



# SEATTLE CITY COUNCIL

## Economic Development, Technology, and City Light Committee

### Agenda

Wednesday, January 11, 2023

9:30 AM

Council Chamber, City Hall  
600 4th Avenue  
Seattle, WA 98104

Sara Nelson, Chair  
Debora Juarez, Vice-Chair  
Lisa Herbold, Member  
Kshama Sawant, Member  
Dan Strauss, Member

Chair Info: 206-684-8809; [Sara.Nelson@seattle.gov](mailto:Sara.Nelson@seattle.gov)

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<http://seattle.gov/cityclerk/accommodations>.



**SEATTLE CITY COUNCIL**  
**Economic Development, Technology, and City**  
**Light Committee**  
**Agenda**  
**January 11, 2023 - 9:30 AM**

**Meeting Location:**

Council Chamber, City Hall, 600 4th Avenue, Seattle, WA 98104

**Committee Website:**

<https://www.seattle.gov/council/committees/economic-development-technology-and-city-light>

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This meeting also constitutes a meeting of the City Council, provided that the meeting shall be conducted as a committee meeting under the Council Rules and Procedures, and Council action shall be limited to committee business.

Members of the public may register for remote or in-person Public Comment to address the Council. Details on how to provide Public Comment are listed below:

Remote Public Comment - Register online to speak during the Public Comment period at the meeting at <http://www.seattle.gov/council/committees/public-comment>. Online registration to speak will begin two hours before the meeting start time, and registration will end at the conclusion of the Public Comment period during the meeting. Speakers must be registered in order to be recognized by the Chair.

In-Person Public Comment - Register to speak on the Public Comment sign-up sheet located inside Council Chambers at least 15 minutes prior to the meeting start time. Registration will end at the conclusion of the Public Comment period during the meeting. Speakers must be registered in order to be recognized by the Chair.

Submit written comments to Councilmember Sara Nelson at [Sara.Nelson@seattle.gov](mailto:Sara.Nelson@seattle.gov)

*Please Note: Times listed are estimated*

**A. Call To Order**

**B. Approval of the Agenda**

**C. Public Comment**

**D. Items of Business**

**1. Western Energy Markets Briefing**

Attachments: [Presentation](#)

**Briefing and Discussion** (40 minutes)

**Presenters:** Debra Smith, General Manager and CEO, Jim Baggs,  
Emeka Anyanwu, Siobhan Doherty, and Josh Walter, Seattle City Light;  
Eric McConaghy, Council Central Staff

**E. Adjournment**



## Legislation Text

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**File #:** Inf 2214, **Version:** 1

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Western Energy Markets Briefing

# Western Energy Markets Briefing

*Seattle City Council*

*Economic Development, Technology & City Light Committee*

*January 11, 2023*



**Seattle City Light**

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# Presentation Flow

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- The Western Interconnection
- Energy Participant Interdependence
- Historical Market Efforts
- Significant WEIM Success
- Current Focus
- Early Collaboration -The Resource Adequacy Element (WRAP)



"The Wise Ones" Steve Smith, 2016

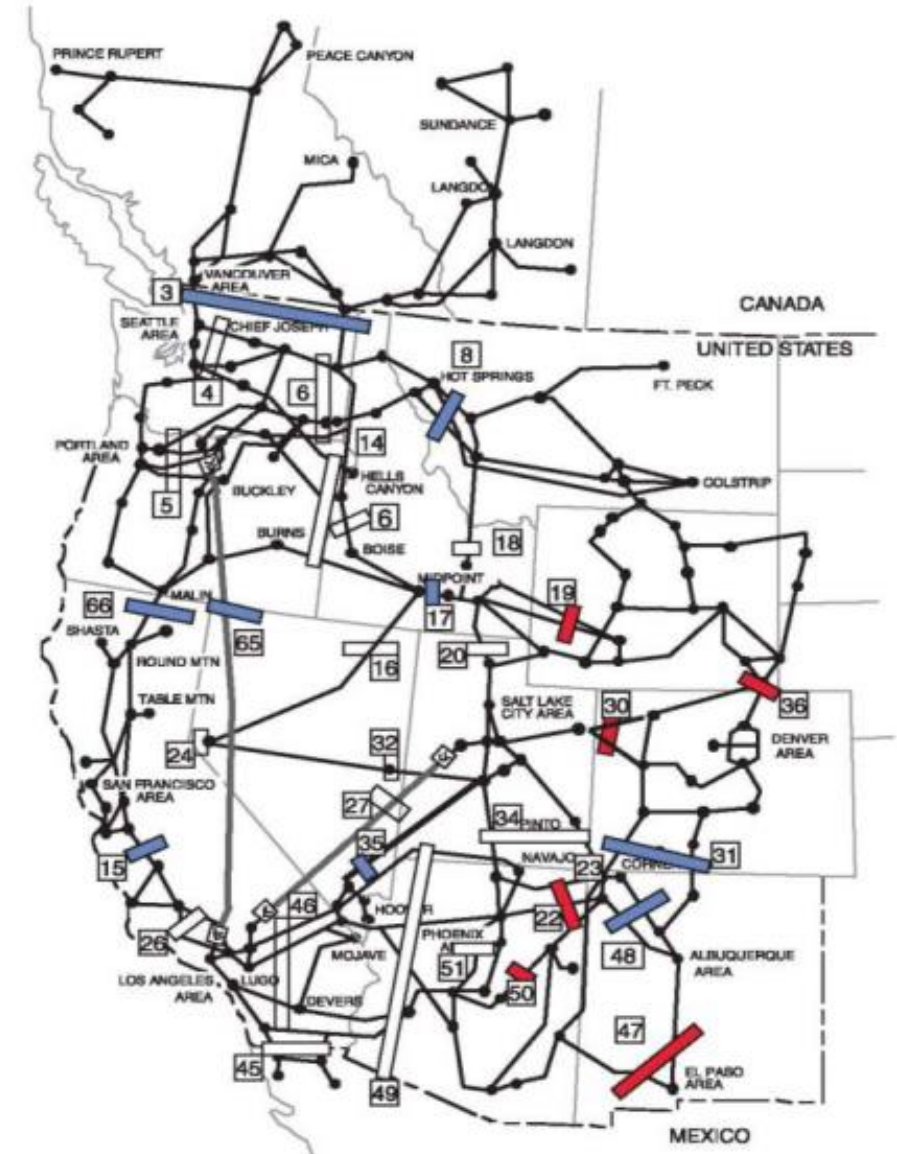
# Western Interconnection Transmission System

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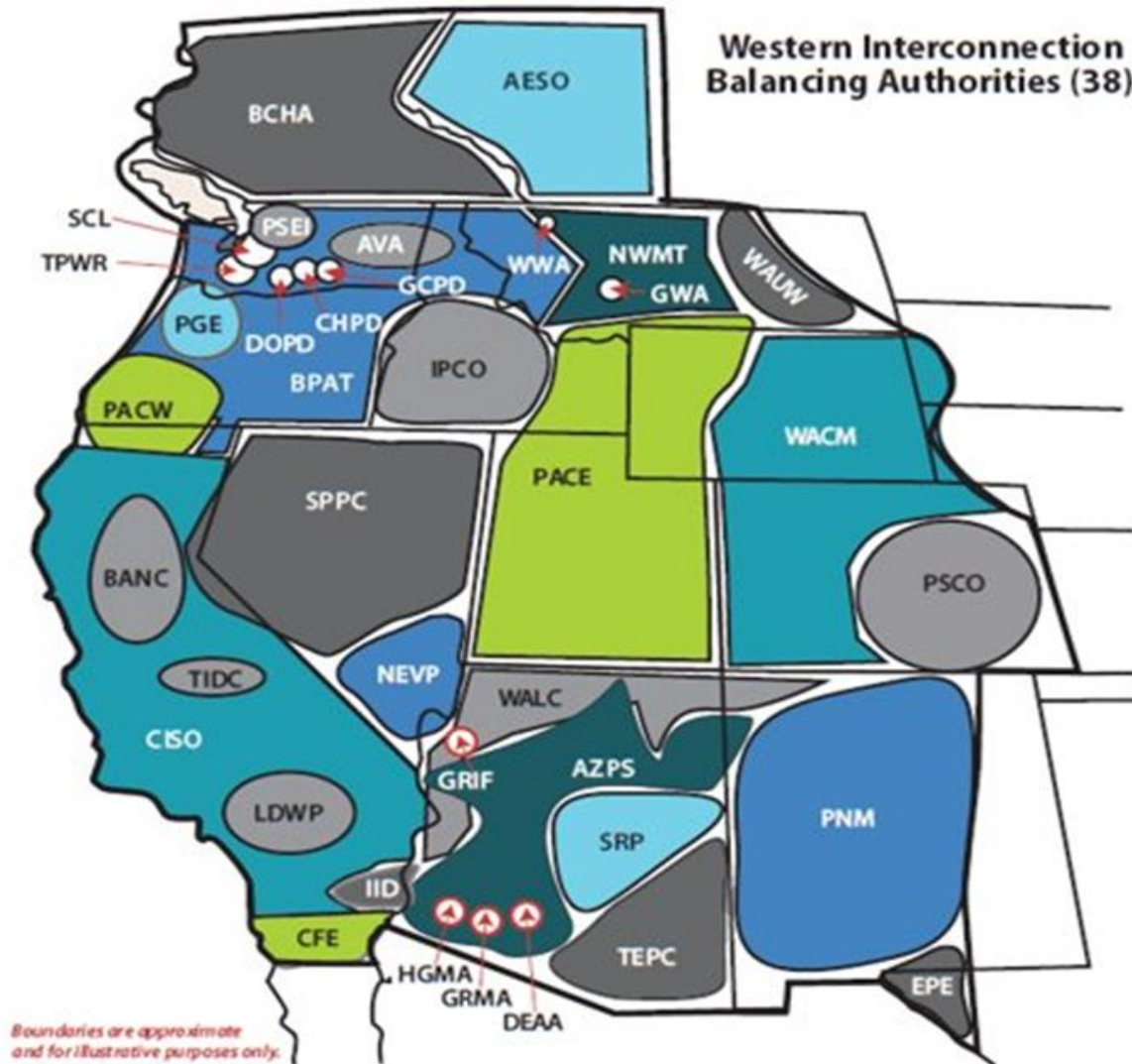
# A Single Western Interconnected Grid

- More than 1.8 Million Square Miles
- All or Part of 14 US States plus British Columbia, Alberta & Northern Baja
- Population > 80 Million
- Large Share of Generation from Hydroelectric and Variable (wind and solar) Resources
- About 136,000 Miles of High Voltage Transmission Lines – Many Long to connect Hydro and Other Remote Generation with Population Centers





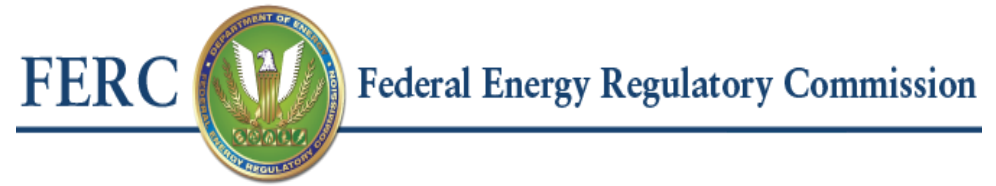
# Western Interconnection Balancing Authorities



# Regulatory Oversight

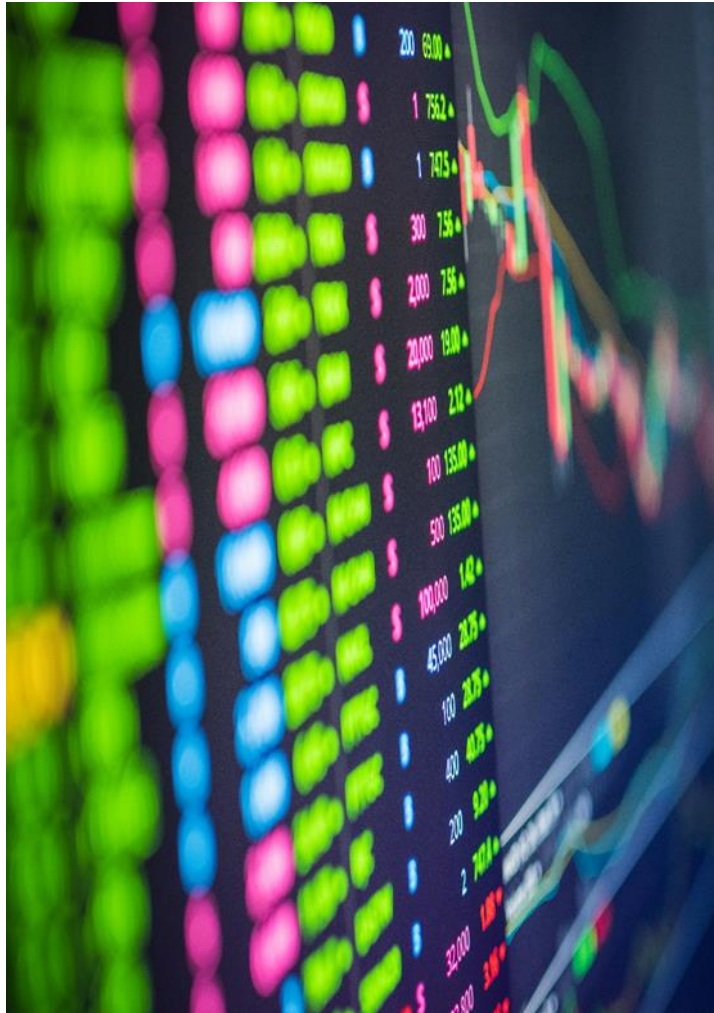
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- Critical Infrastructure Protection Requirements
- Operations & Planning Standards
- Open Access Transmission Tariffs
- Market Behavior Rules
- Regional Transmission Planning
- Required Reliability Coordinator
- Mandatory Enforceable Reliability Standards



# Regional Energy Market Stages of Evolution

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- Bilateral Only (before 2015)
- Western Energy Imbalance Market (WEIM, 2014-Present)
- Day-Ahead Market (Incremental Step)
- Full Regional Transmission Organization/Independent System Operator (RTO/ISO)

# Market Opportunities – Past Regional Attempts

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- Indego
- California ISO and CalPX Formed
- RTO West/Grid West
- WestConnect (SW)
- MC Initiative
- **Energy Imbalance Market**





# Seattle City Light's WEIM Participation

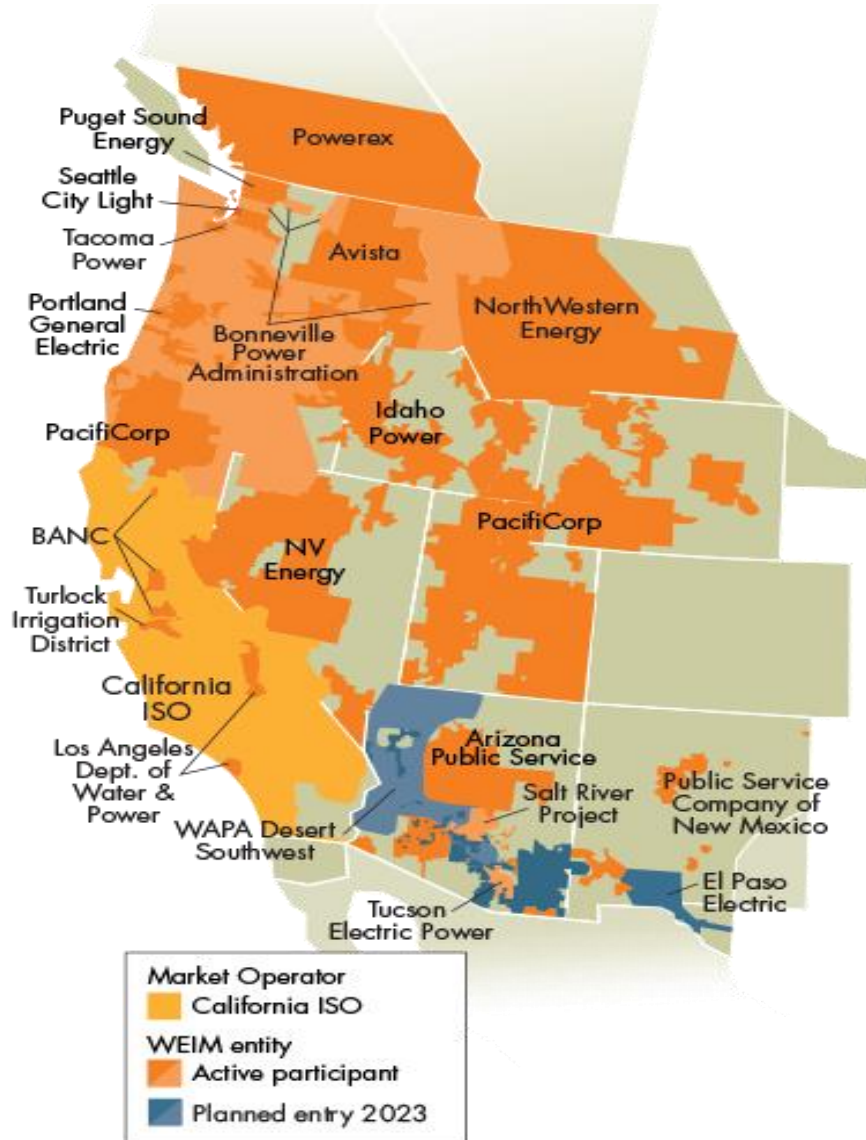
Pre- and Post- Market  
Participation



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# Western Energy Imbalance Market (WEIM)



- California ISO – Started in 2014
- Seattle City Light – Joined April 1, 2020
- Cost Savings to Meet Demand
- Improves Integration of Renewable Energy
- Over 80% of Load in the West Participating

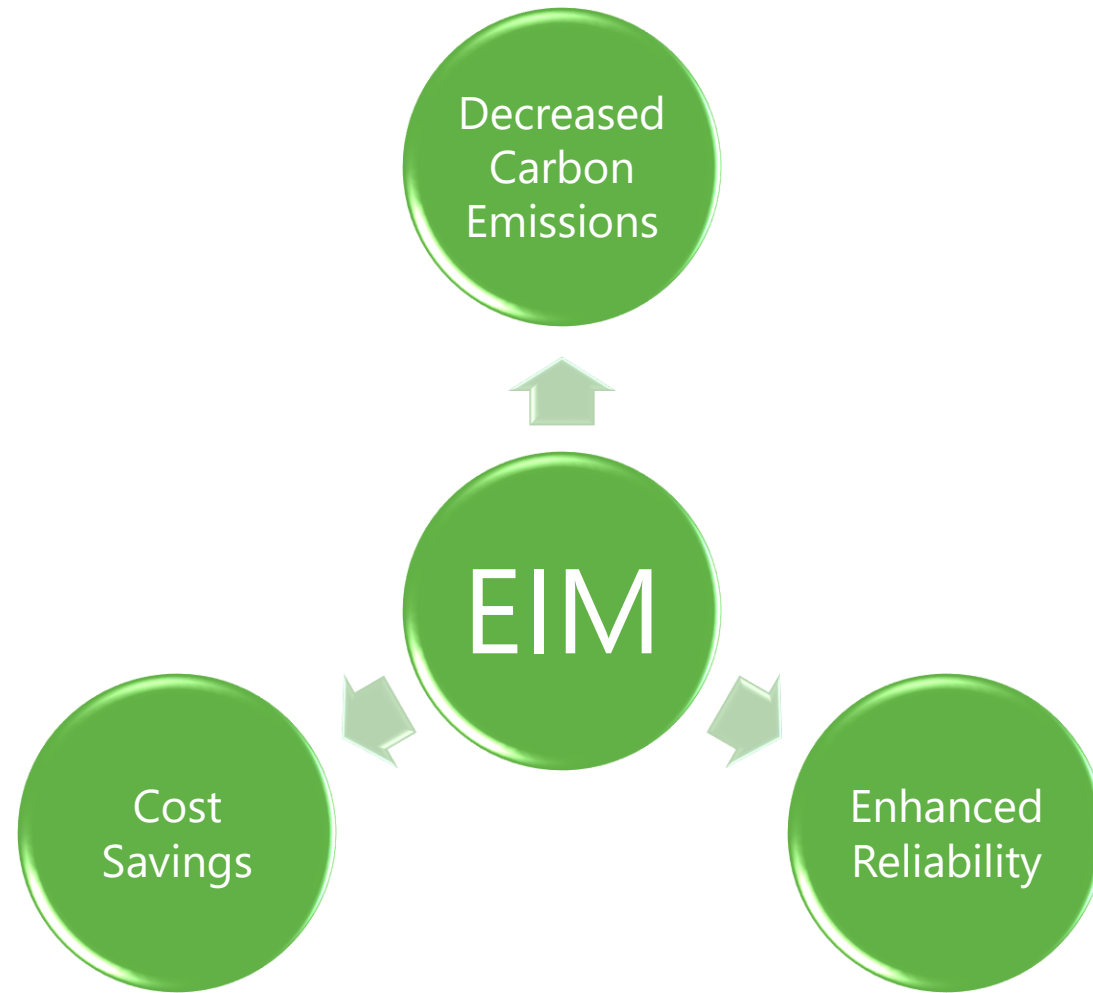
# WEIM Decision – Recapping Our Why?

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# WEIM's Three Primary Benefits

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# Environmental & Economic Benefits Achieved

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- Cost-effective Integration of Renewable Energy
  - Variable Energy Resources (Wind/Solar) Forecasts Incorporated into the Market Solution
- Avoided Carbon Emissions
  - 310,856 metrics tons of CO<sub>2</sub> savings through avoided regional renewable energy curtailments
- Net EIM Transfers for City Light
  - 586,377 MWh Net Exports
  - 529,504 MWh Net Imports
- SCL Customer Financial Benefit - \$30.73M



# Energy Market Opportunities

Current and Emerging



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# The Time is Right

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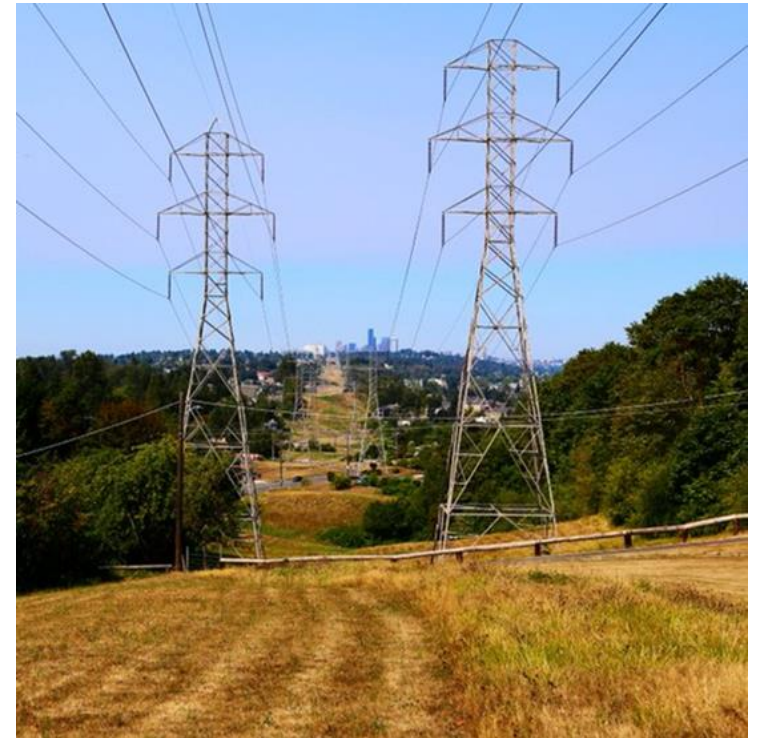
- Mutual Dependence
- Cooperation
- Willing Collaboration
- Individual Interests
- Shared Desirable Outcomes
  - Carbon Reduction
  - Improved Reliability
  - Cost Reduction



# Specific Organized Market Opportunities

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- California Independent System Operator
  - EDAM (Extended Day Ahead Market) Design & Implementation
  - Possible Future ISO Expansion
- Southwest Power Pool Markets Plus
  - Eastern Interconnection Market Operator
  - Designing for Day Ahead Market
  - Possible RTO Expansion into West
- Western Markets Exploratory Group
  - Like Minded Utilities (25)
  - Exploratory – Wide Ranging Possibilities





# Why Now? Current and Emerging Opportunities

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- Opportunity to Leverage Western EIM Success
- Challenges of Climate Change,
  - Drought, Wildfire and Reduced Hydropower
- Increasing Customer Demands
  - More and Cleaner Electricity Development
- Maximize and extend the value of resource diversity
  - Hydropower is an exceptional asset for integrating new renewables
- Regional collaboration is timely
  - Recent momentum suggests opportunity to capture the moment

# Why Now? Current and Emerging Opportunities

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- Renewed Interest in Transmission Expansion & Transmission Efficiencies
- State & Federal Regulatory/Legislative Pressure
  - Carbon Reduction Goals & Transition to Cleaner Resource Mix
- Electrification Increasing Loads
- Continued Expansion of Intermittent Resources
- Pressures on Reliability and Affordability



# Desirable Western Market Attributes

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- A “Well-designed” Market
  - Should Produce Overall Benefits for Entire Market Footprint
  - Should Create Efficiency and Reduce Overall Customer Costs
- Examples of Anticipated Benefits:
  - Reduced Production Costs
  - Investment Cost Savings
  - Potential Balancing Area Consolidation
  - Ability to Realize Benefits of Resource, Peak, and Weather Diversity
  - Improved Reliability



# Desirable Western Market Outcomes

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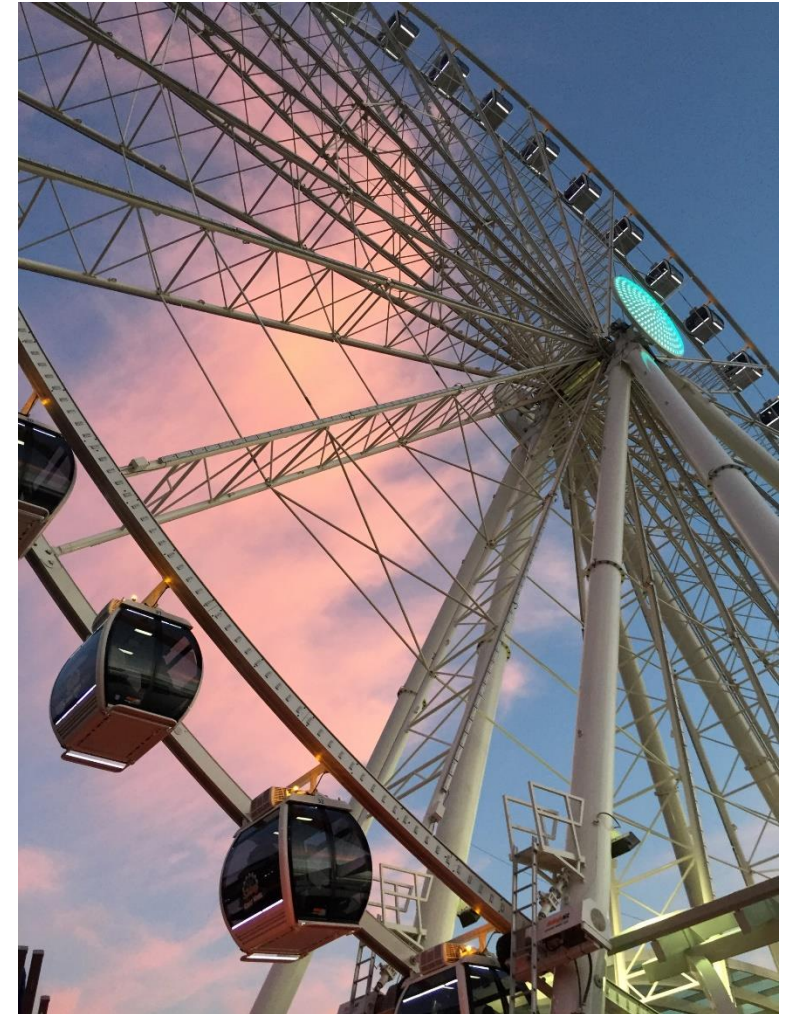
- Market Formation Should Facilitate the Integration of Existing and Additional Renewable Resources
- Must Have Processes that Can Accommodate and Don't Conflict with Individual State Clean Energy Requirements
- Focus Should be on Results for the Market as a Whole, Not Only on Specific Outcomes for Specific Participants
- Well-functioning Markets will Emphasize Resource and Transmission Efficiency and Transparency, and Provide Incentives Based on Availability, Scarcity and Risk



# Seattle City Light Specific Interests

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- Positive Customer Benefits:
  - Enhanced Reliability
  - Reduced Operational/Resource Costs
- Hydro Attributes Not Compromised and Appropriately Valued
- Increased Market Transmission Availability to Allow Increased Access to New Resources
- Renewable Resource Development Facilitated to Decarbonize Regional Mix



# Seattle City Light's Current Western Markets Activities

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- CAISO Extended Day Ahead Market (EDAM)
- Western Markets Exploratory Group (WMEG)
- Southwest Power Pool Markets Plus (SPP Markets +)
- Linkage to:
  - Resource Adequacy (WRAP Program)
  - CETA/CCA Obligations (WA and CA)
- Regulatory Aspects
- Coordination & Communication



# Timeline, Coordination and Communication

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# FIRST LOOK: Moving the West forward on Resource Adequacy

Western Resource Adequacy Program (WRAP)



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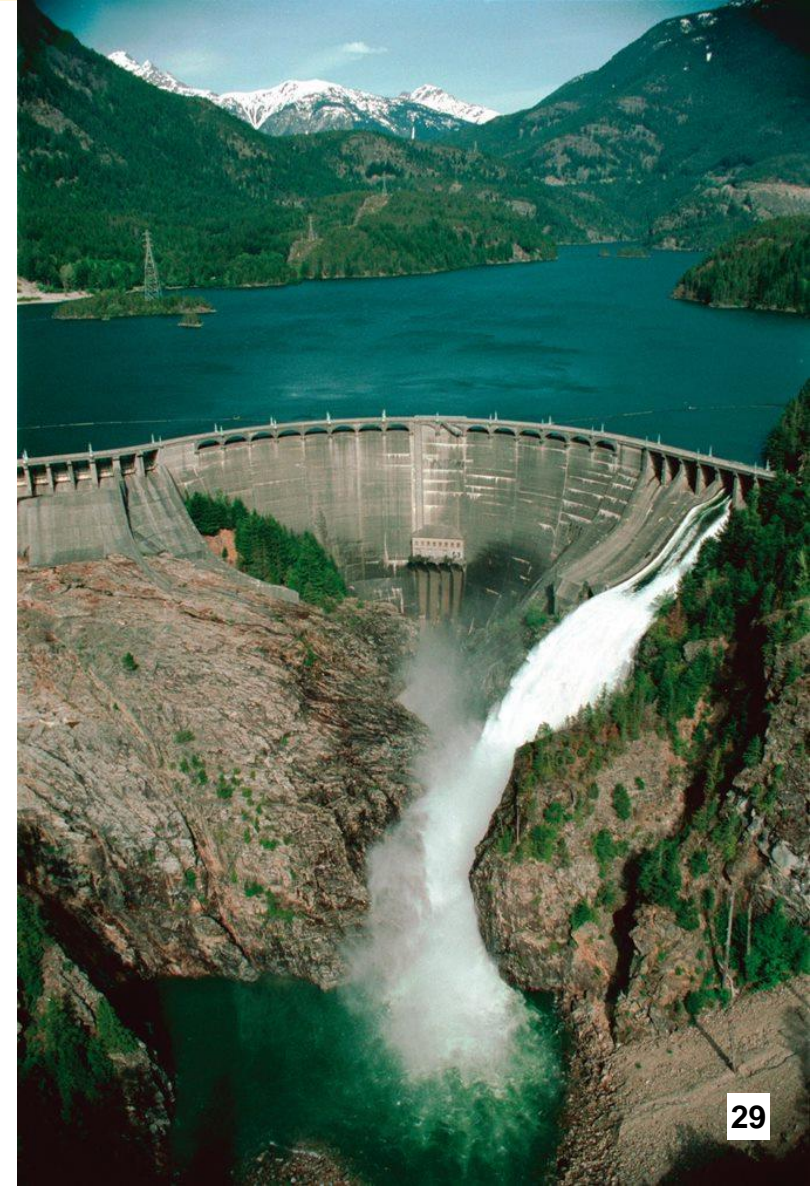




# Why Now? Resource Adequacy & Reliability Challenges

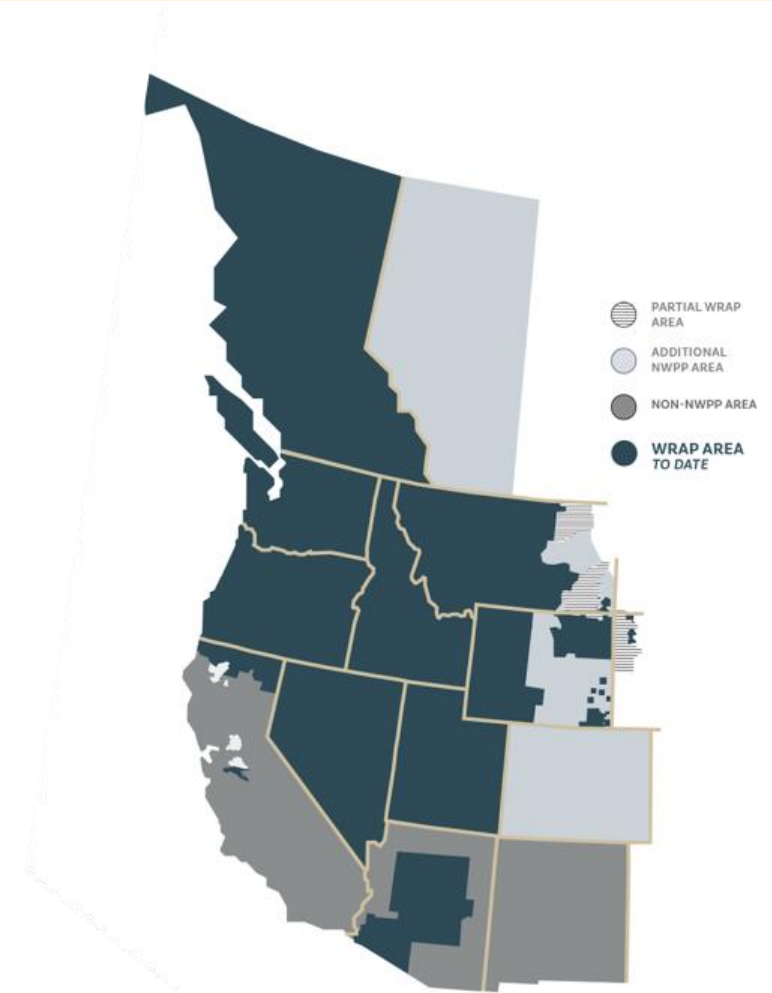
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- Recent studies demonstrate resource shortfall by mid-2020s across western U.S.
- Driven by multiple factors
  - Retirement of fossil generation
  - Increasing intermittent renewables
  - Load growth: Data center & agricultural sectors; acceleration of transportation and building electrification
  - Drought conditions and extreme weather events



# Resource Adequacy

- Reliability Focus – ensuring sufficient resources to serve electricity demand
- Western Resource Adequacy Program (WRAP)
  - Related Parallel Development
  - Successful Regional Collaboration
  - Solid Operational & Governance Model
  - Enhances Reliability
  - Is **NOT** an Organized Market



# WRAP Current Status & Timeline

- City Light plans to request City Council approval this Spring to join WRAP





# Questions?



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