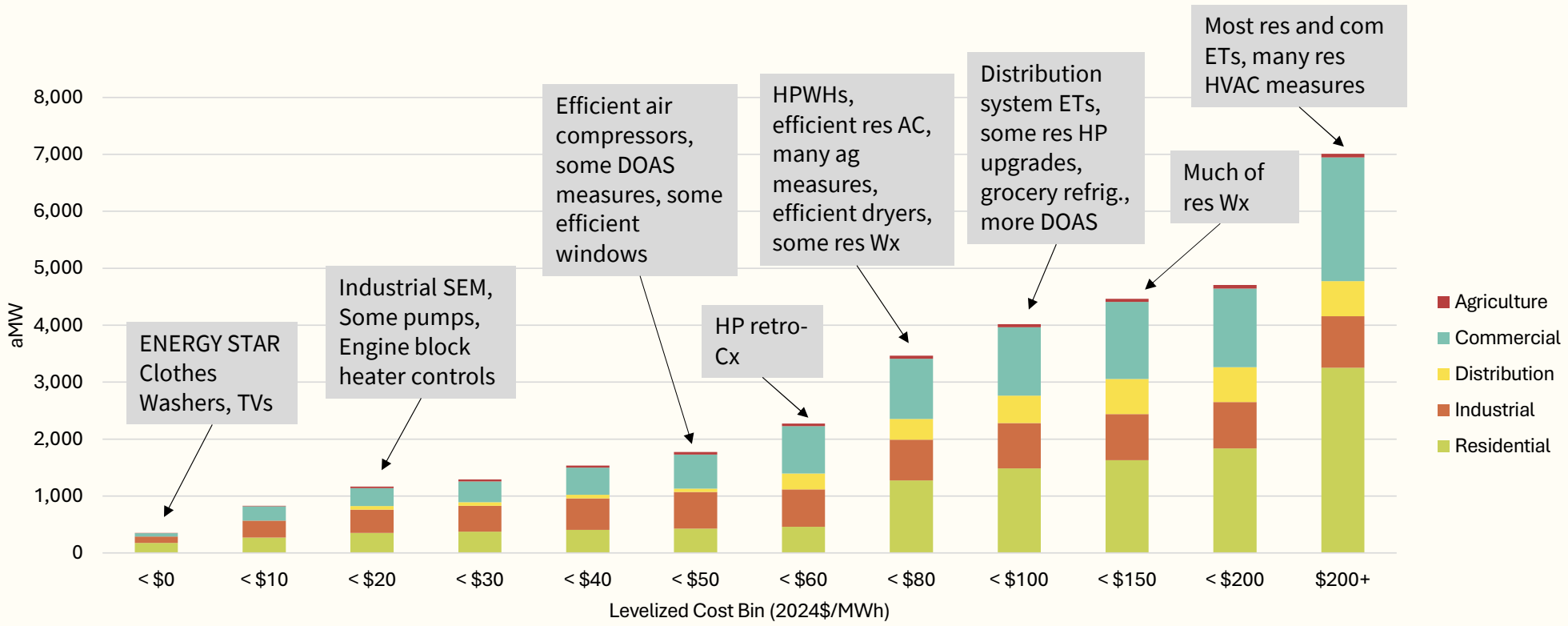
# New Resource Options

# Generating Resources Considered

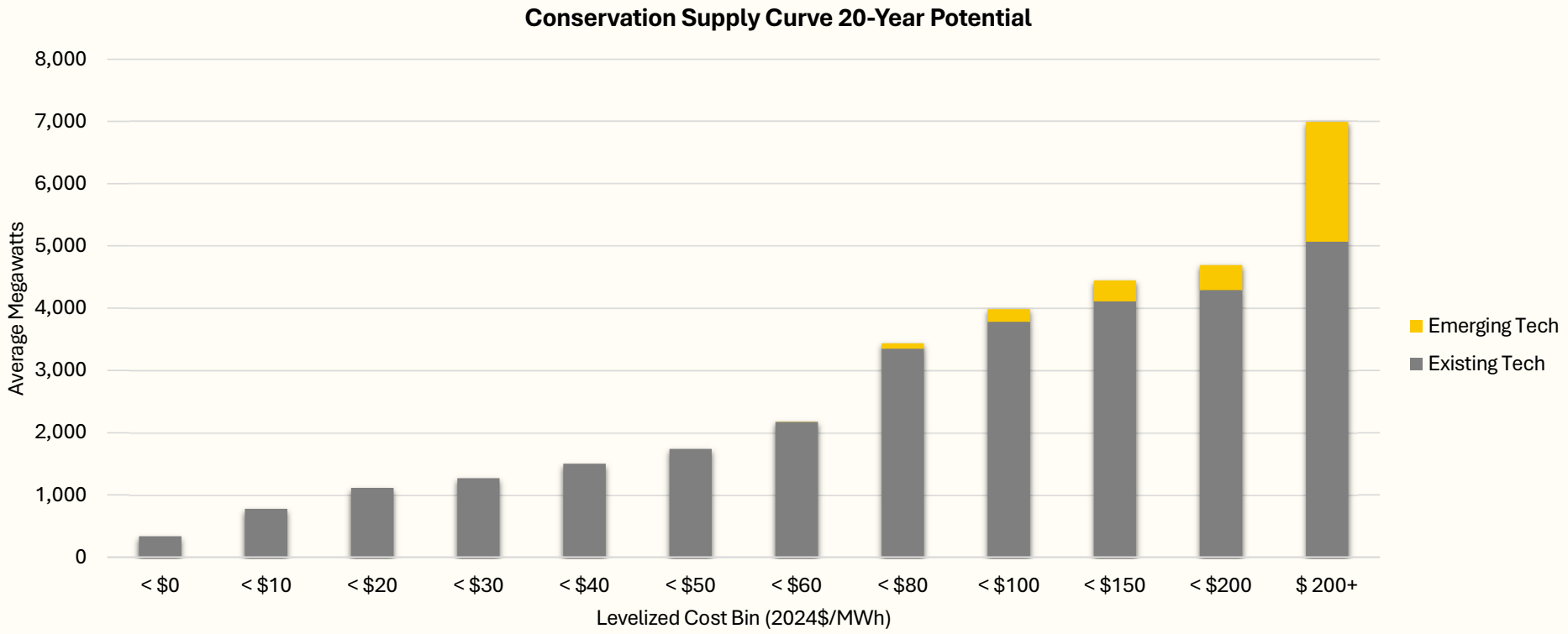
| Primary | Limited Availability | Emerging Technology |
|---|---|---|
| ⚙ Utility Scale Solar PV | ⚙ Conventional Geothermal | ⚙ Clean Baseload |
| ⚙ Onshore Wind | ⚙ Offshore Wind | ⚙ Clean Long Duration Storage |
| ⚙ Small Scale Renewables | ⚙ Pumped Storage | ⚙ Clean Peaker/Medium Duration Storage |
| ⚙ Gas Combined Cycle | • Biomass | |
| ⚙ Gas Simple Cycle | • Hydro Upgrades | |
| ⚙ Battery Storage (Li-Ion) | • Biogas | |
| ⚙ Renewables + Storage | • Small Hydro | |
| | • Combined Heat and Power | |

⚙ Generating resources explicitly modeled

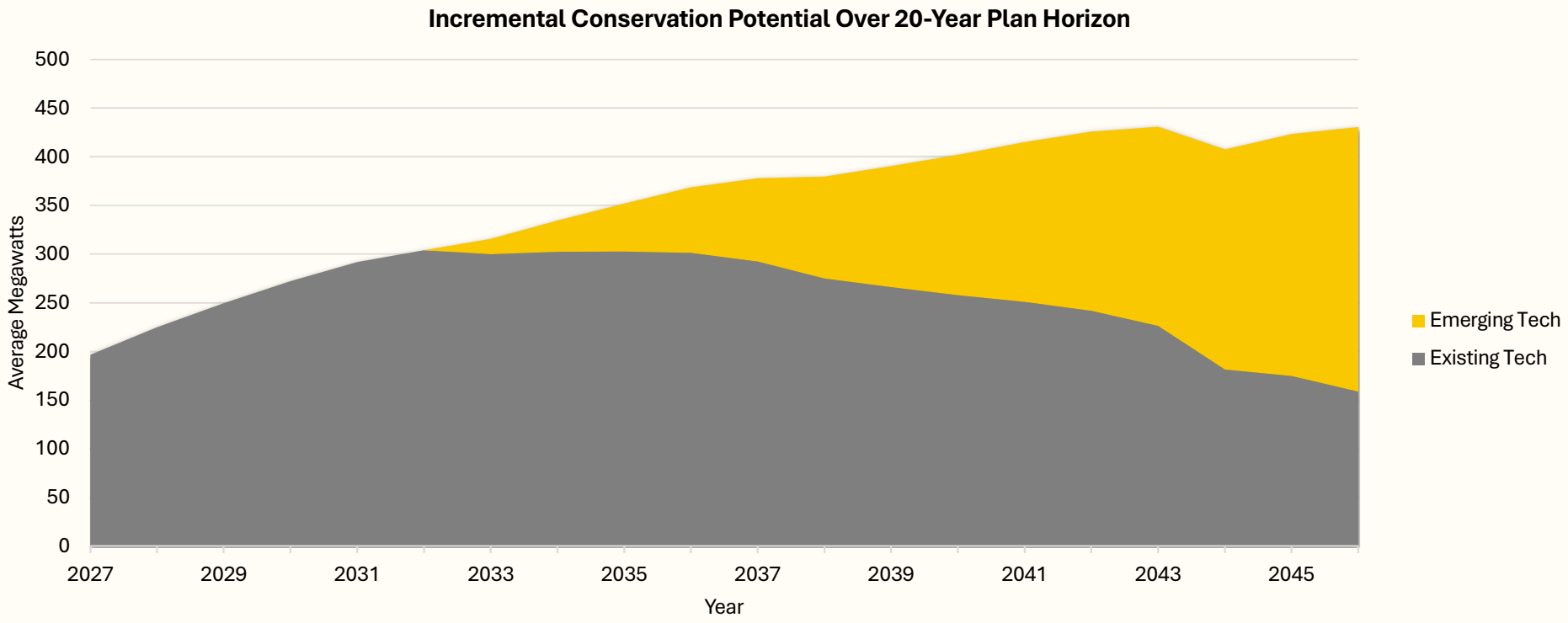
# Conservation Potential



# Potential Includes Emerging Technologies for Some of the Sensitivities



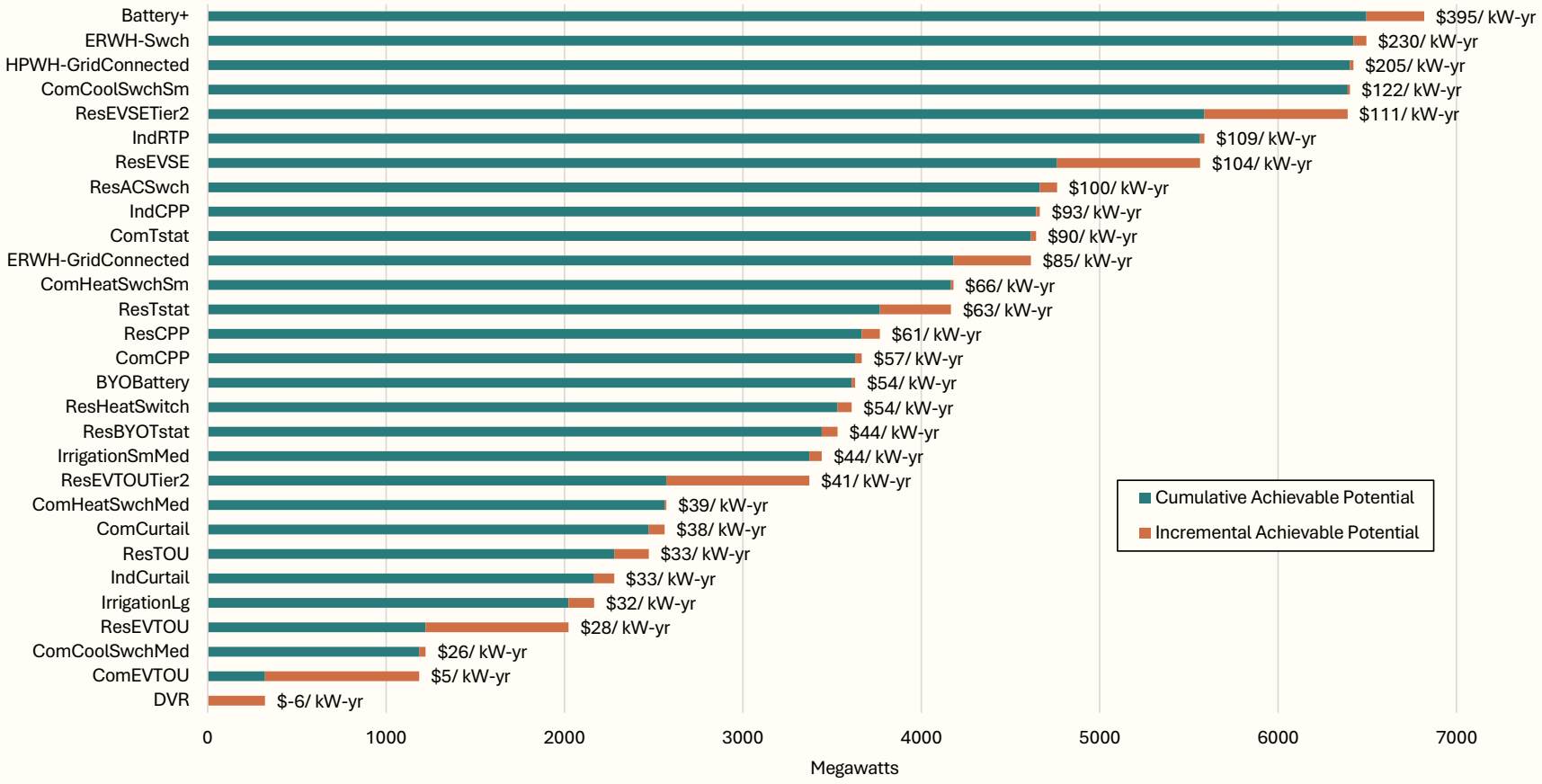
# Emerging Technology Potential Provides Options for Consideration in Outer Years



# Demand Response Products

| | | | |
|---|---|---|---|
| HVAC switches & thermostat controls | Water heating controls | Pricing programs, including time of use programs | Electric vehicle programs |
| Battery management | Demand curtailment | Irrigation Control | Demand Voltage regulation |

# DR Supply Curve

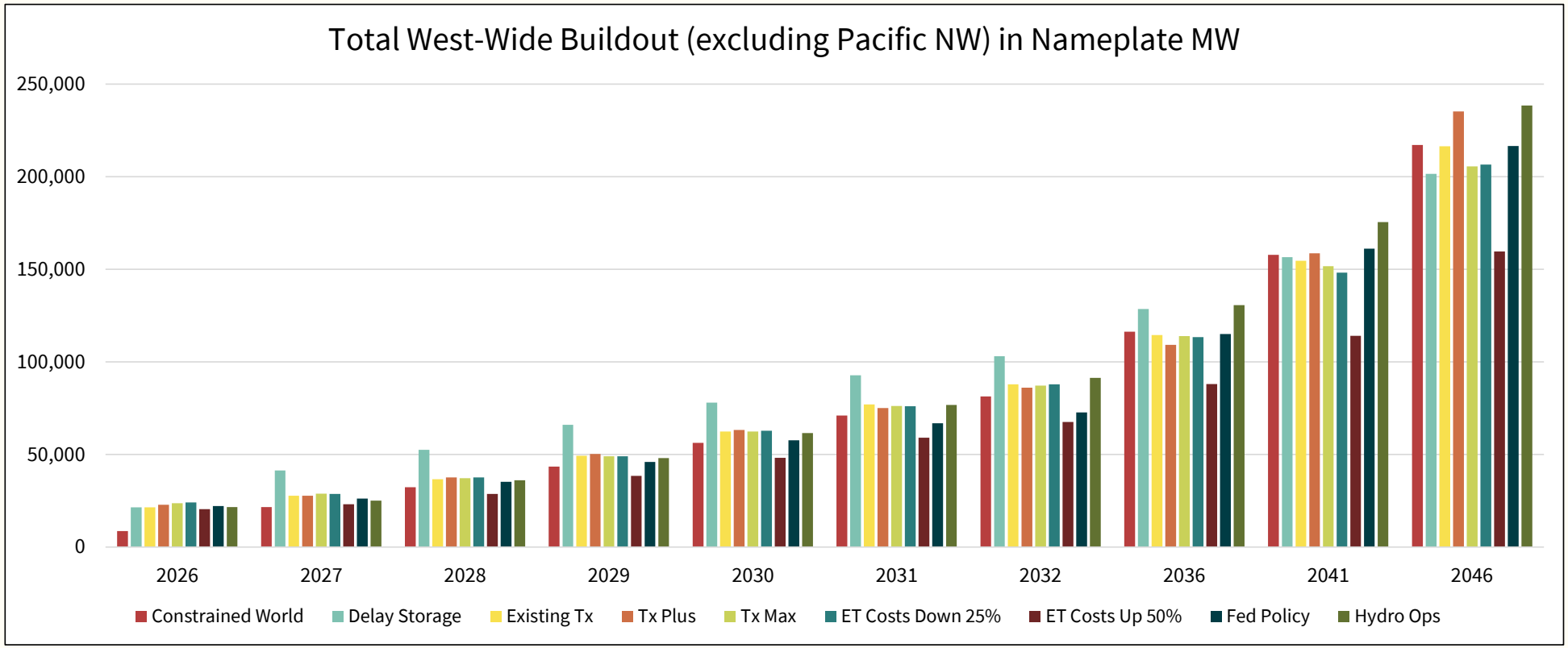


# Market Availability

# Market Availability High-Level Findings

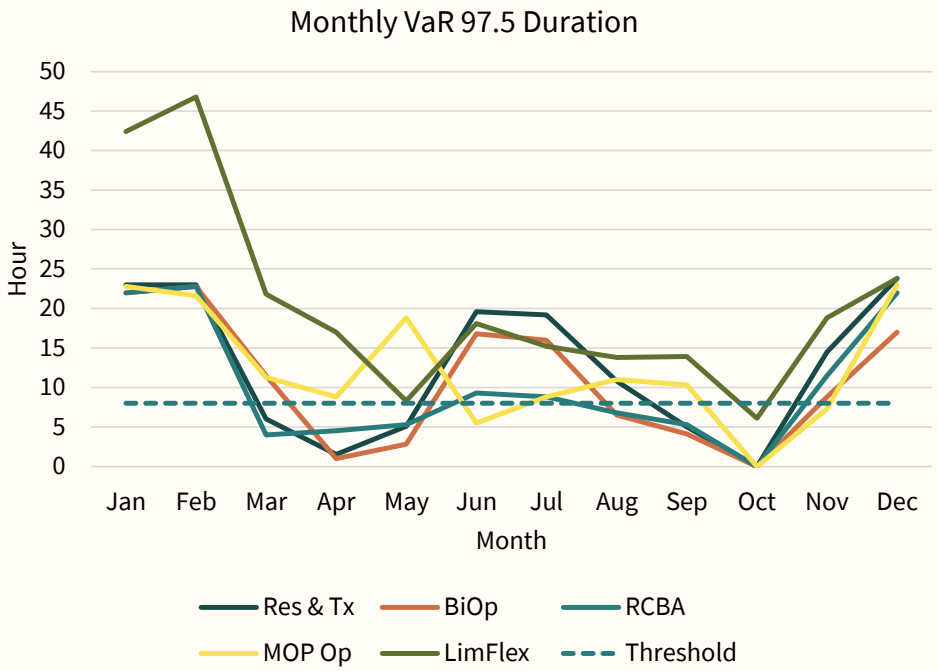
- Market availability does not change significantly across the various sensitivities
  - The 20-year buildouts are remarkably similar
  - The near-term buildouts shift a bit, primarily where there are limitations in resource (and particularly short-duration storage) availability)
- Key drivers of the builds are state policies, specifically carbon pricing in California, Washington, and Canada and demand growth
- Majority of resources built across all sensitivities are a balance of renewables, storage (both short and longer duration), and gas
- Buildouts and implied prices indicates that the economics of the market is likely to be very different from previous recent studies
- Given the similarity across buildouts, the differences in these market studies is not expected to be a significant driver of differences in regional resource buildouts in the next step

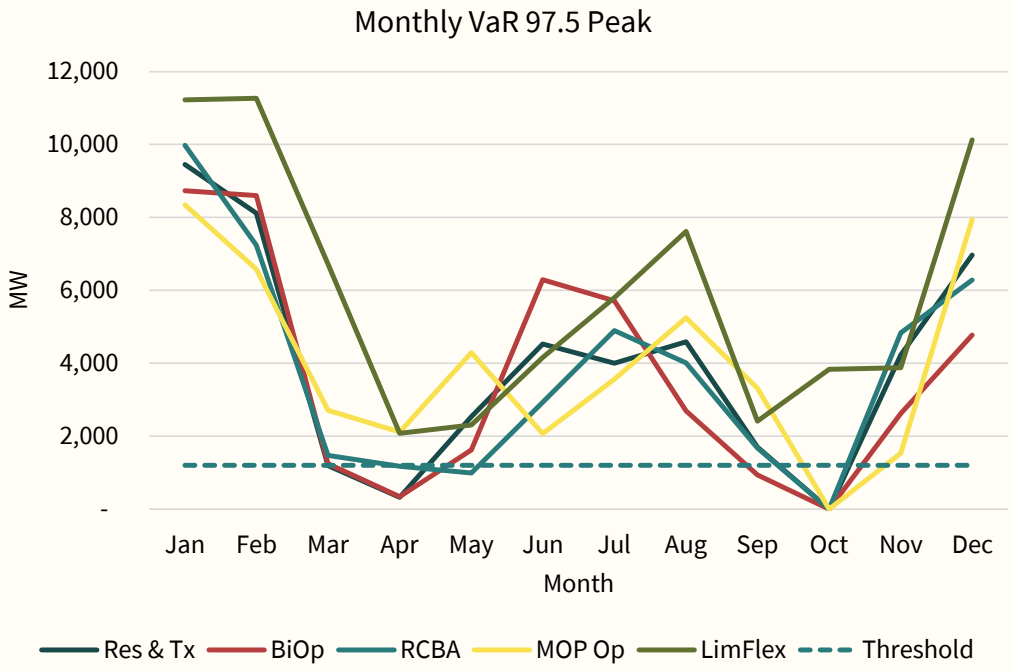
# All Sensitivities



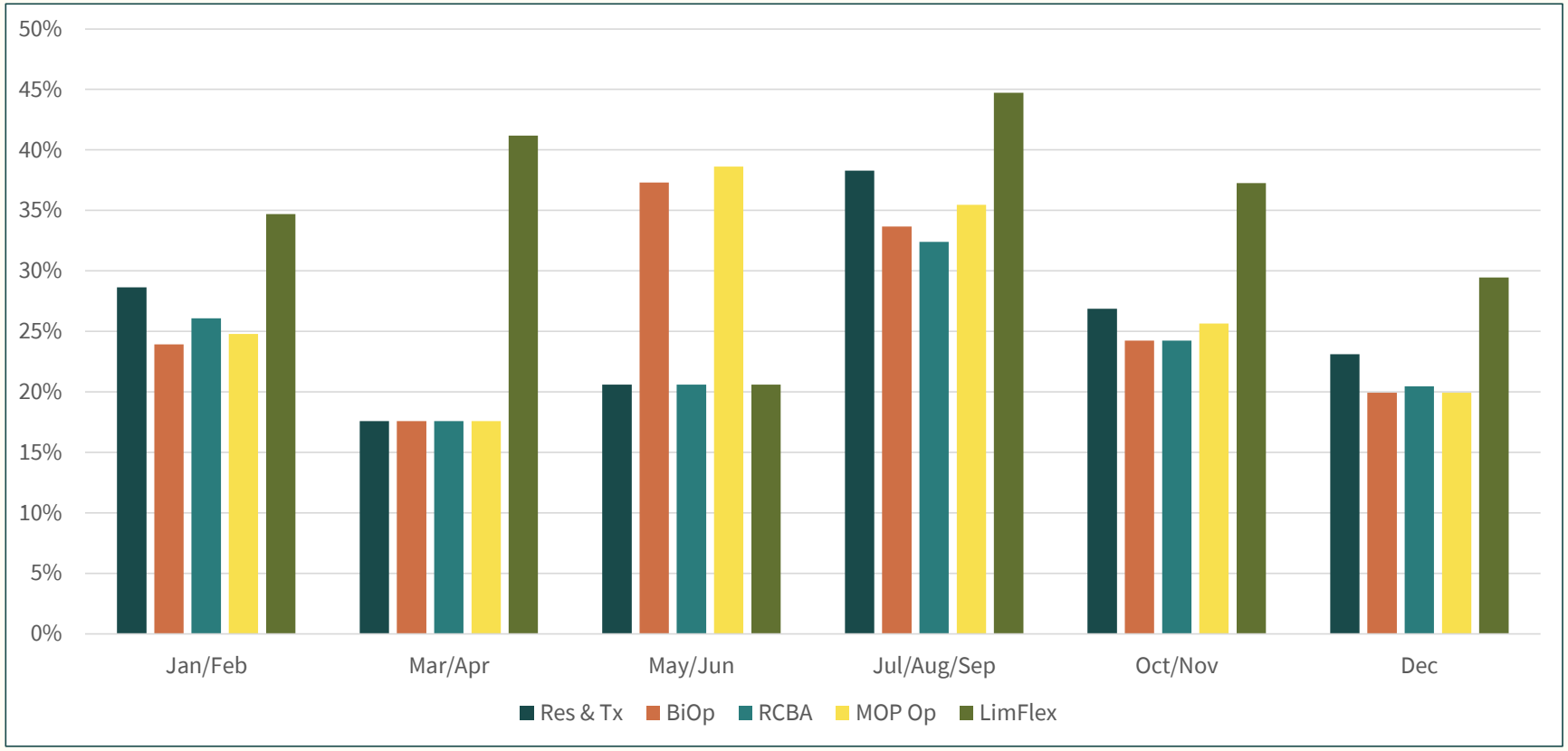
# System Needs in 2031

# System Needs are Longest and Largest in Winter and Summer

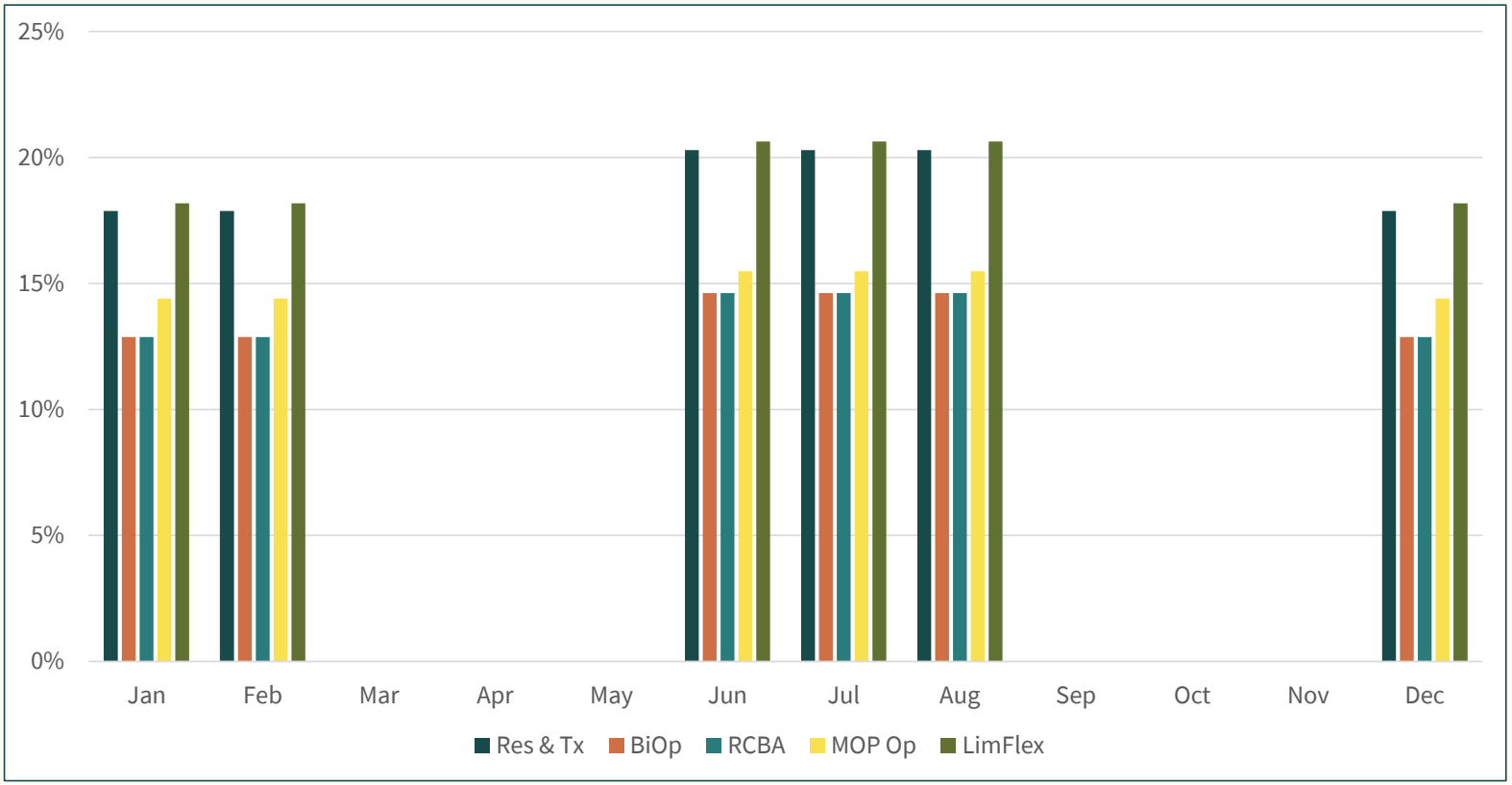


# Final Planning Reserve Margin - Peak



# Final Adequacy Reserve Margin - Energy



# Feel free to connect!

Jennifer Light,
jlight@nwcouncil.org

www.nwcouncil.org/energy/ninthpowerplan/

Northwest **Power** and **Conservation** Council