2020 IRP PROGRESS REPORT

External Stakeholder Meeting

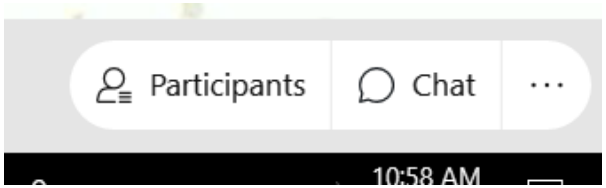
City Light Integrated Resource Plan Team | September 25, 2020

AGENDA

1. Introductions
2. 2020 IRP Progress Report – Goals
3. IRP and Resource Decisions
4. Resource Needs
   a. Resource Adequacy
   b. I-937
   c. Clean Energy Transformation Act
5. Q&A and Next Steps

MEETING SUCCESS TIPS

- Please mute yourself when you are not speaking
- Use the chat to ask questions or raise your hand in the participant area where your name is listed



- We will also take periodic breaks for questions and discussion
- We will be recording these meeting to make it available if you are not able to participate

2020 IRP PROGRESS REPORT

1. Goals: Develop framework to look at resource needs and utility resource choices
2. Why: Resource choices are changing, and CETA provisions with new clean energy policies, timelines, resource adequacy specificity-- all make decision-making more complex
3. Schedules: Work began in 2018 towards new framework which is available for use working towards 2022 IRP and the preparation of the first 10-year Clean Energy Action Plan
4. Delay: COVID impacts lead to Update delays and decision to complete a more thorough analysis for the 2022 IRP with the resumption of public engagement

RESOURCE DECISIONS AND OPERATIONS
MOST IMPORTANT FACTORS TODAY

Operations time horizon		Resource Planning/ Acquisition time horizon (Demand and Supply resources)
Reliability (Reserves, Energy Position)		Resource Adequacy (CETA requirement)
Hydro License / Operating Constraints		Clean Energy Transformation Act (CETA)
Transmission & Wholesale Markets		Seattle's GHG Neutral
Risk (Money)		Energy Independence Act

Recent changes adding to complexity

CLEAN ENERGY TRANSFORMATION ACT- WA

Provision (minimum standard)	By when
Submit Clean Energy Implementation Plan	Every 4 years starting Jan 1, 2022
No Coal delivered to load	after 2025
100% GHG Neutral, 80% GHG Free	Measured in 4-year compliance periods 2030-2033, 2034-2037, 2038-2041, and 2042-2044
100% GHG Free	2045
Use Social Cost of Greenhouse Gases	At a minimum, for resources decisions for resources and contracts that operate 2030 and beyond

RULE MAKING ONGOING

Long-term Planning Timeline

New Needs & Planning Complexities

Regulatory Milestones

I-937 15% renewable energy standard begins 2020

CETA 100% GHG Neutral begins 2030

2022 IRP/ 10-year Clean Energy Action Plan

4-Year Compliance Reports begin

end 2021 CPA and Clean Energy Implementation Plans begin

Timeline

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035

Stateline wind RECS 2026

South Fork Tolt License 2029

King County Westpoint 2033

License and Contract end dates

Stateline wind 2021

Existing 20-yr BPA Contract term expires 2028

Columbia Basin Hydro, last in 2026

Columbia Ridge 2033

Skagit License 2025

most REC contracts end 2026-2031

Regulatory Milestones

4-Year Compliance Reports continue

CETA 100% GHG Free begins 2045

Timeline continued

2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	Post-2045

License and Contract end dates

Lucky Peak 2038

Boundary license 2055

Priest Rapids 2052

High Ross treaty 2066

Legend

black and blue text are hydro resources

blue text are owned projects or contracts that assume continued City Light use

green text are I-937 resources

larger text are significant resources

2020 IRP RESOURCE NEEDS

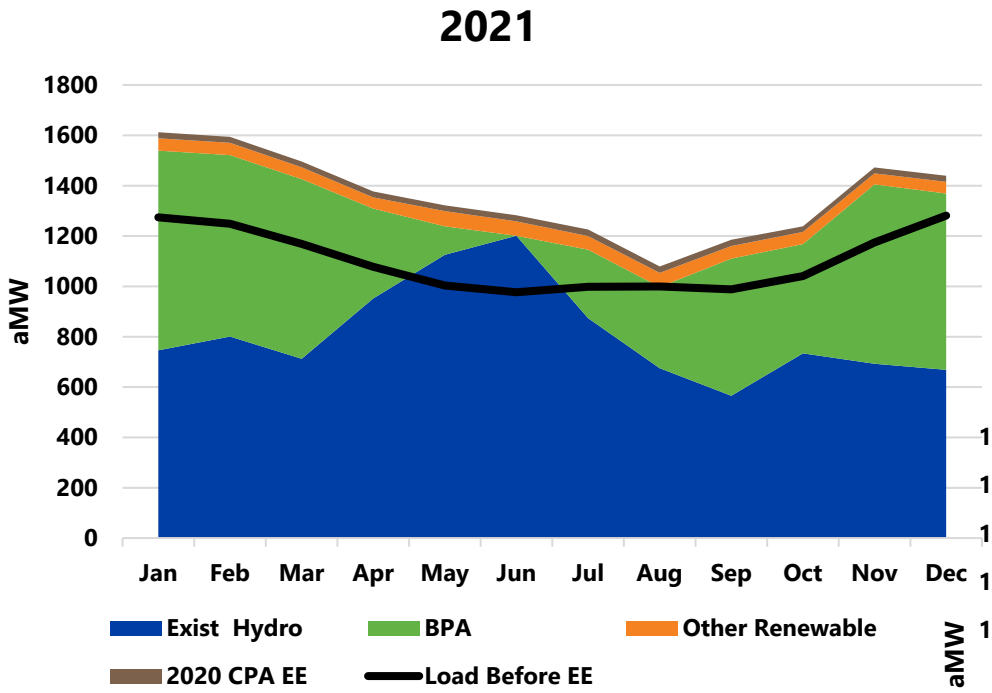
RESOURCE ADEQUACY
WHY IS IT IMPORTANT

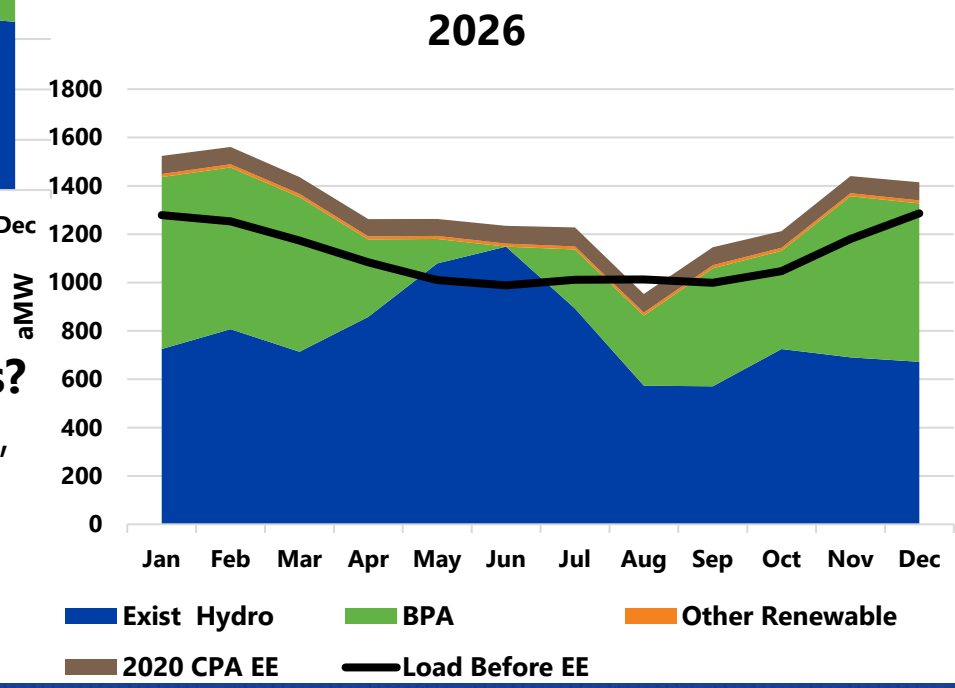
- We must ensure that our customers have sufficient power to meet their demand at an acceptable cost and risk level
- Hydro must first meet flood, fishery and recreation requirements
- Coal plant retirements are changing the regional resource mix and demand patterns are changing
- NW Power & Conservation Council says we could have an adequacy problem in Nov – Feb and July – August (2024)
- Too much or too little resource can be costly to customers

https://www.nwcouncil.org/reports/pacific-northwest-power-supply-adequacy-assessment-2024

ENERGY LOAD RESOURCE BALANCE

EXPECTED OF ALL SIMULATIONS, NO NEW RESOURCES



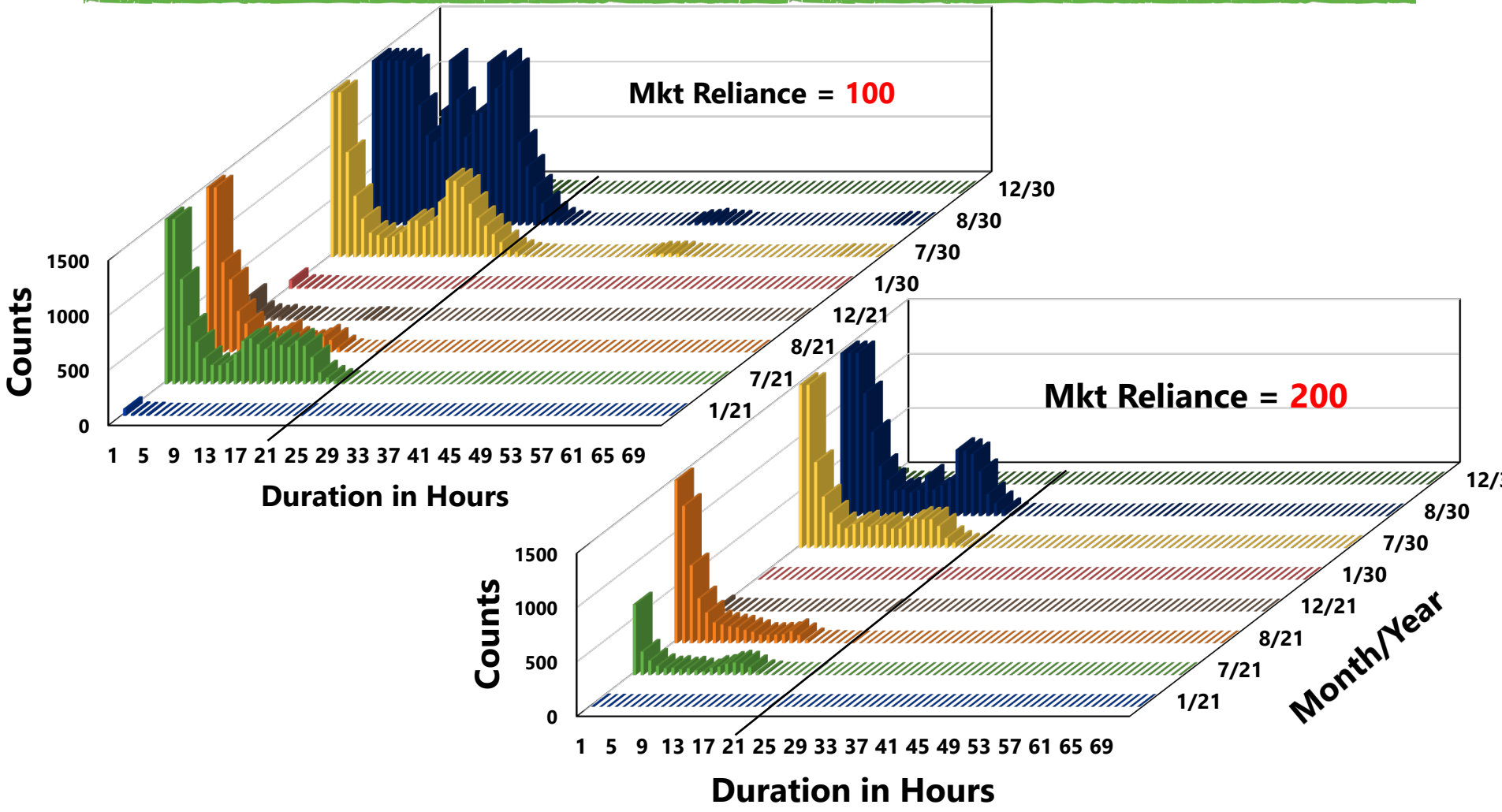


What's different between the two pictures?

- Expiring contracts (Wind, Col. Basin Hydro, Lucky Peak Exchange)
- BPA block reduced as energy efficiency increases
- August deficit increases over time

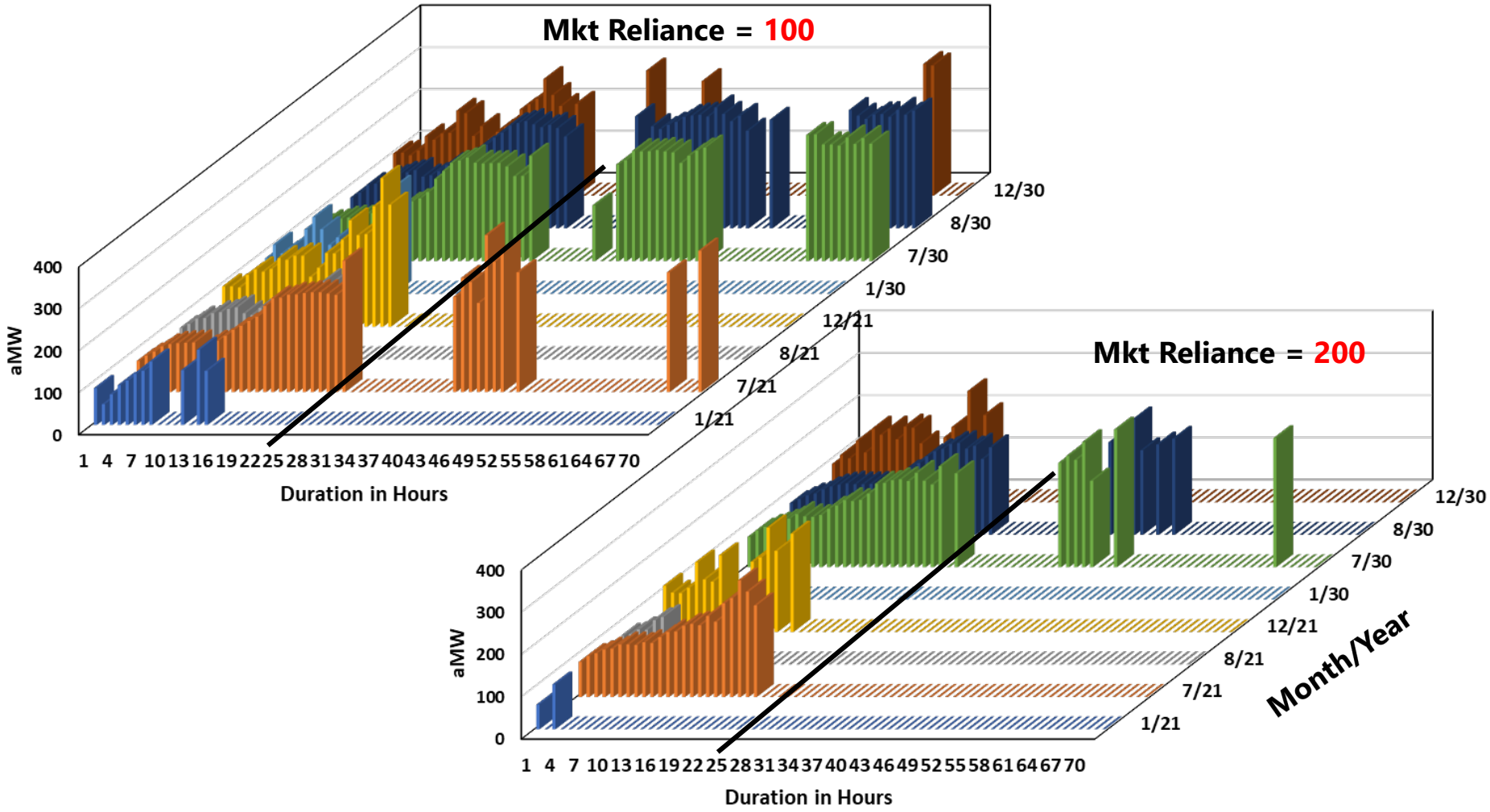
FREQUENCY AND DURATION OF BAD EVENTS

IMPACT OF ADDING 100 MW VS 200 MW MARKET PURCHASES



MEAN ENERGY SHORTFALLS BY DURATION

IMPACT OF ADDING 100 MW VS 200 MW MARKET PURCHASES

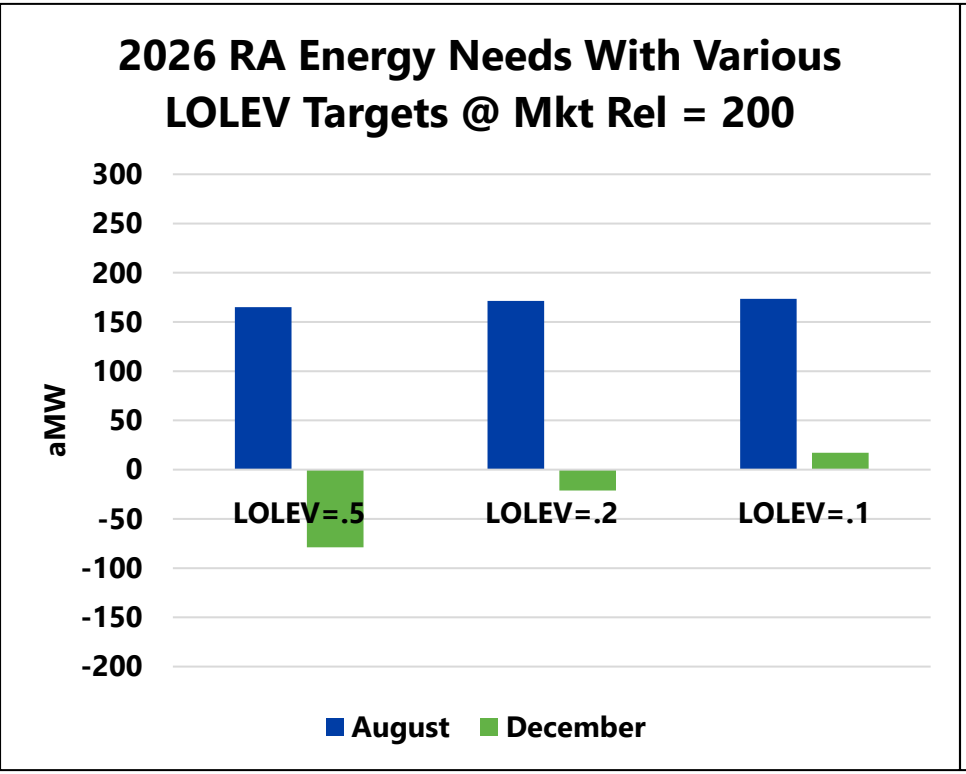


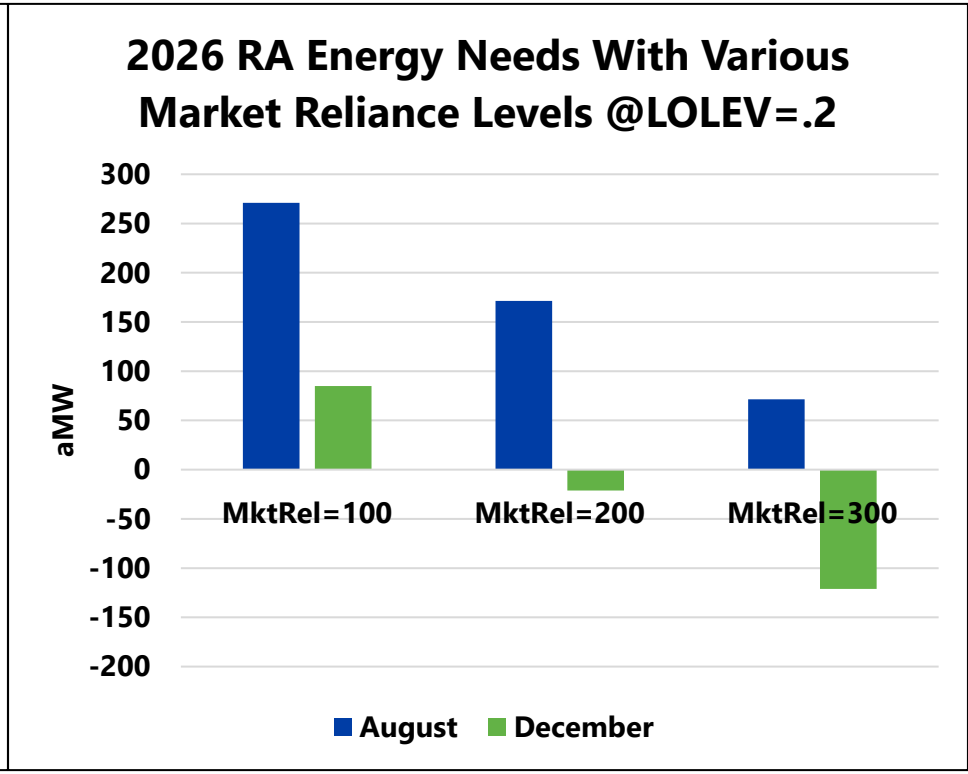
WHY LOLEV (LOSS OF LOAD EVENTS)
CHOOSING THE RELIABILITY METRIC

LOLEV measures the frequency of bad events in the study

- Recognizes the benefits of energy limited storage and intermittent resources
- An Event is counted only if it exceeds City Light's short-term hydro storage flexibility
- LOLEV metric target is one event every five years for our focus months: January, July, August, December

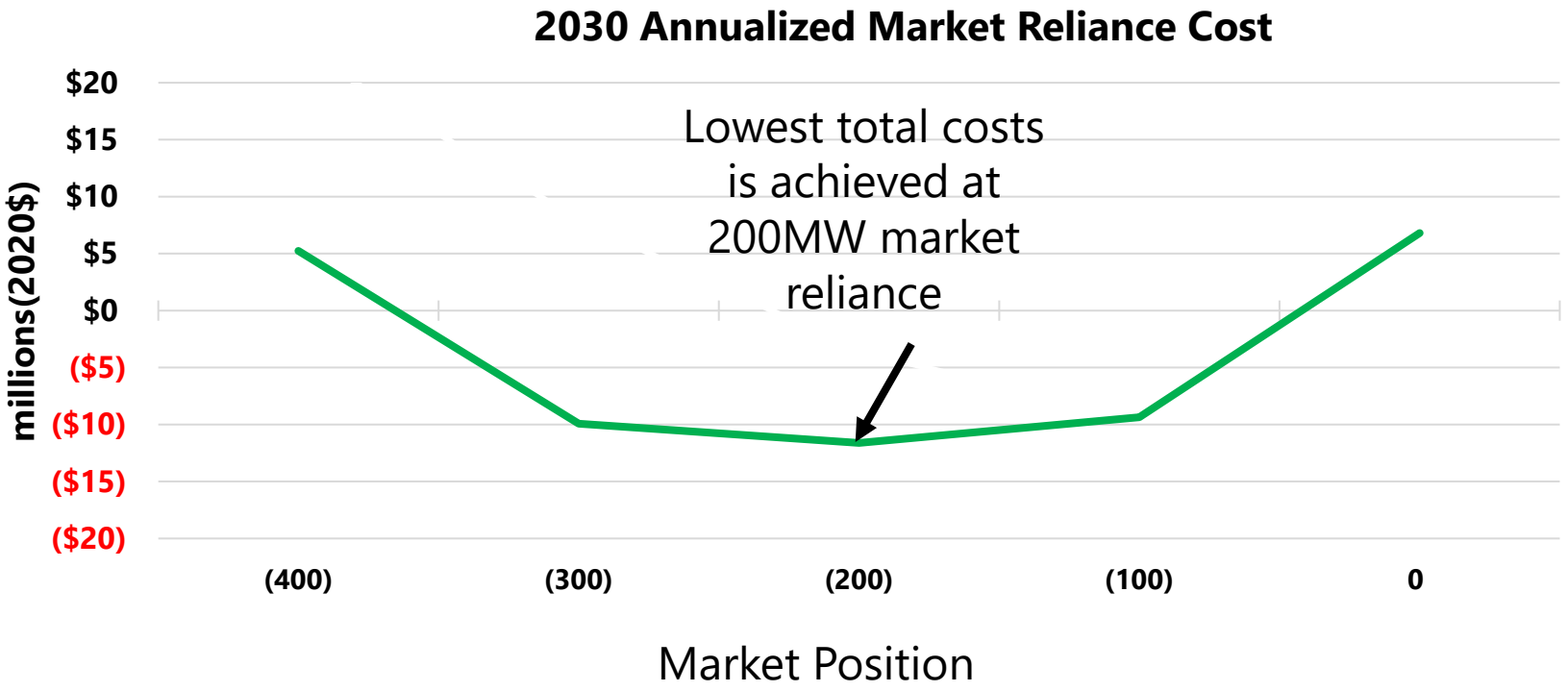
ENERGY RESOURCE ADEQUACY NEEDS
SENSITIVITY TO LOLEV TARGET AND MARKET RELIANCE





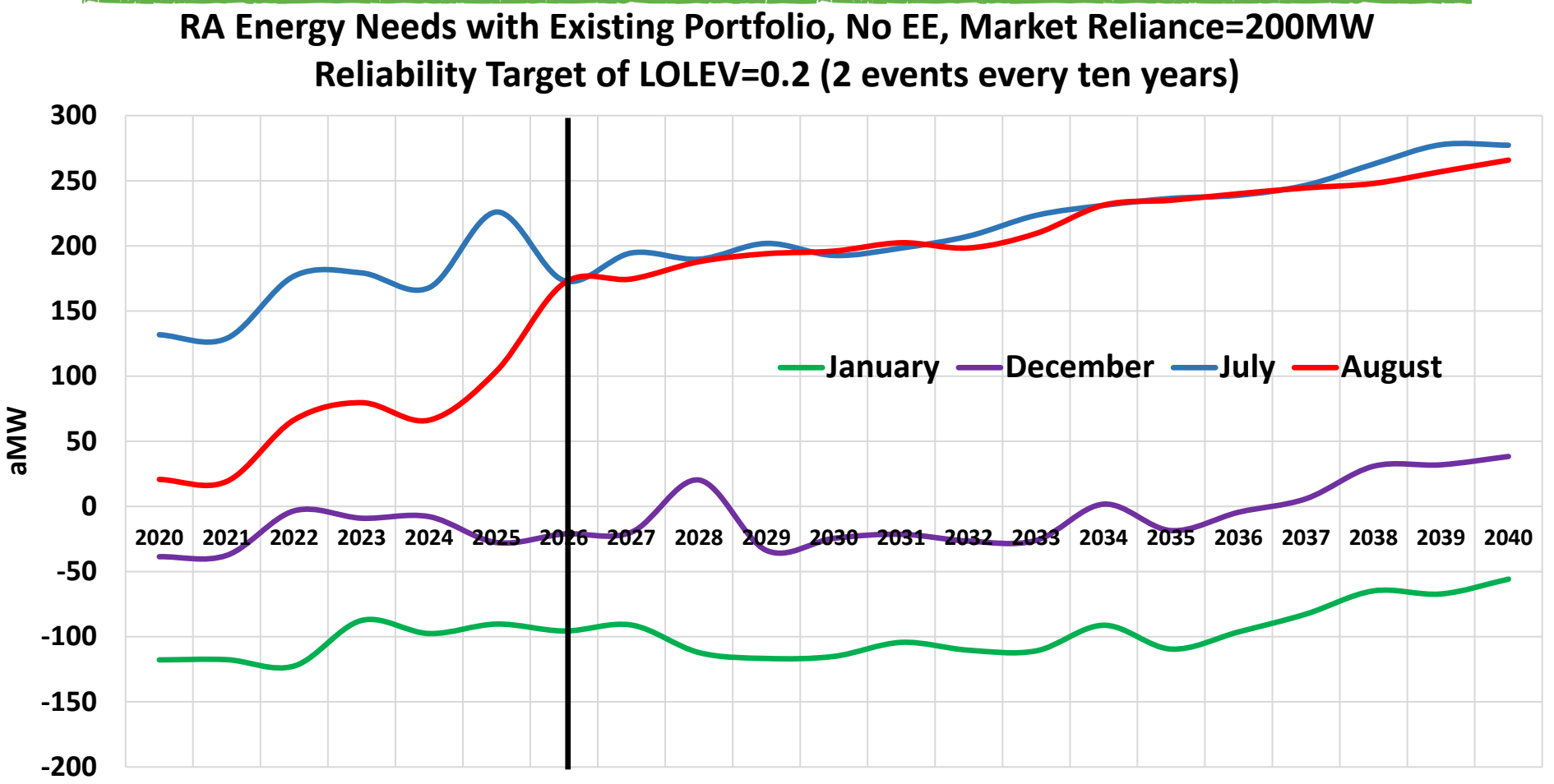
Sensitivity results are consistent throughout the 20-year planning period

TRADEOFFS BETWEEN COST OF LONG-TERM ACQUISITION VERSUS MARKET RELIANCE RISKS



Market Reliance Cost = Incremental Portfolio Costs + Costs of Market Reliance Risk (average 10% worst purchase position)

2020 IRP RESOURCE ADEQUACY NEED
RECOMMENDATION FOR PORTFOLIO ANALYSIS

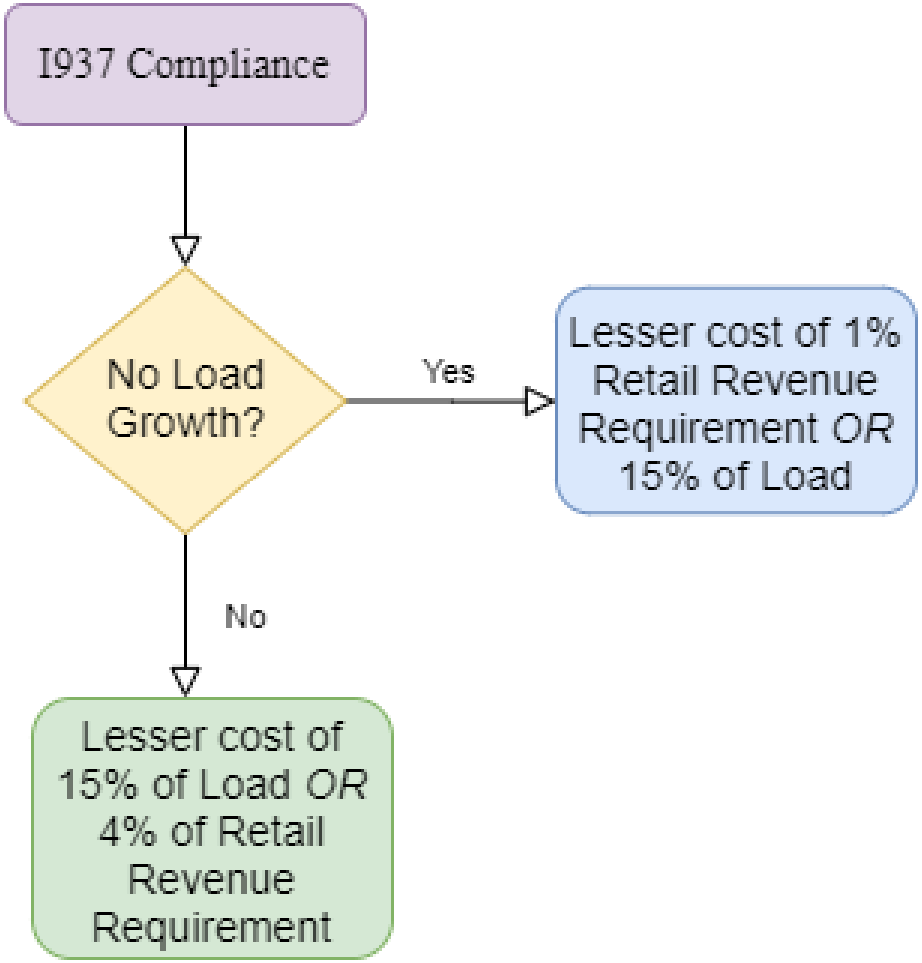


I-937 ENERGY INDEPENDENCE ACT
BRIEF INTRODUCTION

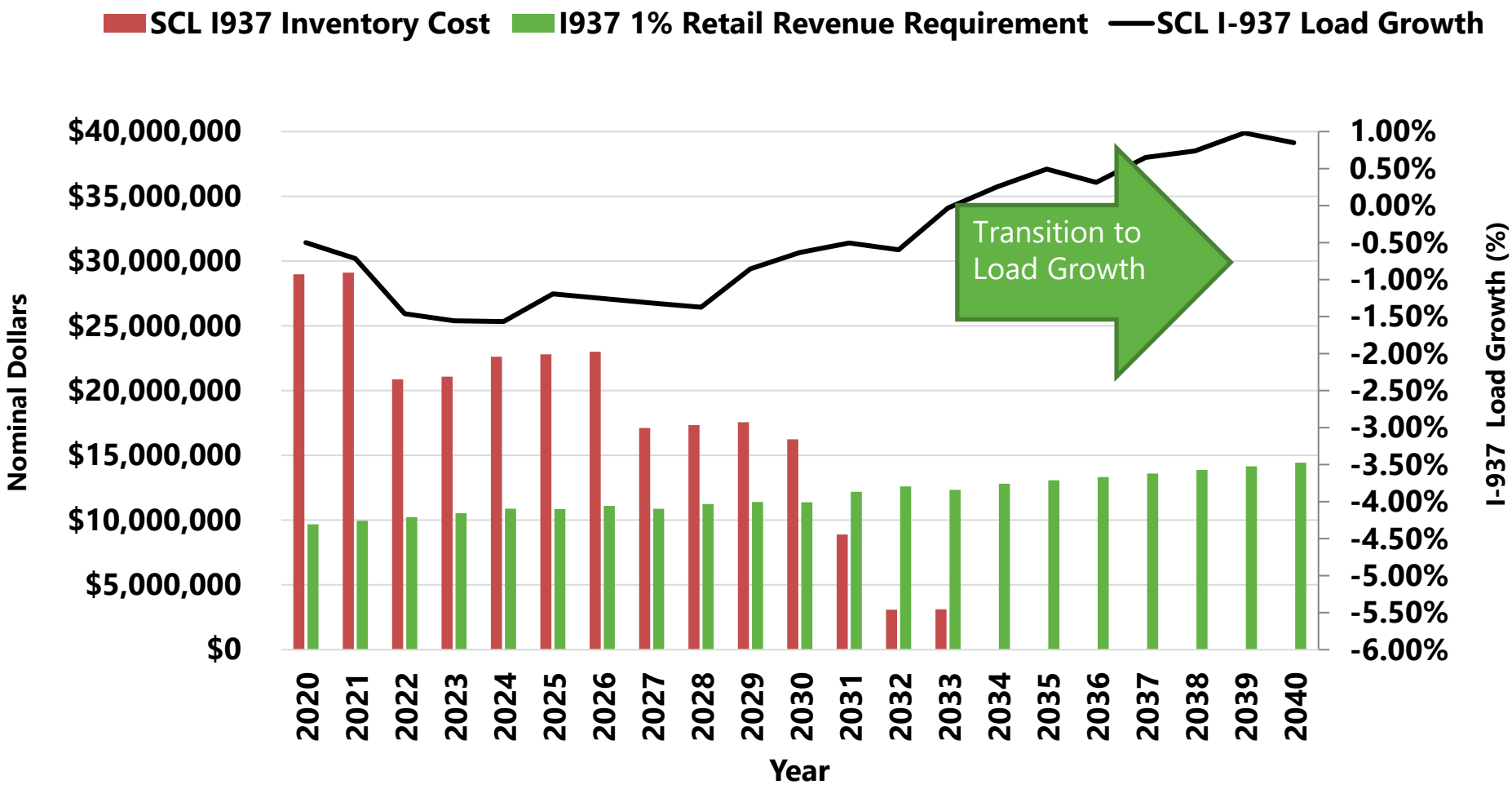
- In 2006, Washington voters approved Initiative 937
- Requires major utilities to source power from renewable energy sources and invest in all cost-effective energy efficiency
- City Light led the charge with investments in energy efficiency programs in 1977 and wind in 2002

I-937 COMPLIANCE PRINCIPLES

DECISION PROCESS FOR REC INVENTORY MANAGEMENT



I-937 AND DECLINING LOAD
COMPLIANCE FORECAST



CLEAN ENERGY TRANSFORMATION ACT
2030-2044 COMPLIANCE

- Achieve GHG neutral standard starting in 2030
  - Use a combination of renewable and non-emitting resources
  - Use alternative compliance for up to 20% of load
  - 4-year compliance periods (i.e., Jan 1 2030 – Dec 31 2033)
- Alternative compliance options
  - Unbundled renewable energy certificates, including thermal RECs
  - Energy transformation projects
  - Alternative compliance payment

DELIVERED GHG FREE RESOURCES (FORECAST)
EXISTING RESOURCES AND 2020 CPA PATH ONLY

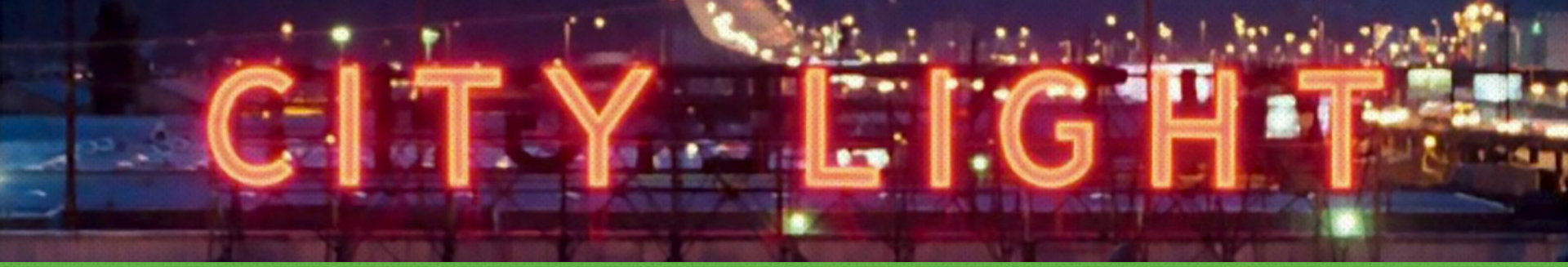
- Annual distribution under 1,170 load and supply conditions

DRAFT- rulemaking ongoing

	Estimated CETA Compliance Level (CETA Resources as a Percent of Load)		
Year	5th Percentile	Median	95th Percentile
2021	93	98	99
2026	92	98	99
2031	92	98	99
2036	91	98	99
2040	91	97	99

QUESTIONS AND ANSWERS / NEXT STEPS

1. Resource choices
2. Action Plan
3. 2022 Work plan



OUR MISSION

Seattle City Light is dedicated to delivering customers affordable, reliable and environmentally responsible electricity services.

OUR VISION

We resolve to provide a positive, fulfilling and engaging experience for our employees. We will expect and reinforce leadership behaviors that contribute to that culture. Our workforce is the foundation upon which we achieve our public service goals and will reflect the diversity of the community we serve.

We strive to improve quality of life by understanding and answering the needs of our customers. We aim to provide more opportunities to those with fewer resources and will protect the well-being and safety of the public.

We aspire to be the nation's greenest utility by fulfilling our mission in an environmentally and socially responsible manner.

OUR VALUES

Safety, Environmental Stewardship, Innovation, Excellence, Customer Care

THE NATION'S GREENEST UTILITY
SINCE 1905
SEATTLE CITY LIGHT

Seattle City Light