



2022 Integrated Resource Plan

Building the Long-Term Plan: July 27, 2022

SCL IRP Team – Paul Nissley & Saul Villarreal

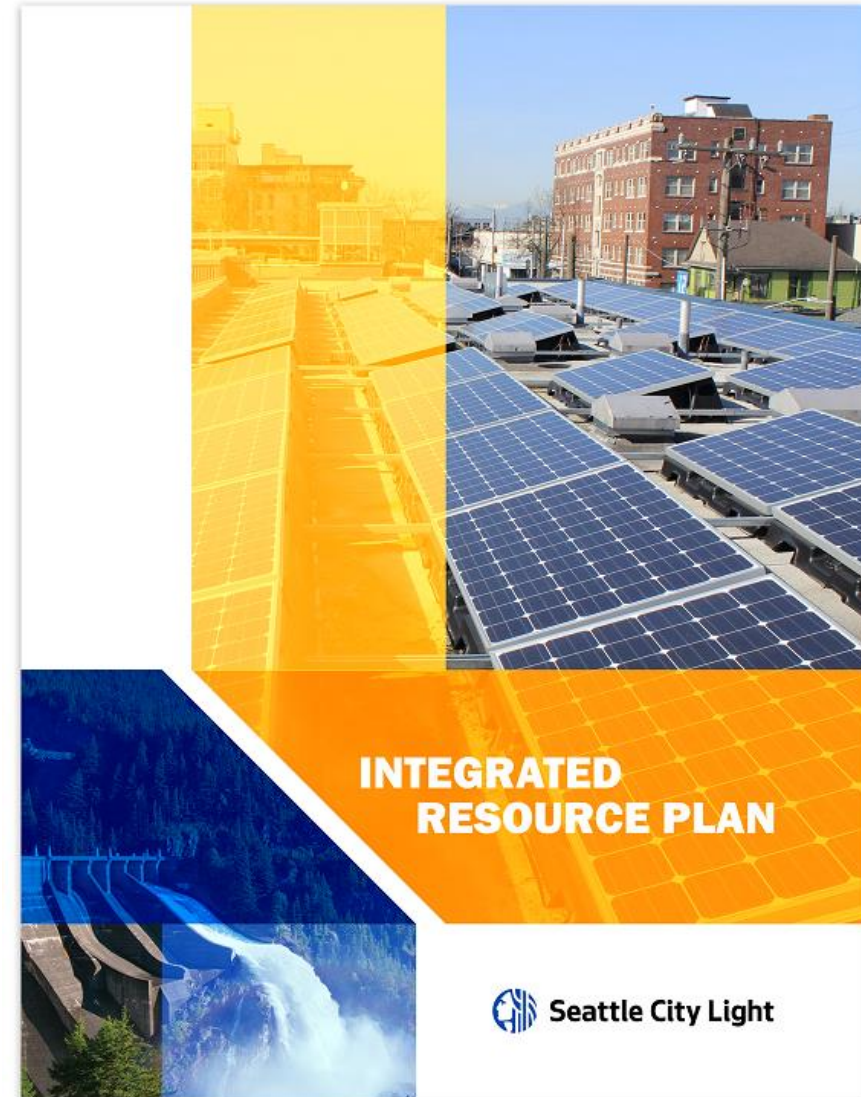


Seattle City Light

WE POWER SEATTLE

AGENDA

- What is an IRP?
- Why we do IRPs?
- IRP Process
- 2022 IRP Conclusions



What is an Integrated Resource Plan?

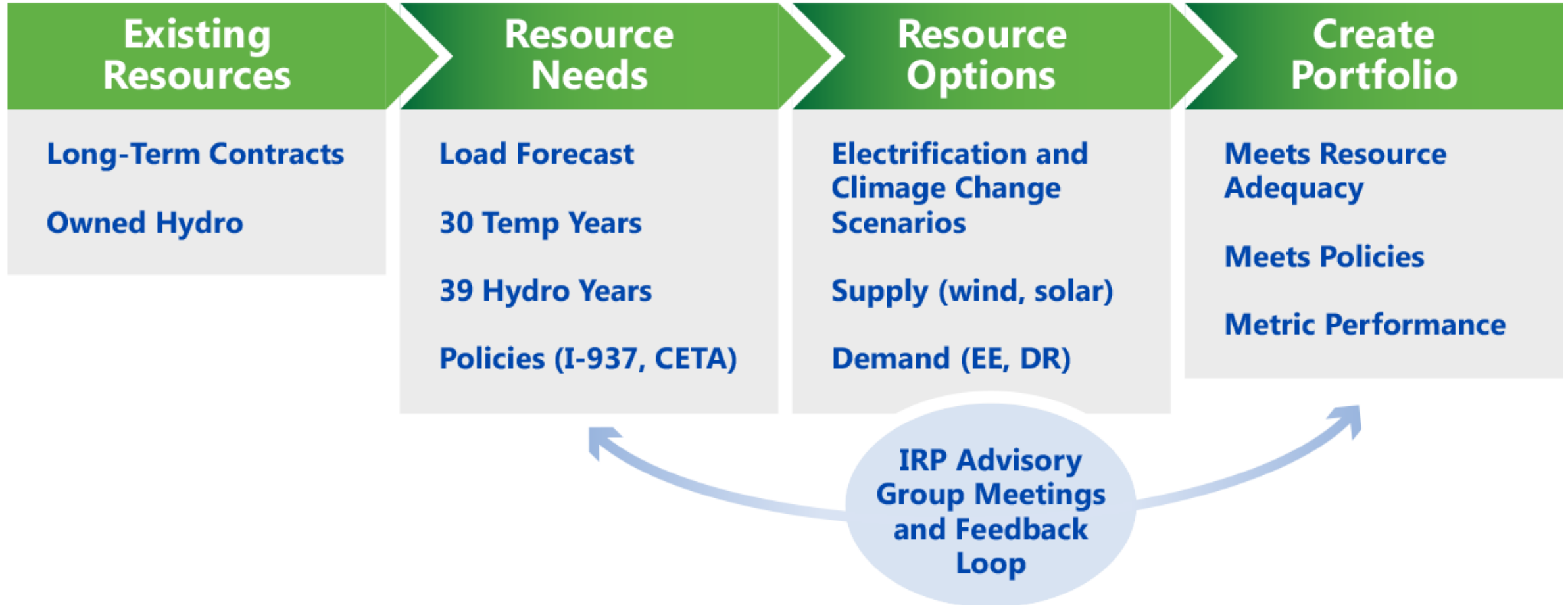
- Biennial plan describing a path to meet the SCL service area's electric power needs for next 20 years
- An opportunity for customers and stakeholders to share their vision for our future power supply mix
- Reviewed and updated every two years
- Must be approved by Seattle City Council
- Not intended to represent specific resource actions to be taken



Why create an Integrated Resource Plan?

1. Vital feedback loop and communication plan between customers, stakeholders, governing bodies and City Light
 - ✓ Need to meet projected load and clean energy policies
2. Revised Code of Washington (RCW) 19.280
 - ✓ Introduced formal Integrated Resource Planning process in 2006 for all utilities in the state with over 25,000 customers
 - ✓ Recognizes the significance of considering opportunities for customers to reduce power use and new power generation as sources to meet electric demand
 - ✓ Recognizes importance of sharing utility plans with customers and stakeholders because decisions could be long-term

2022 IRP Process



2022 IRP Advisory Panel

- Steve Gelb, Emerald Cities Collaborative
- Paul Munz, Bonneville Power Administration (BPA)
- Jeremy Park, P.E. University of Washington
- Yuri Rodrigues, Seattle Pacific University
- Mike Ruby, Ph.D., P.E., Envirometrics, Inc.
- Joni Bosh, NW Energy Coalition
- Amy Wheelless, NW Energy Coalition
- John Fazio, NW Power & Conservation Council
- Elizabeth Osborne, WA Department of Commerce
- Kelly Hall, Climate Solutions
- Joanne Ho, Consultant

Nine meetings from March 2021 to May 2022

**THANK
YOU TO OUR
PANEL!**

2022 IRP Existing Resources

2020 POWER MIX



● HYDRO	86%
● WIND	5%
● NUCLEAR**	5%
● UNSPECIFIED*	3%
● BIOGAS	1%
TOTAL	100%

**City Light does not have coal or natural gas resources in its power supply portfolio. It does make market purchases to balance or match its loads and resources. These purchases, along with market purchases made by Bonneville Power Administration (BPA), may incidentally include coal or natural gas resources, which are assigned to the utility. Any emissions associated with unspecified market purchases are offset through our greenhouse gas (GHG) neutrality policy.*

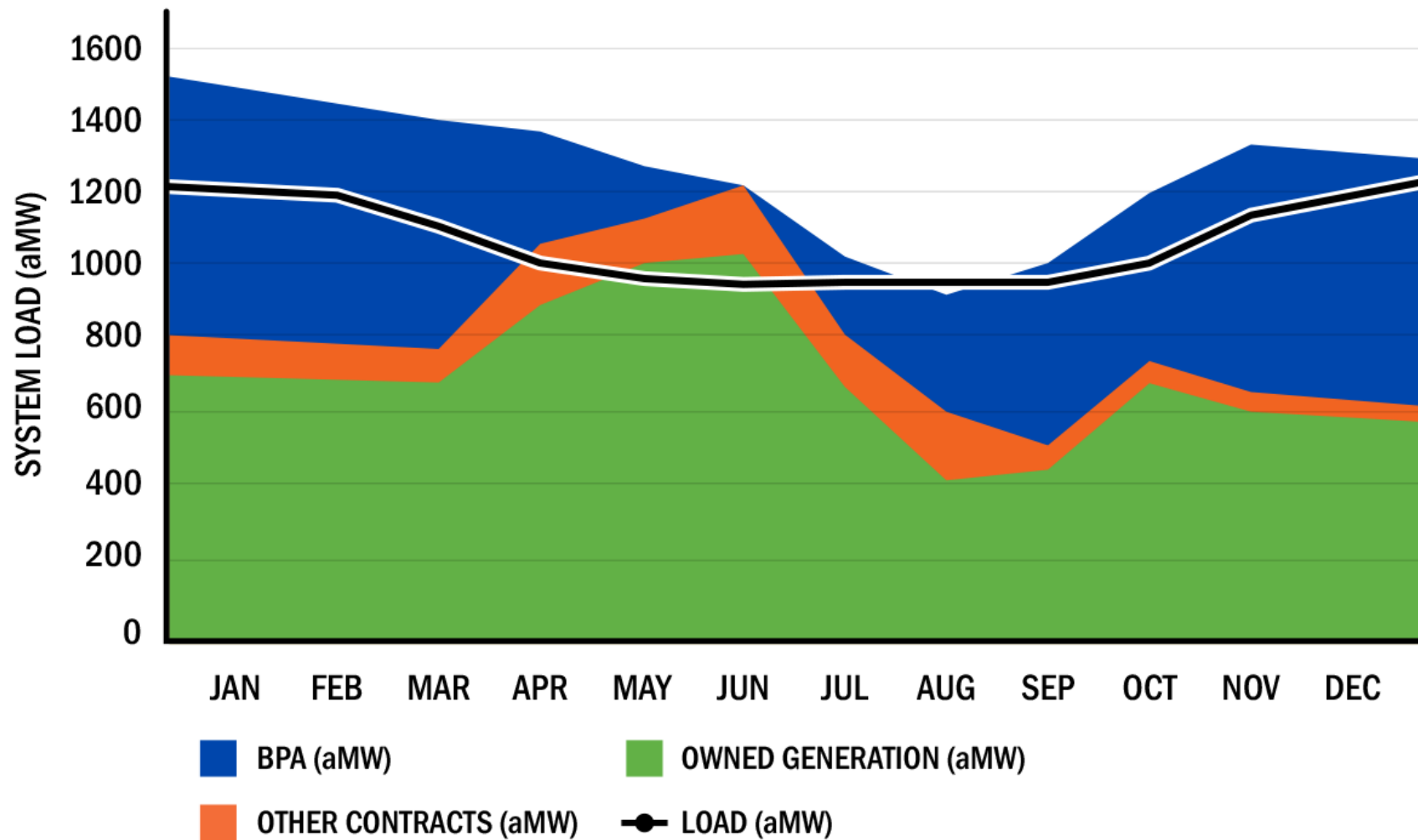
***This fuel represents a portion of the power purchased from BPA.*

ENERGY RESOURCES



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

2022 IRP Existing Resources



2022 IRP Portfolio Resource Needs

Resource Needs

I-937 Energy Independence Act

- Conservation investments driving no load growth and existing I-937 compliance inventory keep compliance costs down

Clean Energy Transformation Act

- City Light close to greenhouse gas-free
- Identified new Resource Adequacy Metric and target

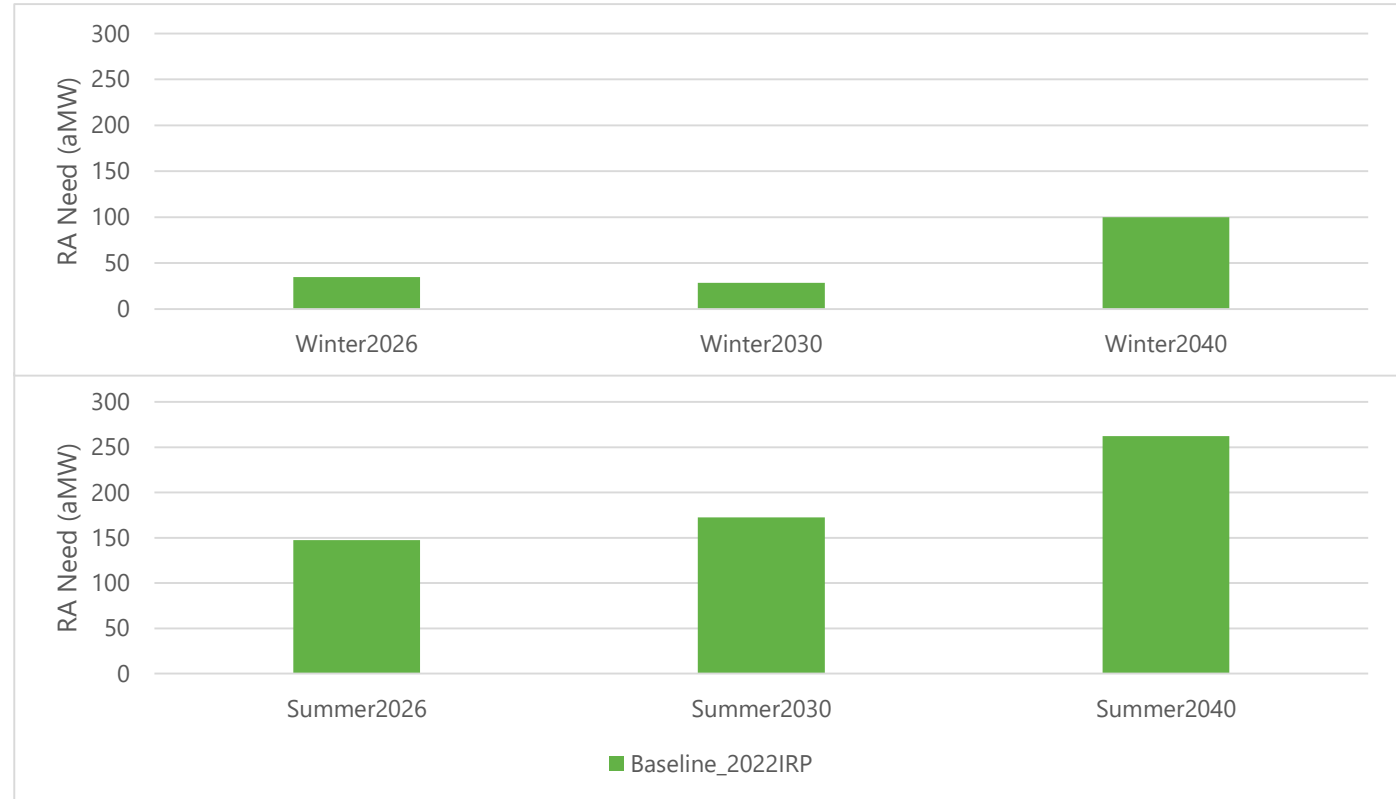
Resource Adequacy

- Long-run summer energy supply risk emerges
- Regional supply and demand changing and summer capacity deficits

2022 IRP Portfolio Needs: Resource Adequacy

Key Conclusions Compared to 2020 IRP...

- Summer needs still a concern
- Winter needs increasing due to developing electrification of buildings and transportation
- Electrification scenario presented additional energy shortfalls and transmission concerns, especially in winter

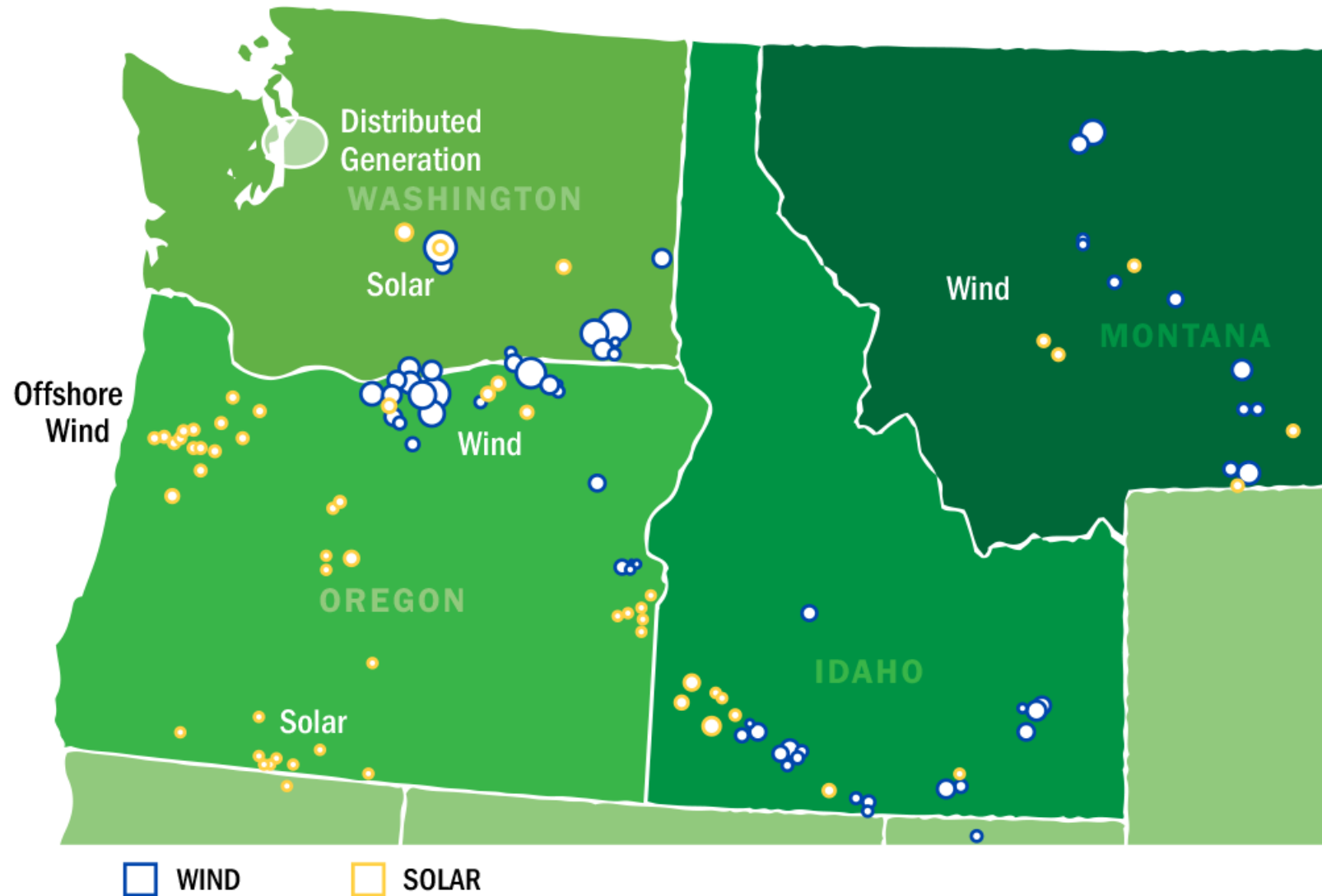


2022 IRP Portfolio Needs: Clean Energy Policies

- I-937 Energy Independence Act
 - Short-term needs likely in 2024 and 2025 due to Covid-19 loads
 - No significant needs until early 2030s
- Clean Energy Transformation Act
 - Eliminate coal-fired electricity in state by 2026
 - 100% greenhouse gas neutral by 2030
 - 100% greenhouse gas free by 2045

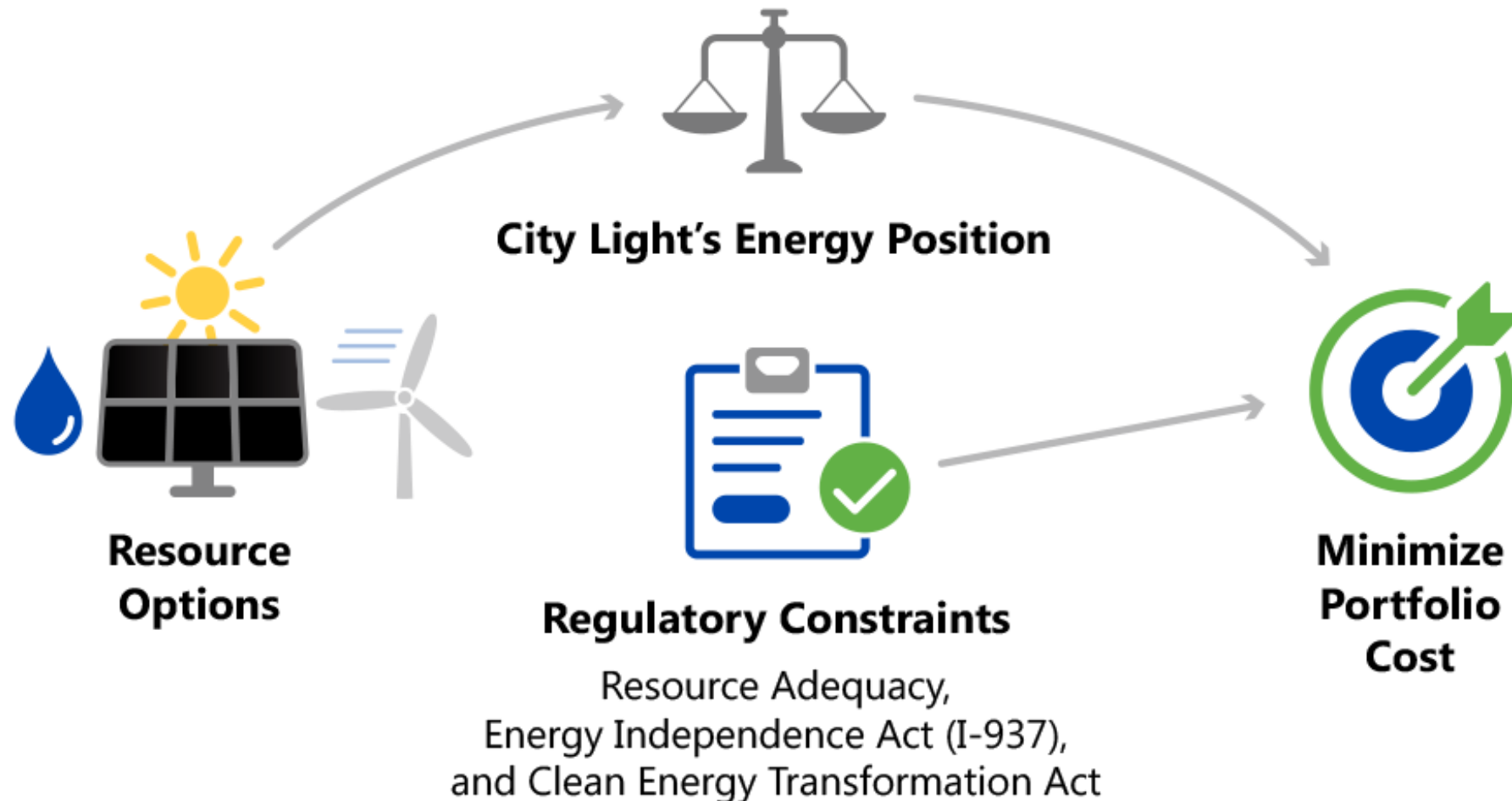


2022 IRP Resource Options Considered












2022 IRP Framework

Goal: Design best mix of resources to meet City Light's needs over next 20 years



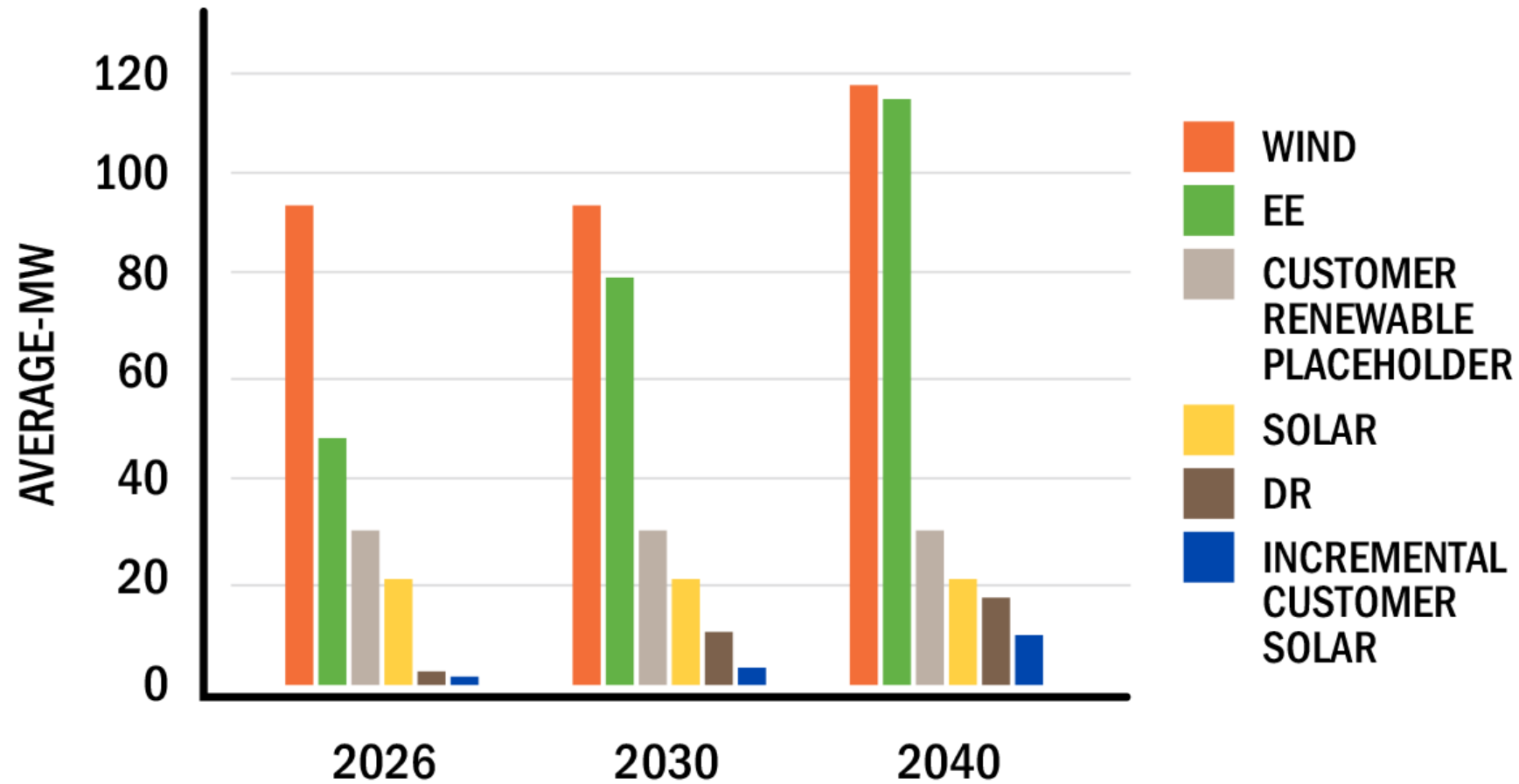
2022 IRP Portfolio Strategies Matrix

 <p>Lowest Cost Portfolio</p>	 <p>Transmission Availability</p>	Resource Adequacy Risk Reduction 
 <p>100% Clean by 2030</p>	 <p>Balanced Resource Portfolio</p>	Maximize Energy Efficiency and Demand Response Programs 
 <p>Higher Market Reliance</p>	 <p>Maximize Customer Owned Resources</p>	Other Strategies 

2022 IRP Create Portfolio

- Best combination of supply and demand resources to meet needs
- Based on:
 - Cost
 - Greenhouse gas emissions
 - Customer program opportunities
 - Transmission risk
 - Climate change preparedness
 - Electrification preparedness

2022 IRP Top Portfolio



*most new 2022 IRP resources are brought in before 2030

2022 IRP Summary: Why do we need more resources?

- Long-term contracts and exchanges gradually expiring by 2026
 - Stateline Wind
 - Columbia Basin Hydro
 - Lucky Peak Exchange
- Clean energy policies forcing coal plant retirements
 - Increases regional resource adequacy concerns
 - Results in less certainty that City Light can buy affordable and reliable energy in markets
- Pace of climate change and electrification
- Increasing customer push for greenhouse gas free portfolio

2022 IRP Conclusions

Key conclusions compared to 2020 IRP Progress Report

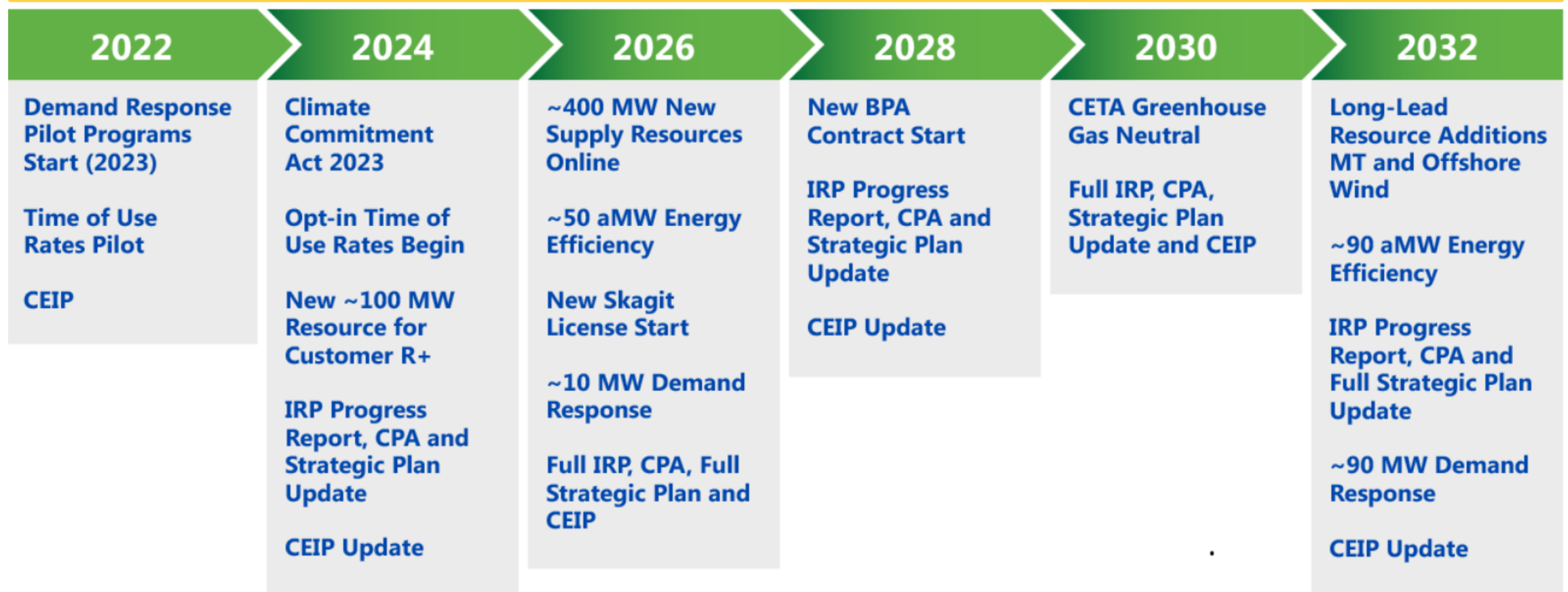
- Summer needs still a concern
- Winter needs are higher due to new load forecast and additional electrification from new codes and buildings, and faster EV growth
- First full IRP calling for new resources in the strategic planning period window
 - 400 MW renewables online by 2026
- Risk Uncertainties
 - Pace of electrification
 - Transmission availability
 - Climate change
 - Intermittent resource reliance as electrification loads increase
 - Development of renewable energy projects (inflation, tariff investigations, supply chain of components, etc.)

2022 IRP Advisory Feedback

- Risk of supply/demand resource development
- Ensure equity outcomes in demand options program design
- Consider development of new energy technologies
- The City of Seattle should transition to electrification strategically

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2022 IRP 10-Year Important Milestones



Q & A

Feel free to reach out to us at
SCL.IRP@seattle.gov.



2022 IRP Top Portfolio

NEW RESOURCE ADDITIONS BY TIME PERIOD	2022–2031	2032–2041	TOTAL
Solar (MW)	175	0	175
Wind (MW)	225	50	275
Energy Efficiency (aMW)	85	31	116
Customer Solar Programs (MW)	24	28	52
Summer Demand Response (MW)	47	31	78
Winter Demand Response (MW)	79	43	122

*new resources in the 2022 IRP

THANK YOU



Seattle City Light