

2024 Integrated Resource Plan (IRP) Progress Report Resolution

Sustainability, City Light, Arts & Culture Committee

July 19, 2024



Seattle City Light

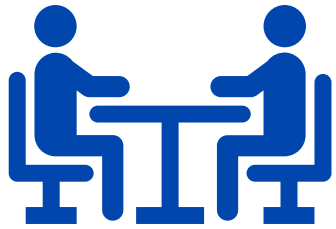
WE POWER SEATTLE

Requested Action

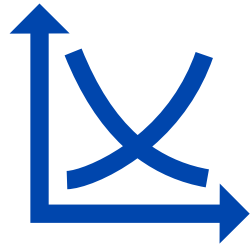
- Adopt a resolution that:
 - Acknowledges and approves the 2024 IRP Progress Report to allow its submission to the Washington Department of Commerce by September 1, 2024
 - Concur that City Light will continue emphasizing environmental leadership through conservation programs and compliance with state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



What is an Integrated Resource Plan?



Customer & Stakeholder
Engagement



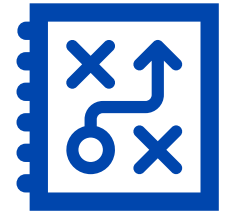
Evaluation of Load
& Resources



Not an
Acquisition Plan



Not an Appropriation
of Funds

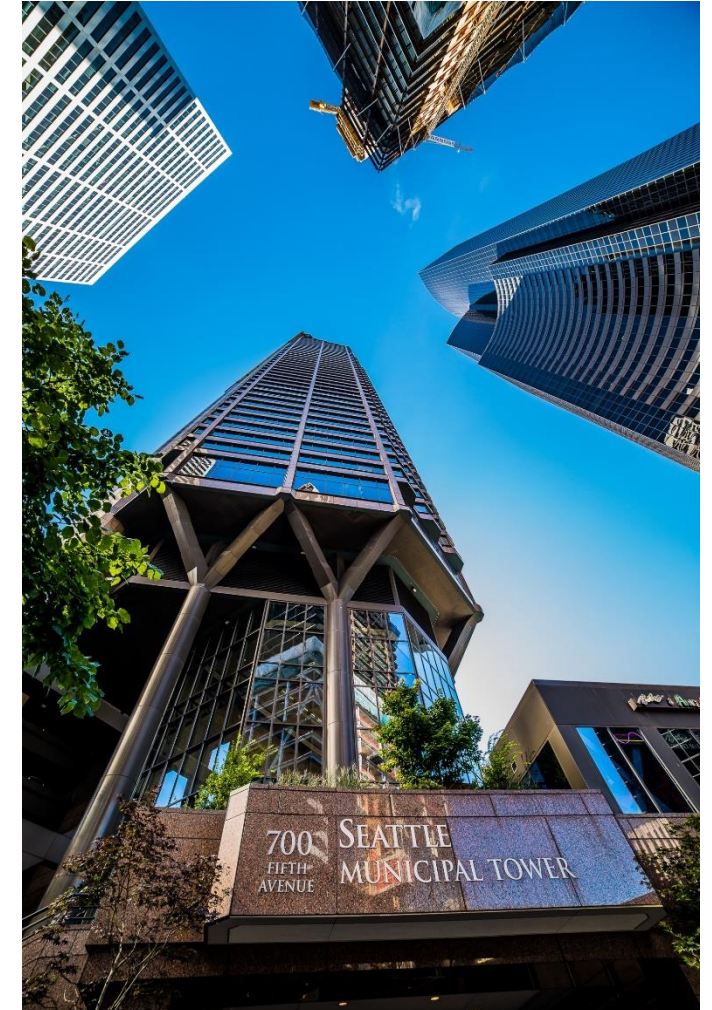


Resource Planning
Playbook

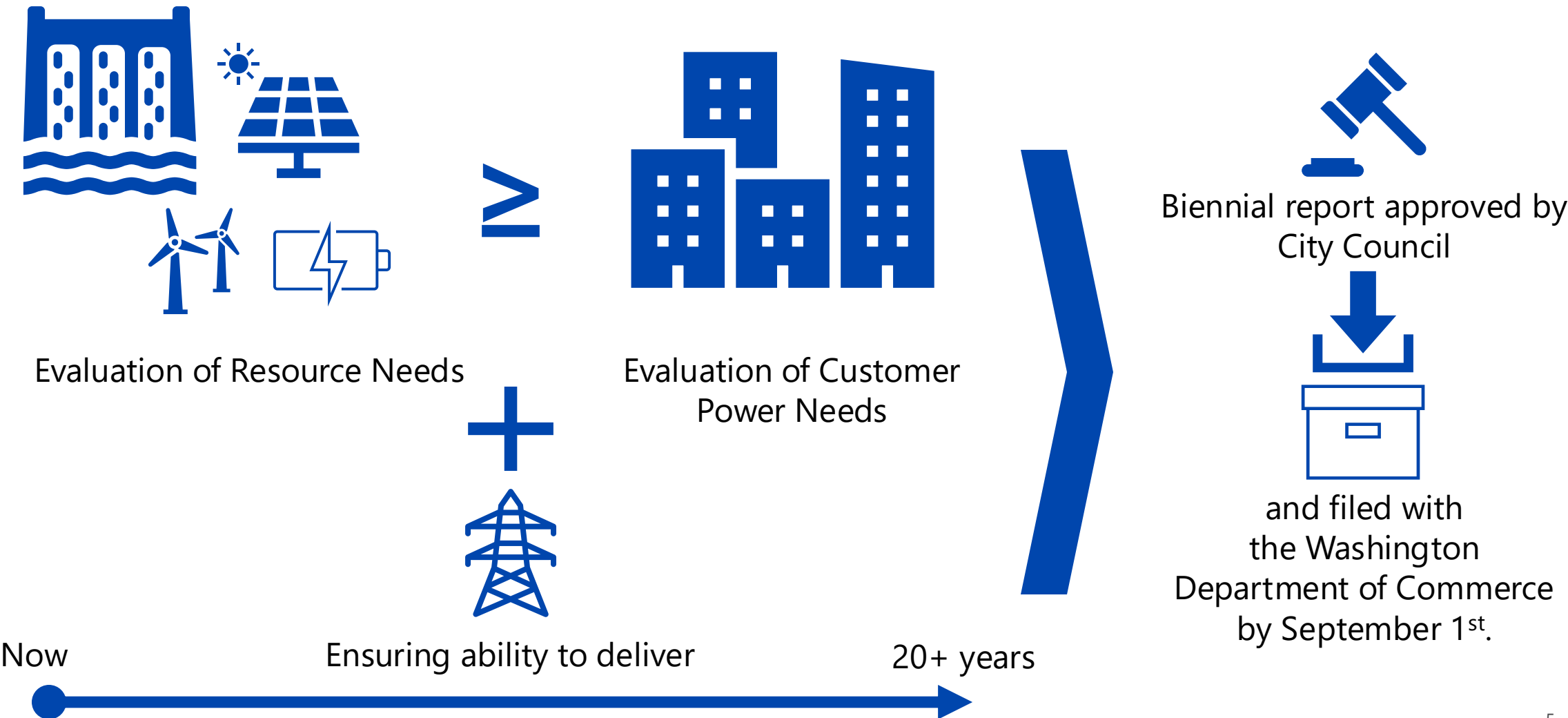


IRP Advisory Panel

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

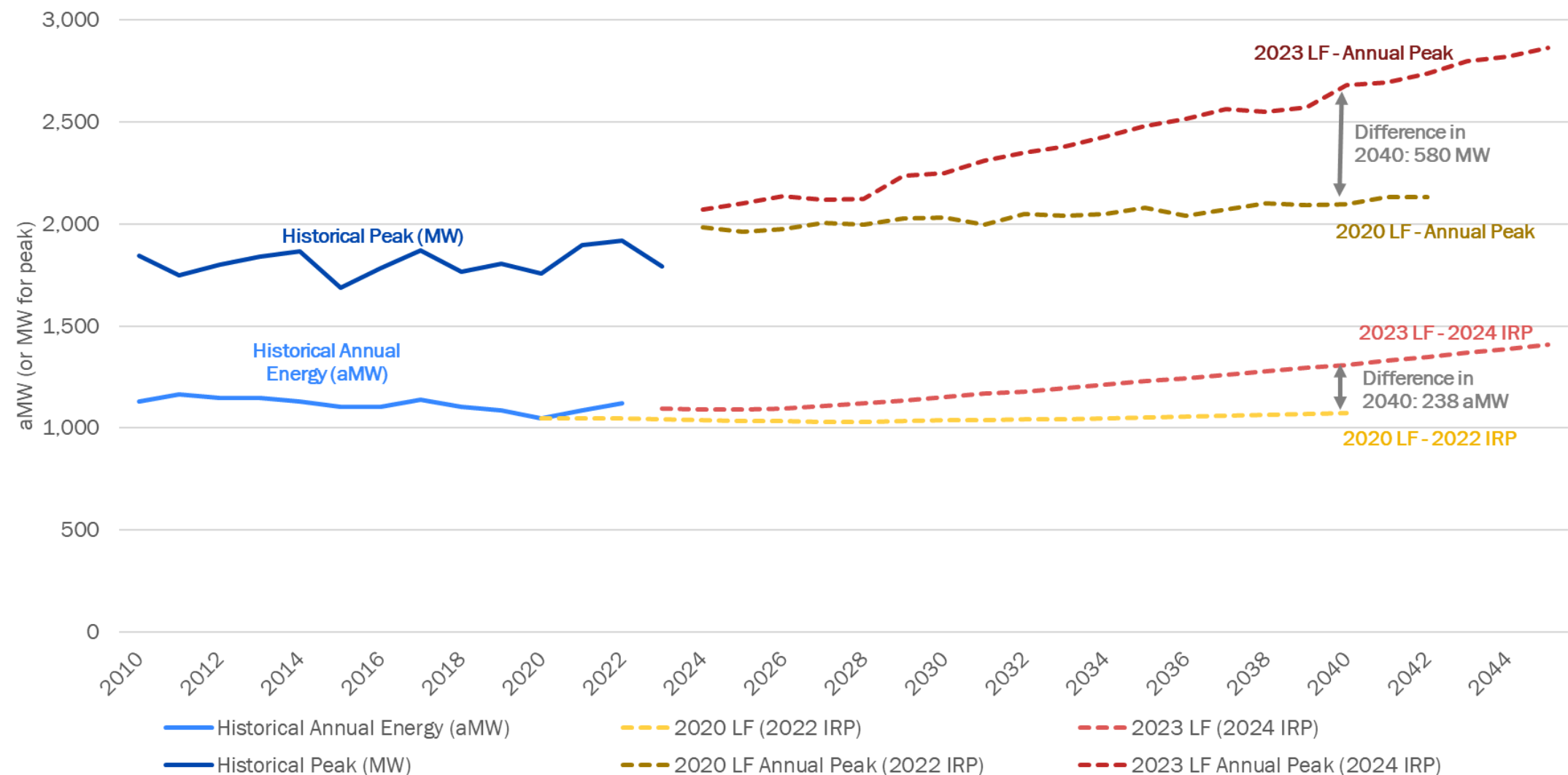


What is a Progress Report?



Load Growth: 2022 IRP v 2024 IRP Progress Report

Load Forecast Comparison



Resource Needs: 2022 IRP v 2024 IRP Progress Report

	2022 Full IRP			2024 IRP Progress Report		
New Wholesale Resource Additions (Nameplate MW)	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
Wholesale Resources Subtotal*	400	50	450	1,825	525	2,350

*Additional resources continued on next slide

Resource Needs: 2022 IRP v 2024 IRP Progress Report

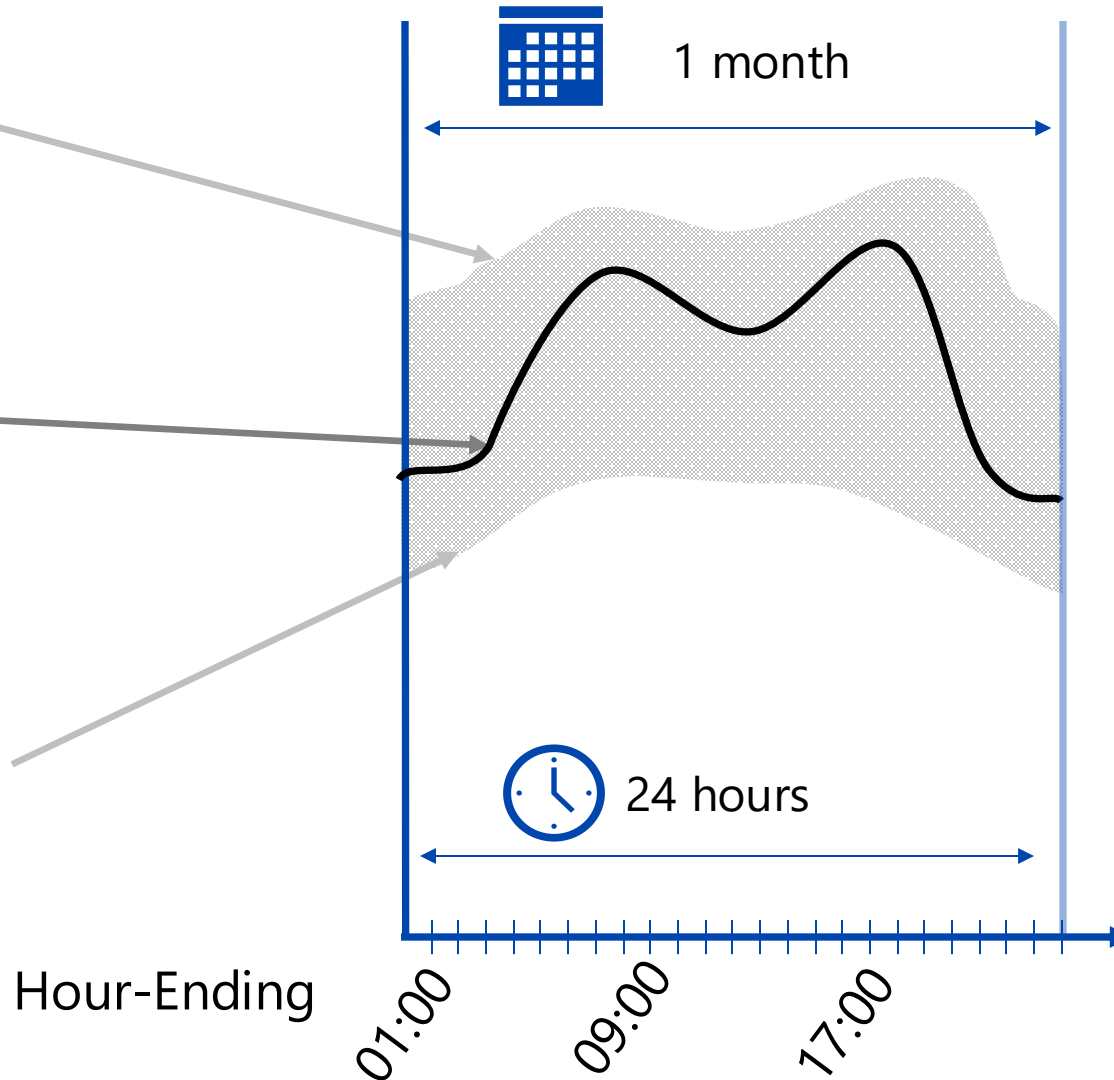
	2022 Full IRP			2024 IRP Progress Report		
New Conservation Resource Additions	2022 – 2031	2032 – 2041	TOTAL	2024 – 2033	2034 – 2043	TOTAL
Energy Efficiency (aMW)	85	31	116	80	49	129
Customer Solar Programs (aMW)	4	4	8	12	21	33
Time of Use Program (MW)				7	8	15
Demand Response Programs (MW)	79	43	122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

Hourly Load Shapes using Month-Hour Graphs

High range of simulated hour in sample set for month

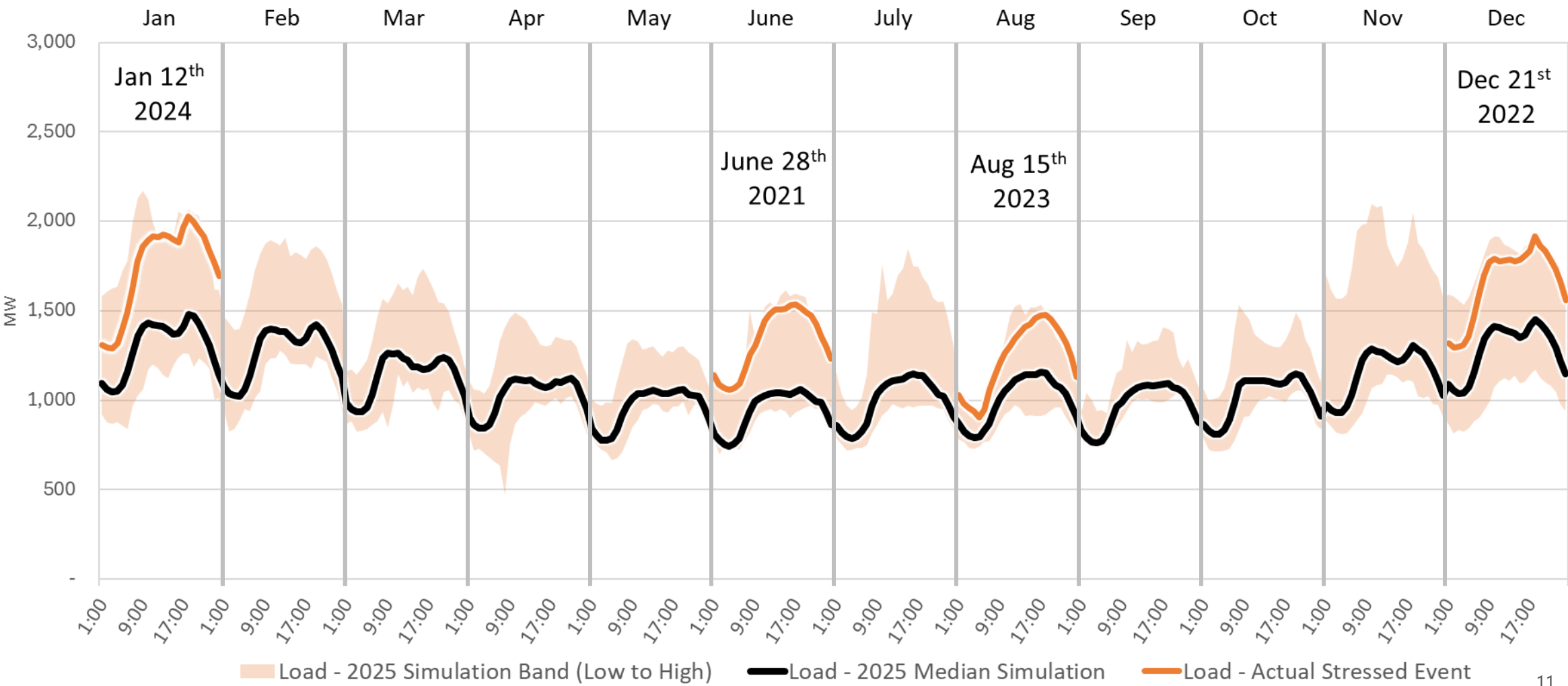
Sample amount for hour in set

Low range of simulated hour in sample set for month



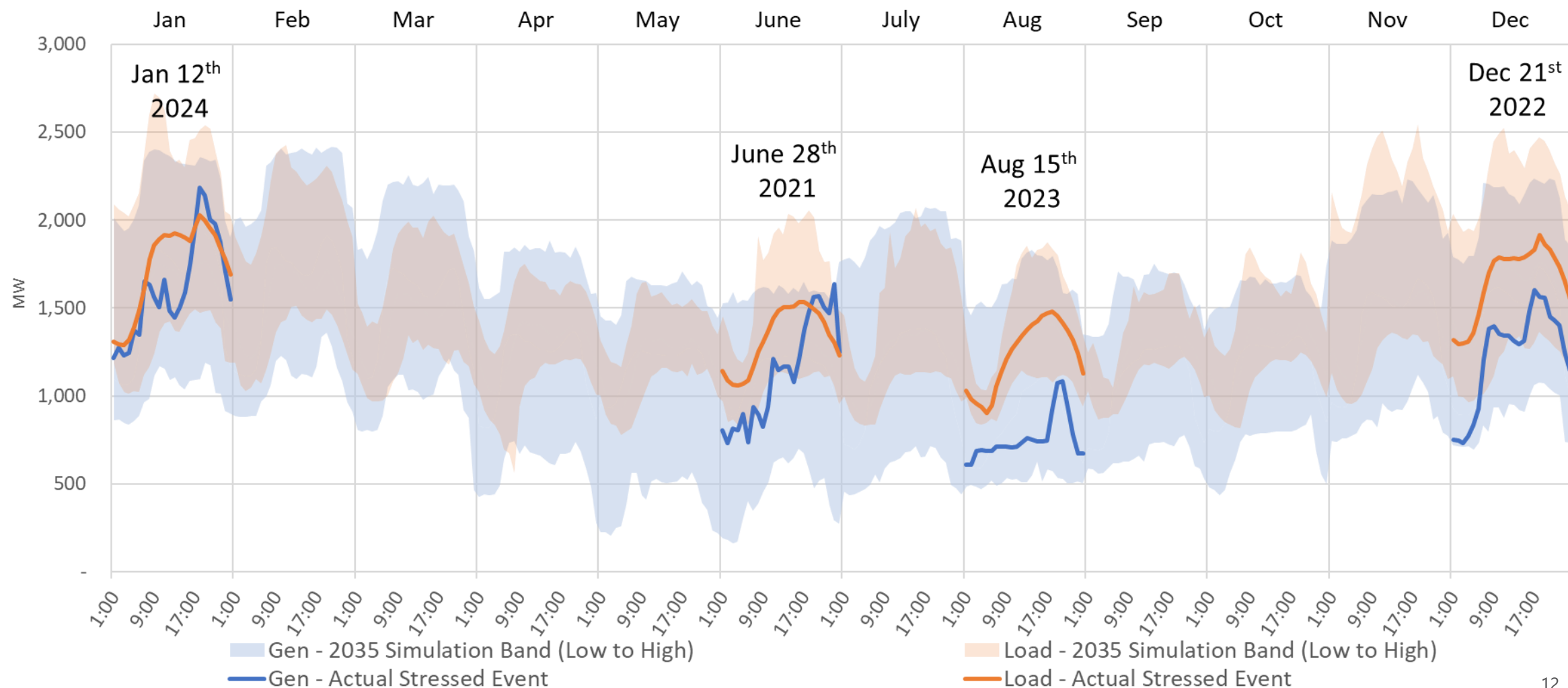
Comparing Simulation Ranges to Stressed Events

Stressed Conditions vs 2025 Median Load Forecast



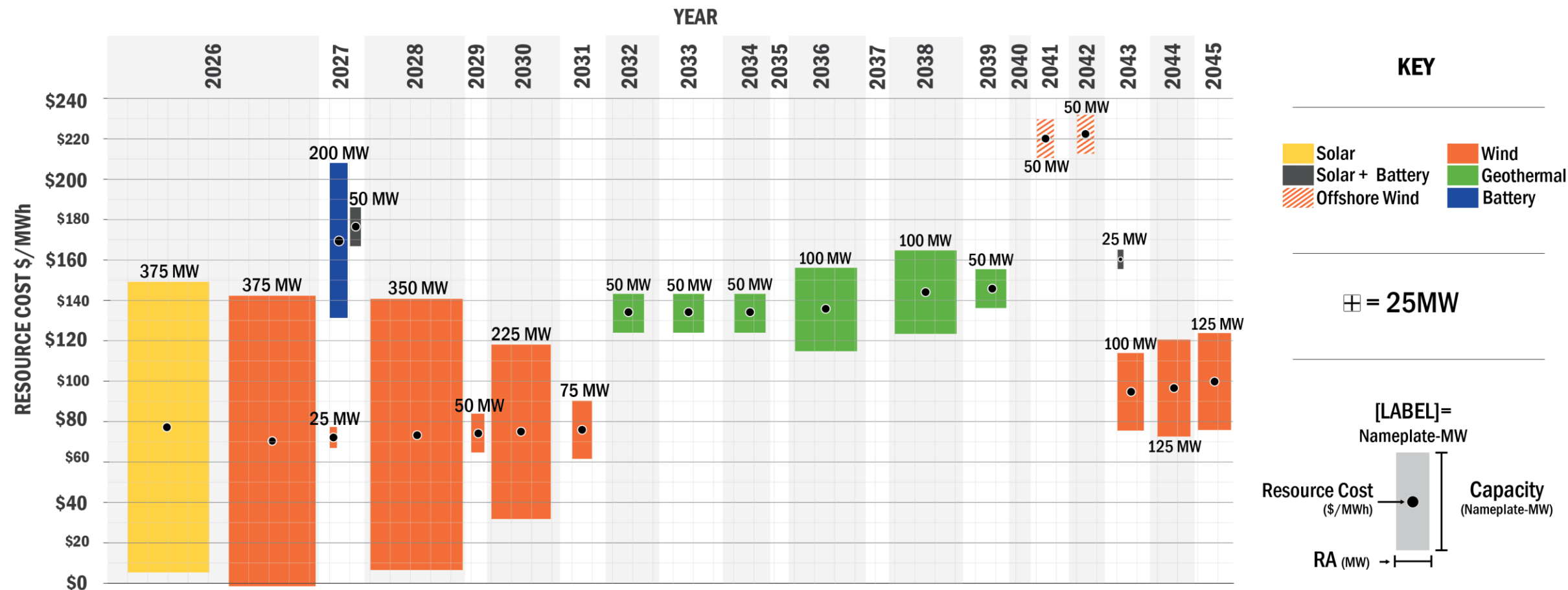
Comparing Simulation Ranges to Stressed Events

Stressed Conditions vs 2035 Simulated Load & Resource Balance



Resource Planning Playbook

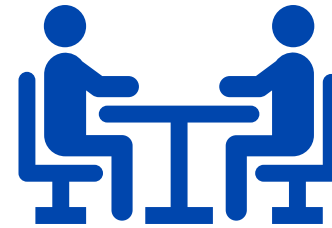
2026-2045 Resource Additions



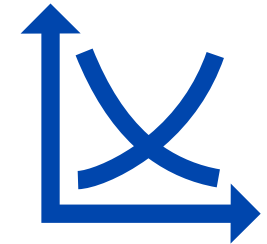
*Resource Cost is delivered to City Light in nominal \$/MWh for year selected

Study Take-Aways

- 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
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Resource Planning
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THANK YOU



Seattle City Light



Seattle City Light

seattle.gov/city-light



You Tube

Mission, Vision & Values

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



Seattle City Light

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Current Resource Portfolio

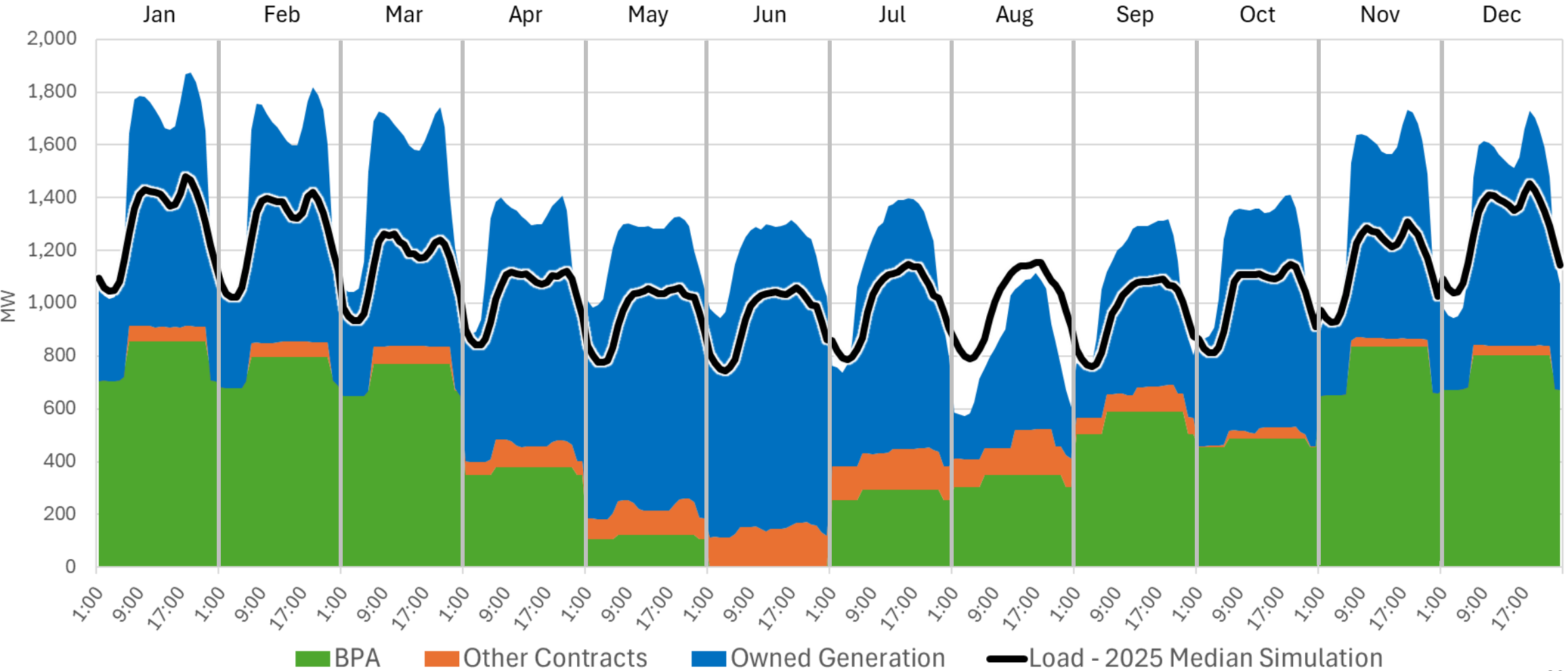
ENERGY RESOURCES

- 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

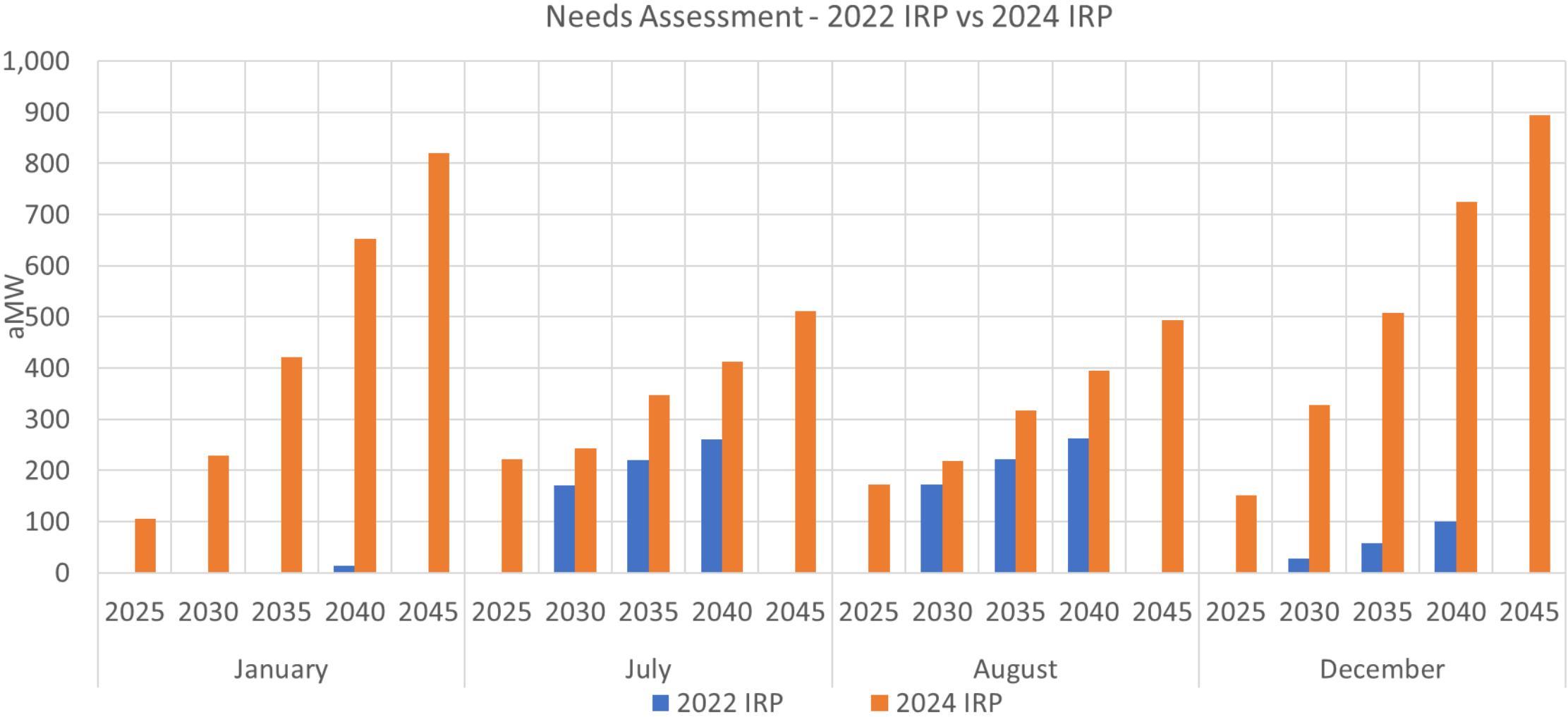
2025 Month-Hour Load & Resource Balance



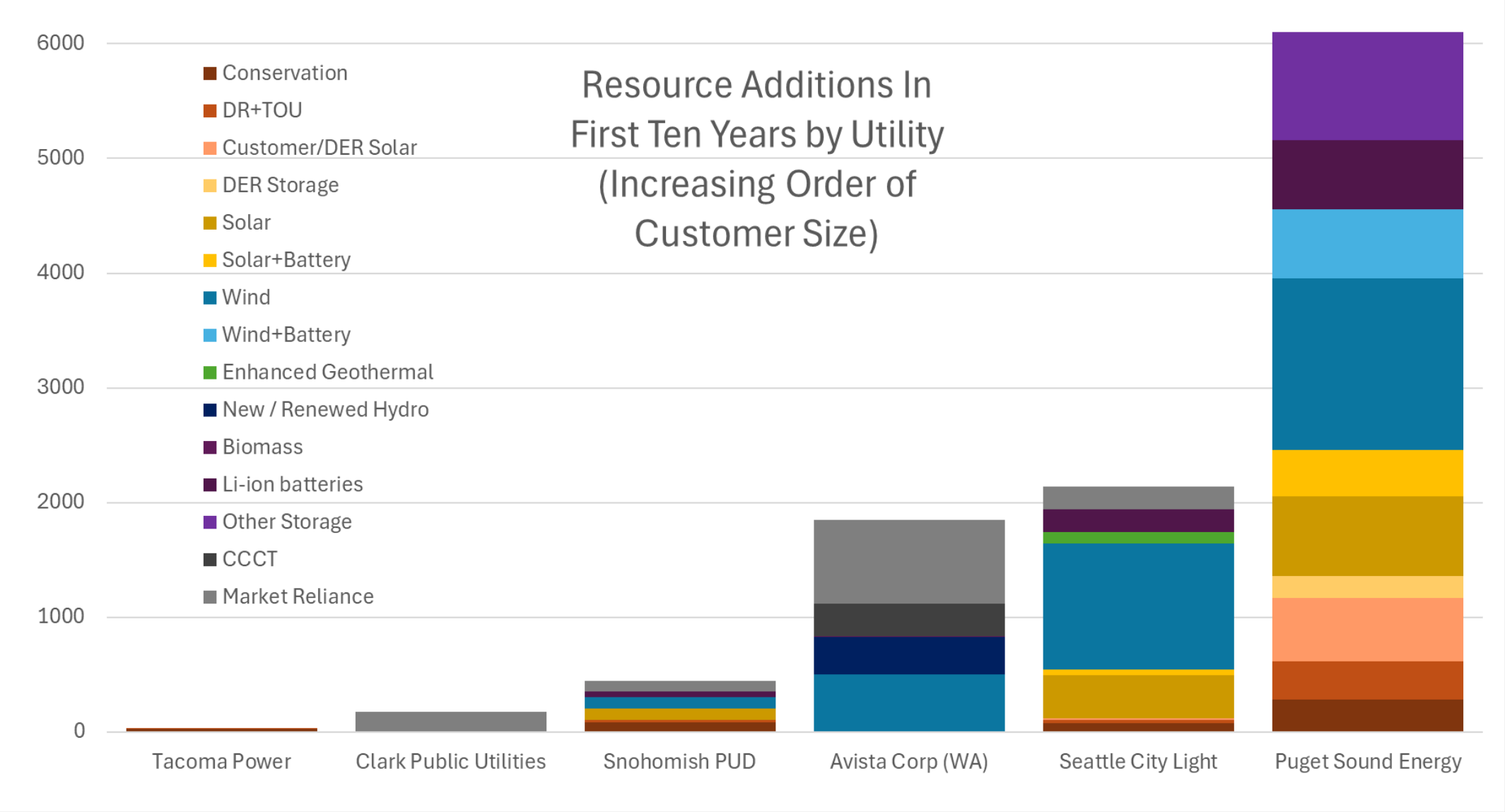
2023 DSMPA Results

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
Total	18	35	79	132	16
Customer Solar	2	4	16	49	3

Current Portfolio Needs Assessment 2022 vs 2024



Modeling & Analysis: Other Utilities' Resource Additions Comparison



Load Forecasts Compared to Other Washington Utilities

Ten-Year IRP Load Forecast Changes Over Base Year

