

# 2024 Integrated Resource Plan (IRP) Progress Report Resolution

Sustainability, City Light, Arts & Culture Committee

July 19, 2024

# Requested Action

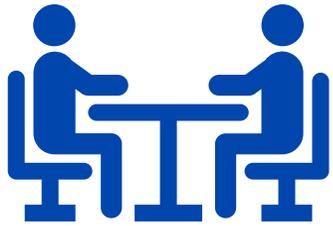
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- Adopt a resolution that:
  - Acknowledges and approves the 2024 IRP Progress Report to allow its submission to the Washington Department of Commerce by September 1, 2024
  - Concur that City Light will continue emphasizing environmental leadership through conservation programs and compliance with state regulations
  - Establish the September 1, 2026 submission date for the next full Integrated Resource Plan

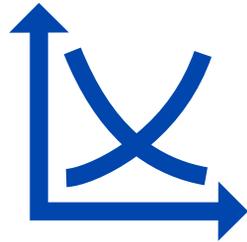


# What is an Integrated Resource Plan?

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Customer & Stakeholder  
Engagement



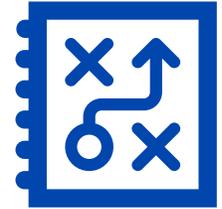
Evaluation of Load  
& Resources



Not an  
Acquisition Plan



Not an Appropriation  
of Funds

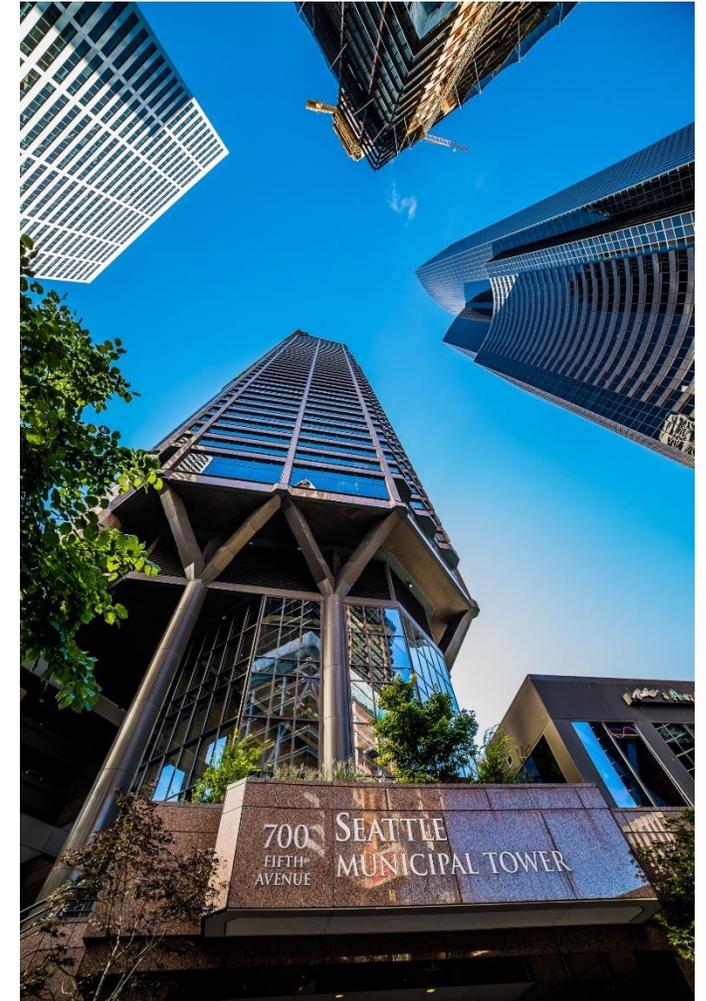


Resource Planning  
Playbook

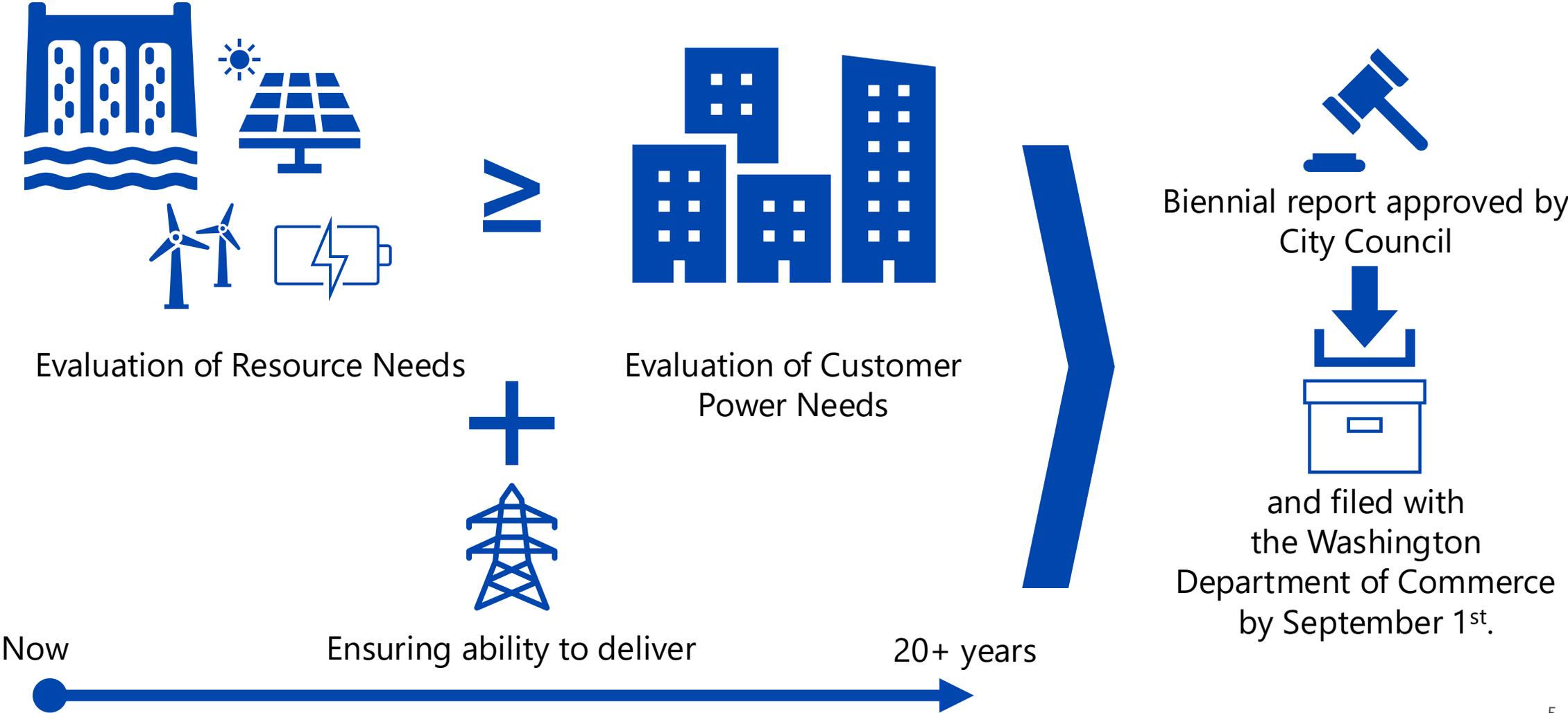


# IRP Advisory Panel

Member	Organization
Steve Gelb	Emerald Cities Collaborative
Paul Munz	Former Bonneville Power Administration
Jeremy Park	University of Washington
Yuri Rodrigues	Seattle Pacific University
Mike Ruby	Envirometrics, Inc.
Amy Wheelless	WA Department of Commerce
Elizabeth Osborne	WA Department of Commerce
Austin Scharff	WA Department of Commerce
John Ollis	NW Power & Conservation Council
Charlee Thompson	Northwest Energy Coalition
Dr. Angela Griffin	Byrd Barr



# Integrated Resource Plan (IRP) Requirements



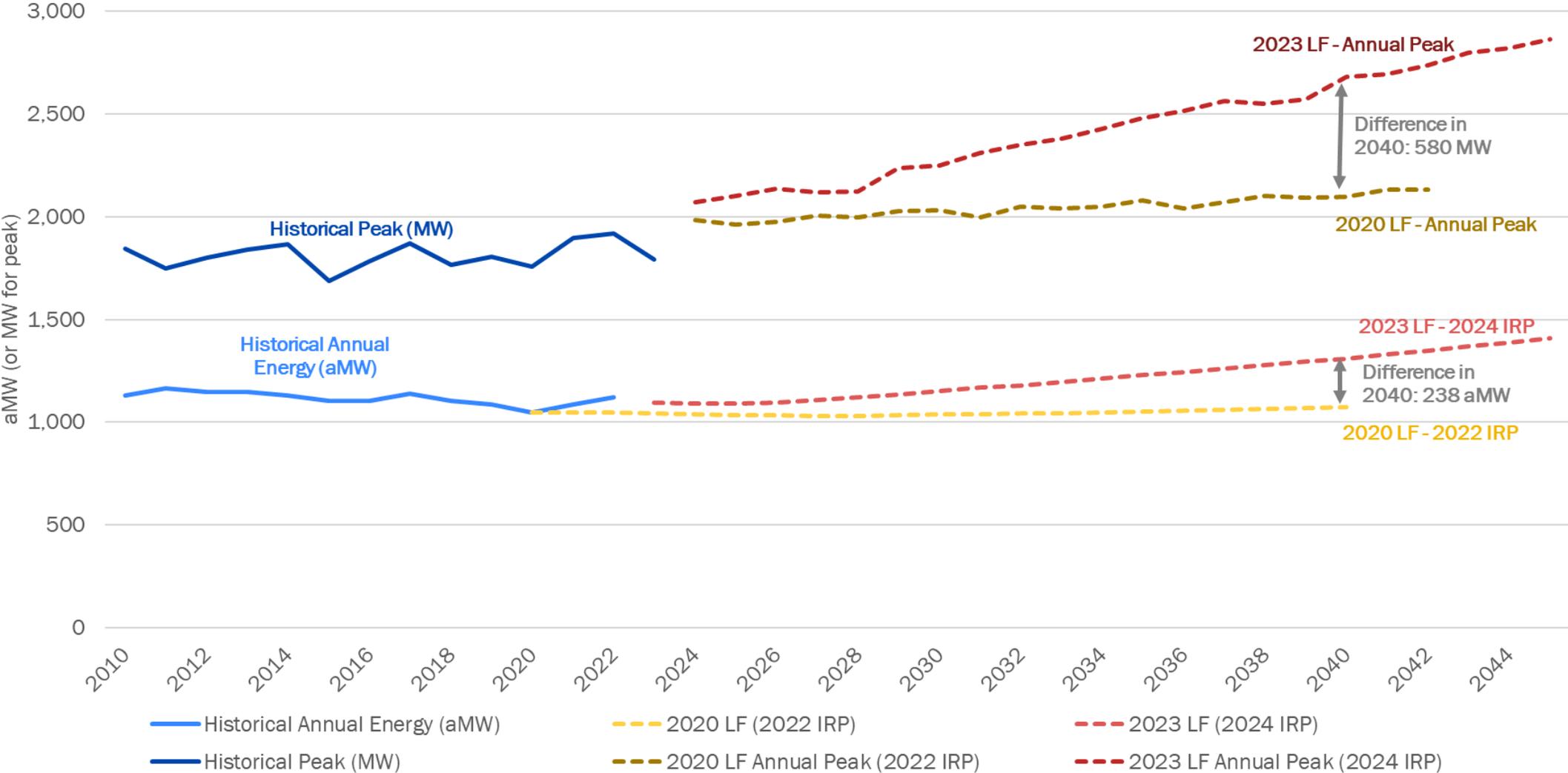
# What is a Progress Report?

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# Load Growth: 2022 IRP v 2024 IRP Progress Report

## Load Forecast Comparison



# Resource Needs: 2022 IRP v 2024 IRP Progress Report

New Wholesale Resource Additions (Nameplate MW)	2022 Full IRP			2024 IRP Progress Report		
	2022 – 2031	2032 – 2041	TOTAL	2024 – 2033	2034 – 2043	TOTAL
Battery				200		200
Solar	175	0	175	375		375
Solar + Battery				50	25	75
Wind	225	50	275	1,100	100	1,200
Enhanced Geothermal				100	300	400
Offshore Wind					100	100
<b>Wholesale Resources Subtotal*</b>	<b>400</b>	<b>50</b>	<b>450</b>	<b>1,825</b>	<b>525</b>	<b>2,350</b>

\*Additional resources continued on next slide

# Resource Needs: 2022 IRP v 2024 IRP Progress Report

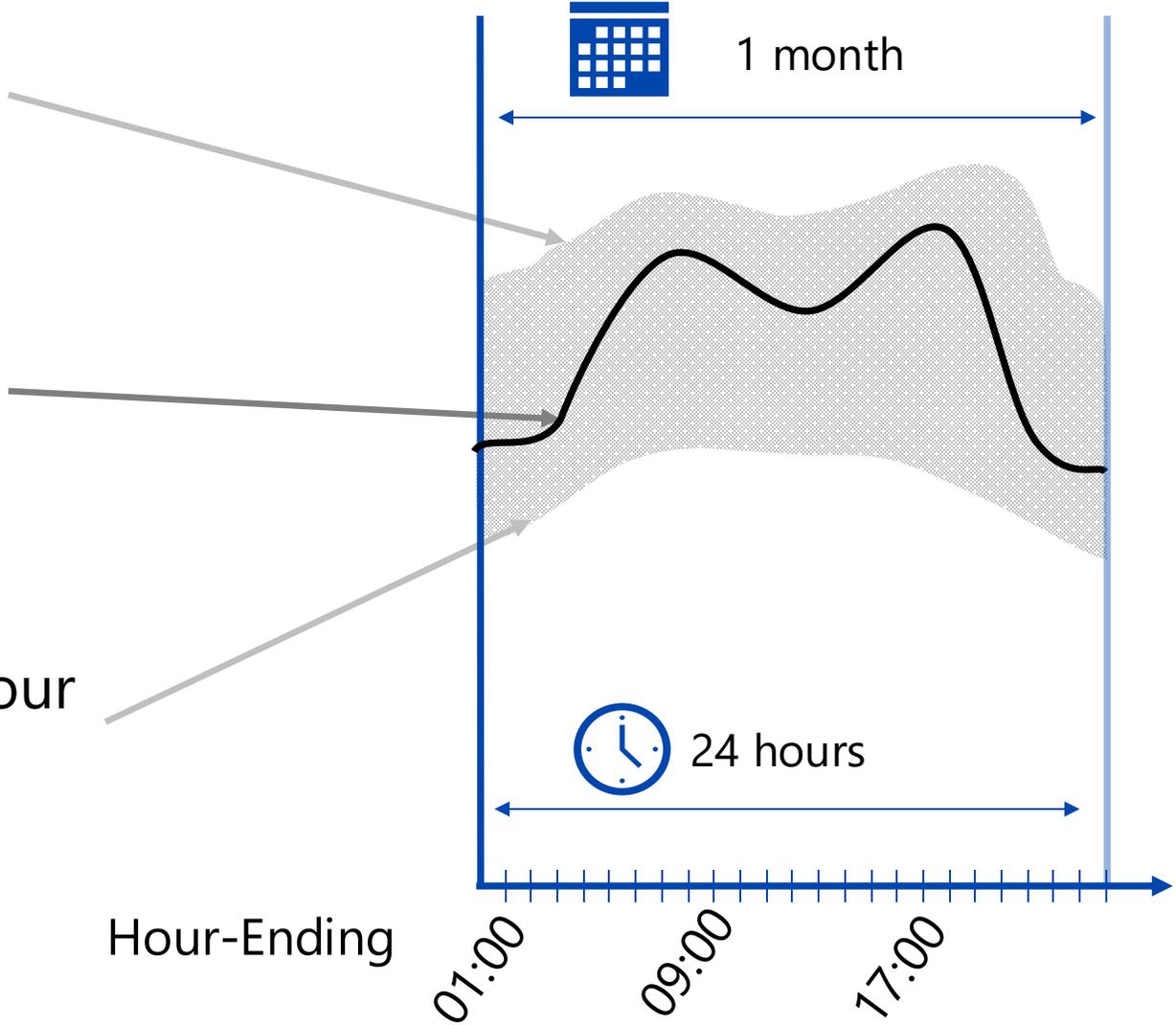
New Conservation Resource Additions	2022 Full IRP			2024 IRP Progress Report		
	2022 – 2031	2032 – 2041	TOTAL	2024 – 2033	2034 – 2043	TOTAL
Energy Efficiency (aMW)	85	31	116	80	49	129
Customer Solar Programs (aMW)	4	4	8	12	21	33
Time of Use Program (MW)				7	8	15
Demand Response Programs (MW)	79	43	122	19	17	36
<b>Conservation Resources Subtotal</b>	<b>168</b>	<b>78</b>	<b>246</b>	<b>118</b>	<b>95</b>	<b>213</b>
<b>Wholesale and Conservation Resources Grand Total</b>	<b>568</b>	<b>128</b>	<b>696</b>	<b>1,943</b>	<b>620</b>	<b>2,563</b>

# Hourly Load Shapes using Month-Hour Graphs

High range of simulated hour in sample set for month

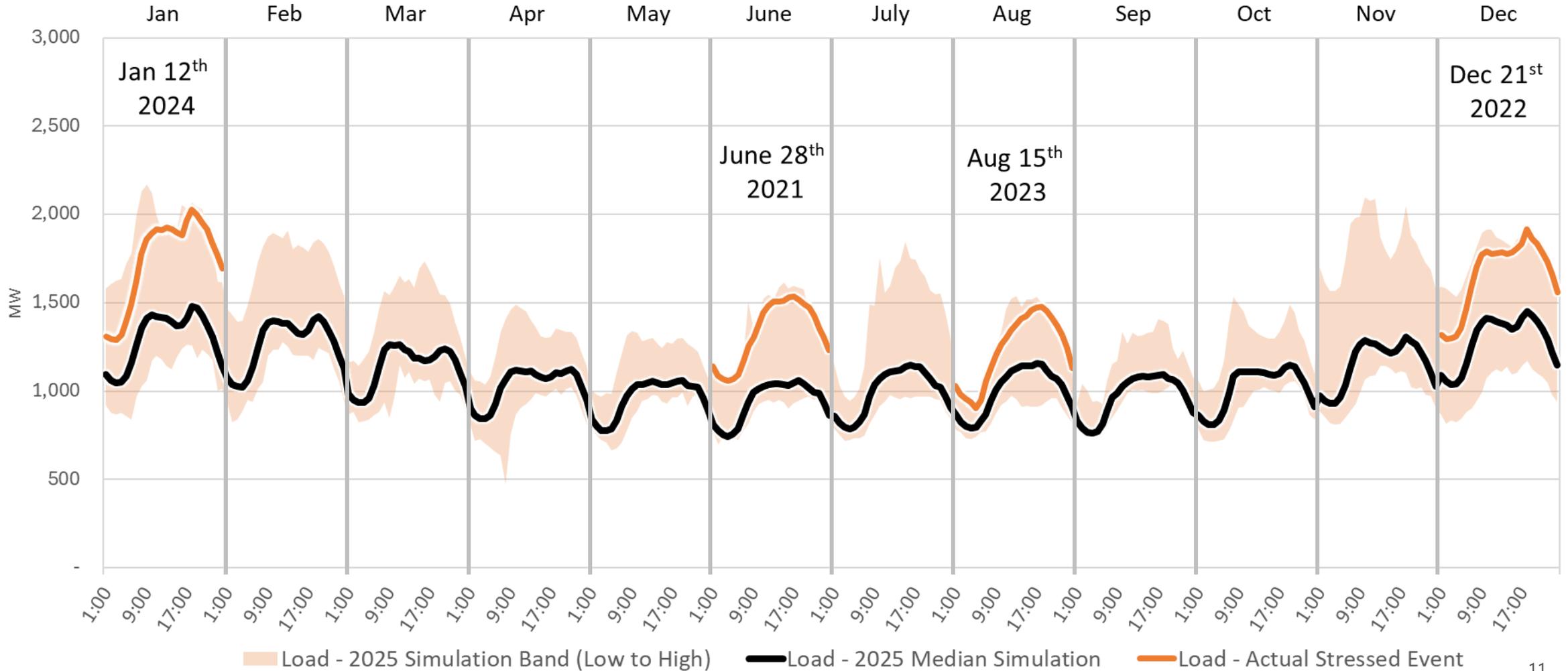
Sample amount for hour in set

Low range of simulated hour in sample set for month



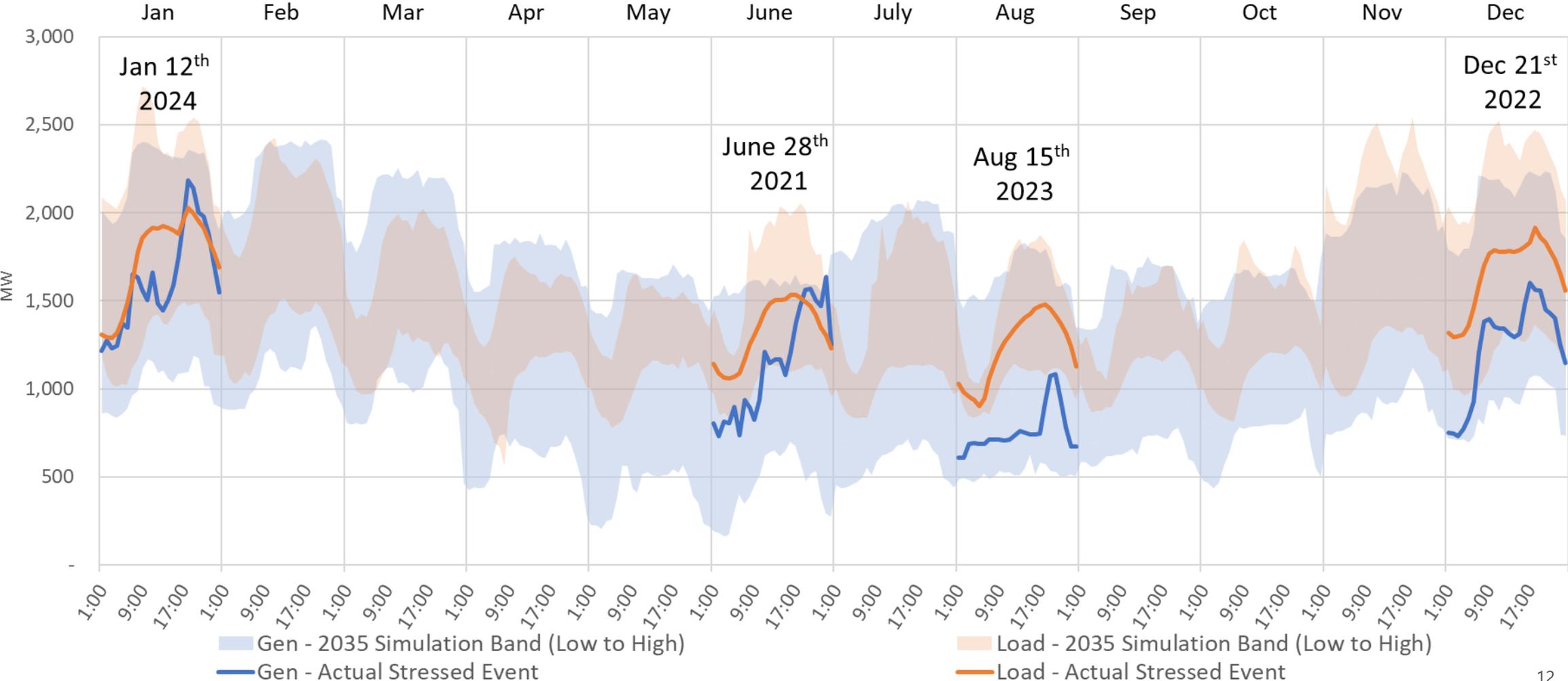
# Comparing Simulation Ranges to Stressed Events

## Stressed Conditions vs 2025 Median Load Forecast



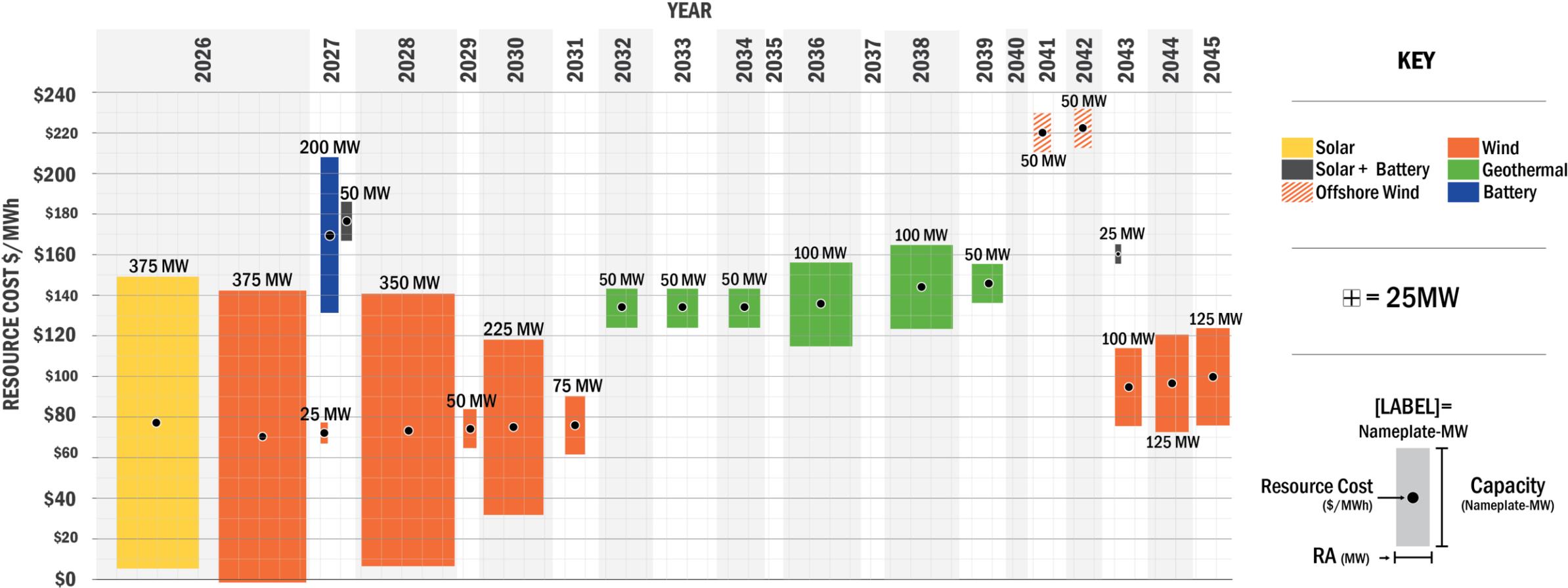
# Comparing Simulation Ranges to Stressed Events

## Stressed Conditions vs 2035 Simulated Load & Resource Balance



# Resource Planning Playbook

## 2026-2045 Resource Additions

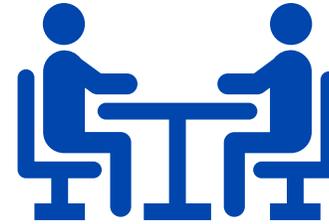


\*Resource Cost is delivered to City Light in nominal \$/MWh for year selected

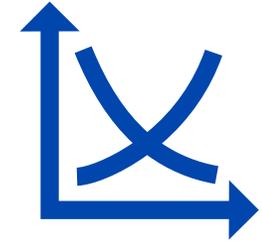
# Study Take-Aways

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- Electrification of buildings and transportation results in increased customer electricity needs
- Winter peaks are the binding constraint for adequately meeting future demand
- Meeting future electricity needs requires adding wind, solar, batteries, and carbon free, firm energy resources to Seattle City Light's portfolio



Customer & Stakeholder  
Engagement



Evaluation of Load  
& Resources



Resource Planning  
Playbook

# Requested Action

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# THANK YOU

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**Seattle City Light**



# Seattle City Light

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[seattle.gov/city-light](http://seattle.gov/city-light)



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# Mission, Vision & Values

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## Mission

Seattle City Light provides our customers with affordable, reliable and environmentally responsible energy services.

## Vision

Create a shared energy future by partnering with our customers to meet their energy needs in whatever way they choose.

## Values



**Customers First**



**Environmental Stewardship**



**Equitable Community Connections**



**Operational and Financial Excellence**



**Safe and Engaged Employees**

# Current Resource Portfolio

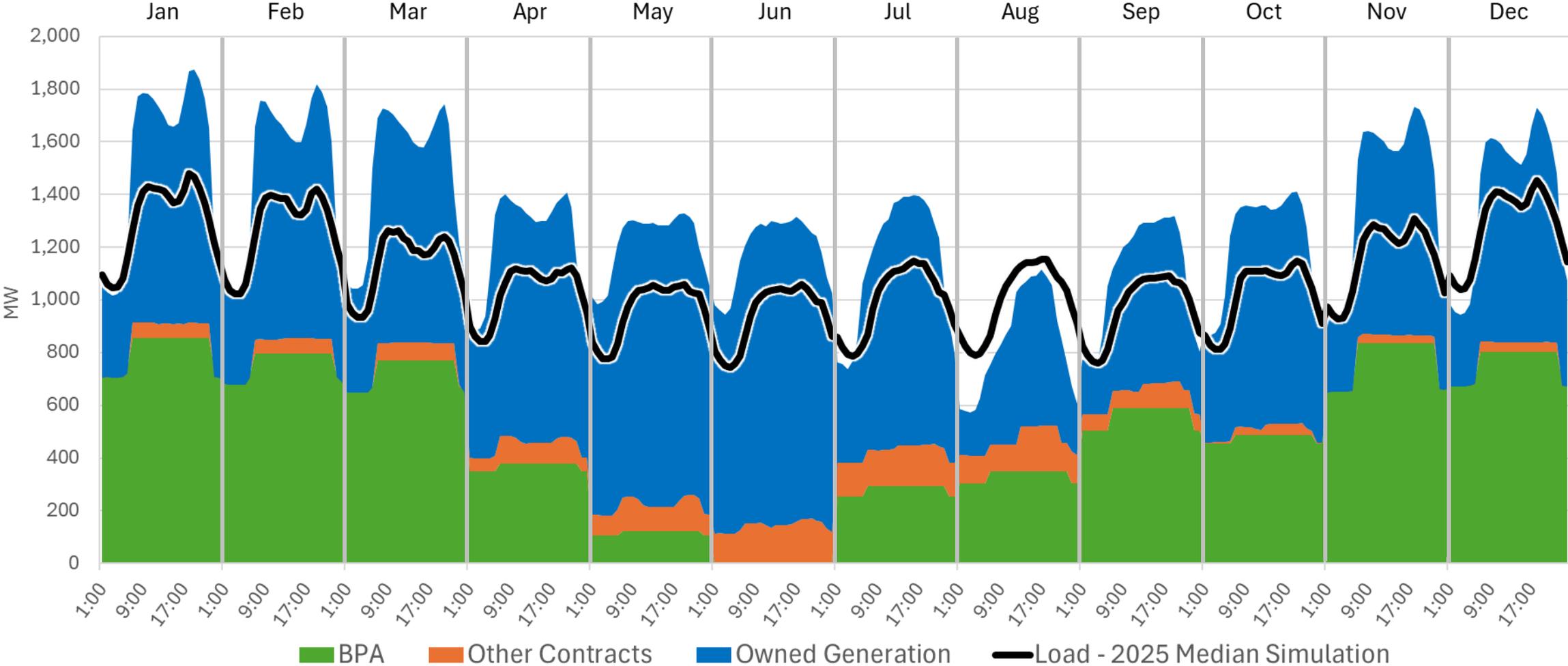
## ENERGY RESOURCES

- Owned Hydro
- Treaty Rights From British Columbia
- Long-Term Hydro Contracts  
(CBH is the Columbia Basin Hydropower)
- Other Long-Term Contracts



# Current Resource Stack and 2025 Simulated Load

## 2025 Month-Hour Load & Resource Balance

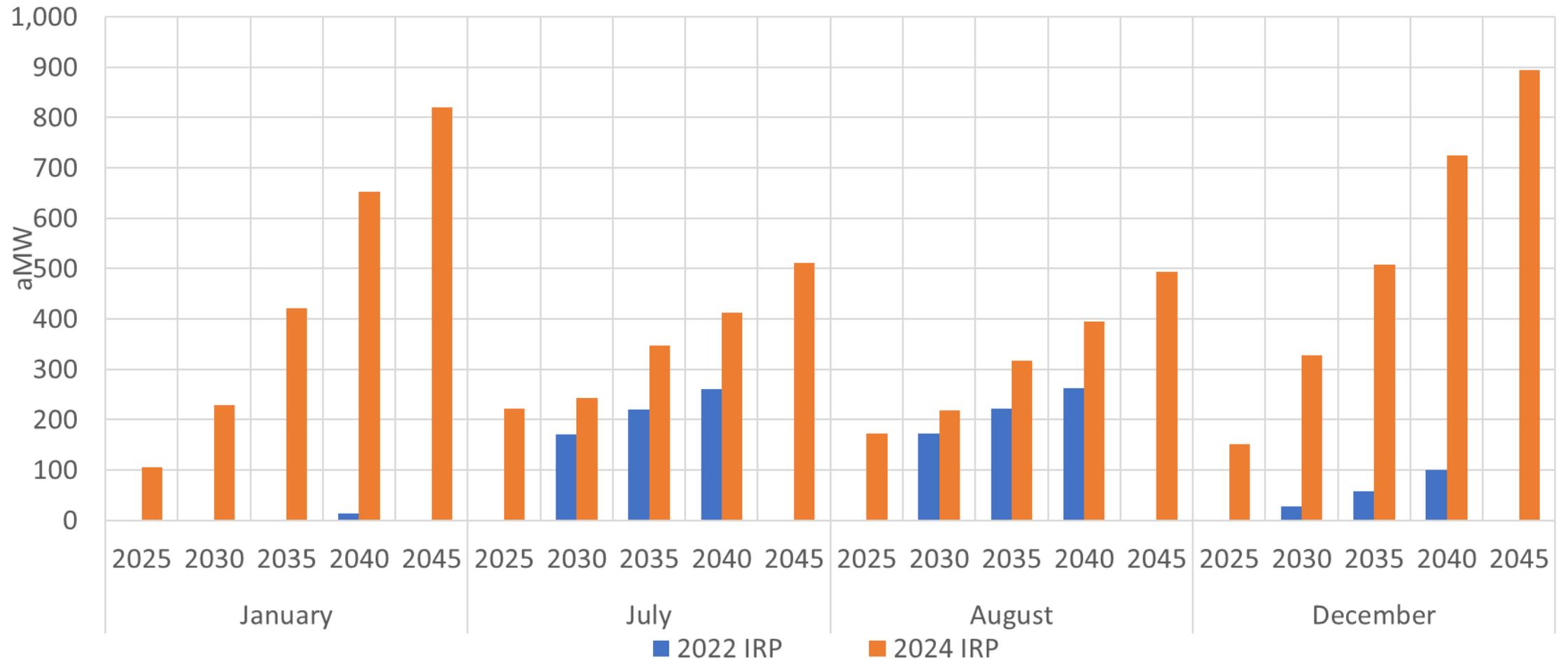


# 2023 DSMPA Results

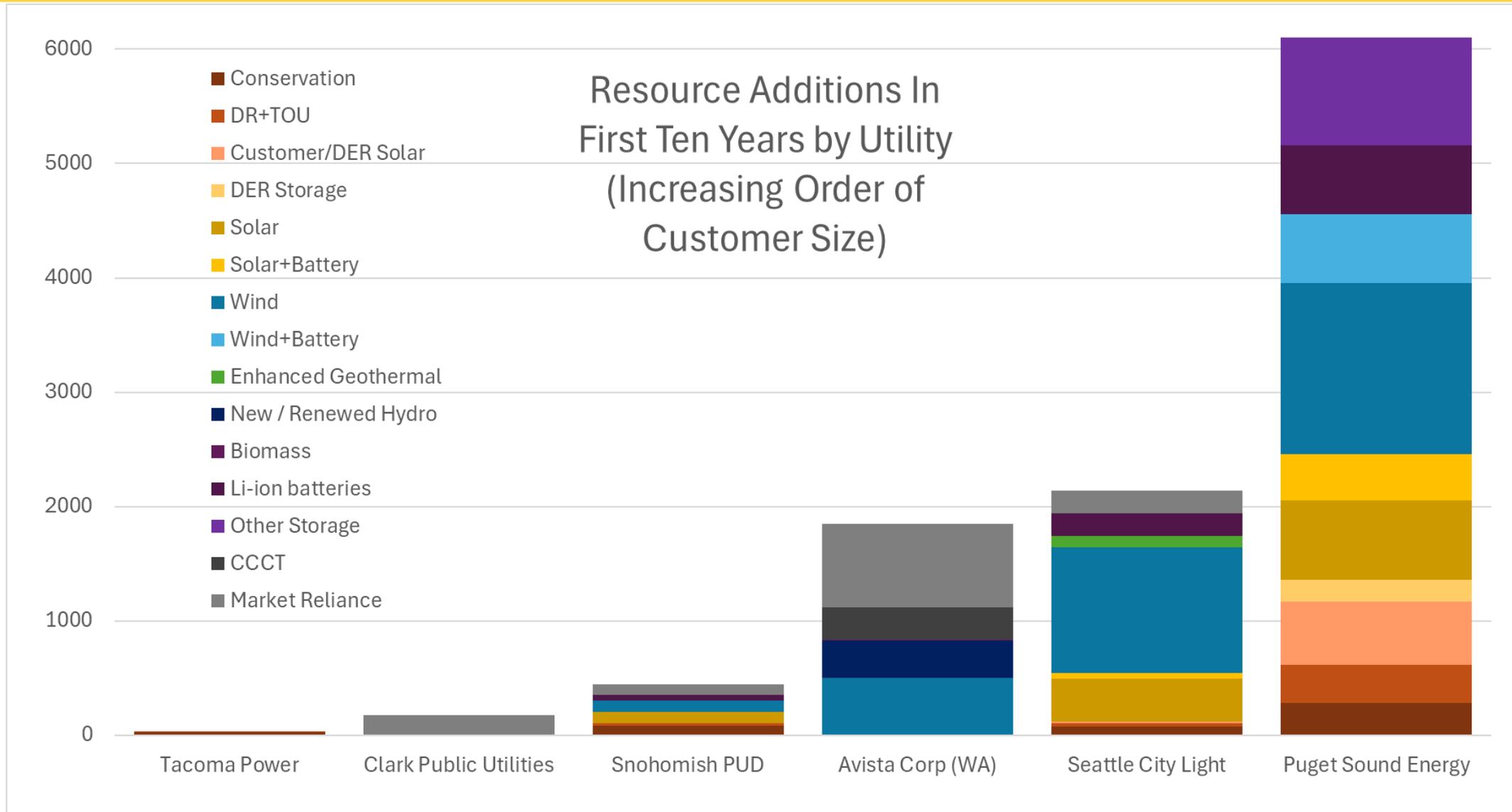
Available Economic Potential (aMW)					
Sector	2-Year (2024-2025)	4-Year (2024-2027)	10-Year (2024-2033)	22-Year (2024-2045)	20% of 10- Year
Residential	4	8	22	50	4
Commercial	12	23	49	72	10
Industrial	2	4	8	10	2
<b>Total</b>	<b>18</b>	<b>35</b>	<b>79</b>	<b>132</b>	<b>16</b>
Customer Solar	2	4	16	49	3

# Current Portfolio Needs Assessment 2022 vs 2024

Needs Assessment - 2022 IRP vs 2024 IRP



# Modeling & Analysis: Other Utilities' Resource Additions Comparison



# Load Forecasts Compared to Other Washington Utilities

Ten-Year IRP Load Forecast Changes Over Base Year

