

DRAFT 2010 Integrated Resource Plan

**Seattle City Light Review
Panel**

June 30, 2010



Seattle City Light

**Power Supply &
Environmental Affairs**

Integrated Resource Planning: Objectives and Key Questions

- Objectives:
 - Sufficient Power Supply for Reliability & Low Costs
 - Meeting I-937 and Other Regulatory Requirements
 - Appropriate Mix of Cost and Risk
- The IRP is About Three Key Questions:
 - How Much Conservation and Resources?
 - When?
 - What Kind?

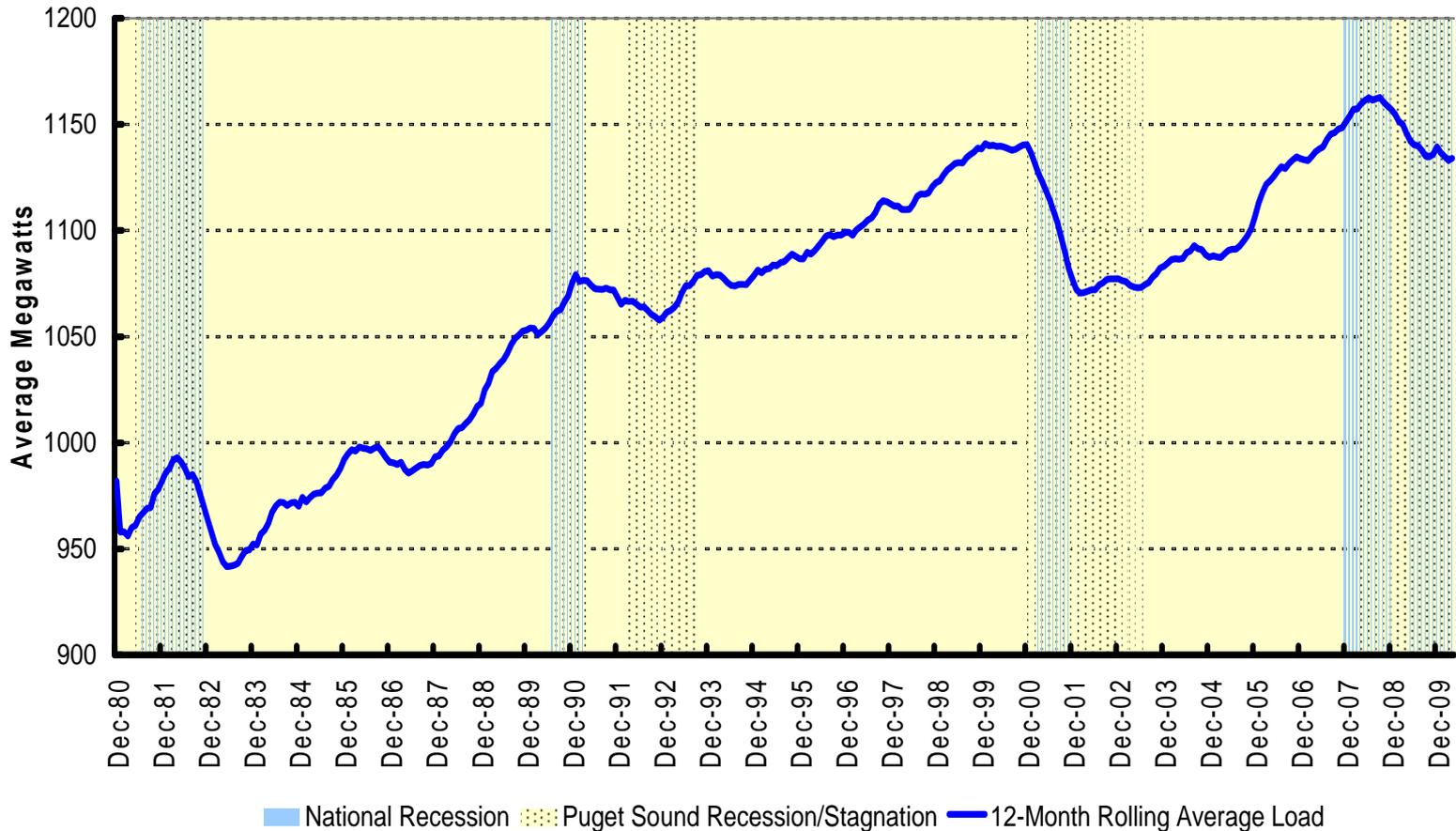
What Do People Care About in the IRP?



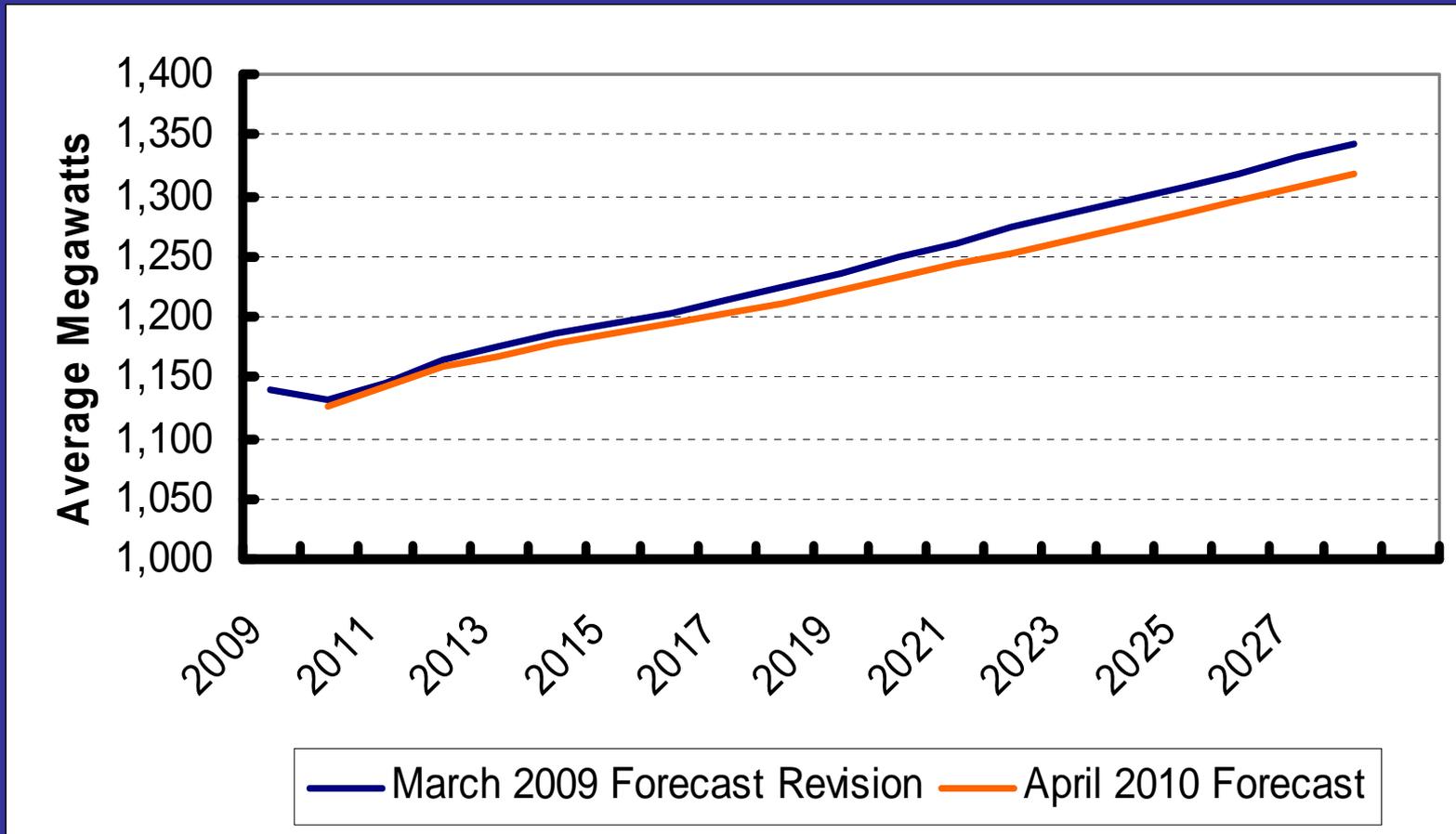
IRP Stakeholder & Public Meetings

Recessions: Seattle Customer Demand Often Lags a Recovery

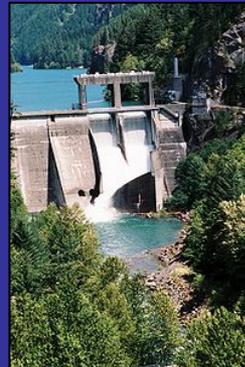
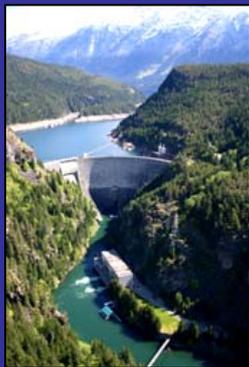
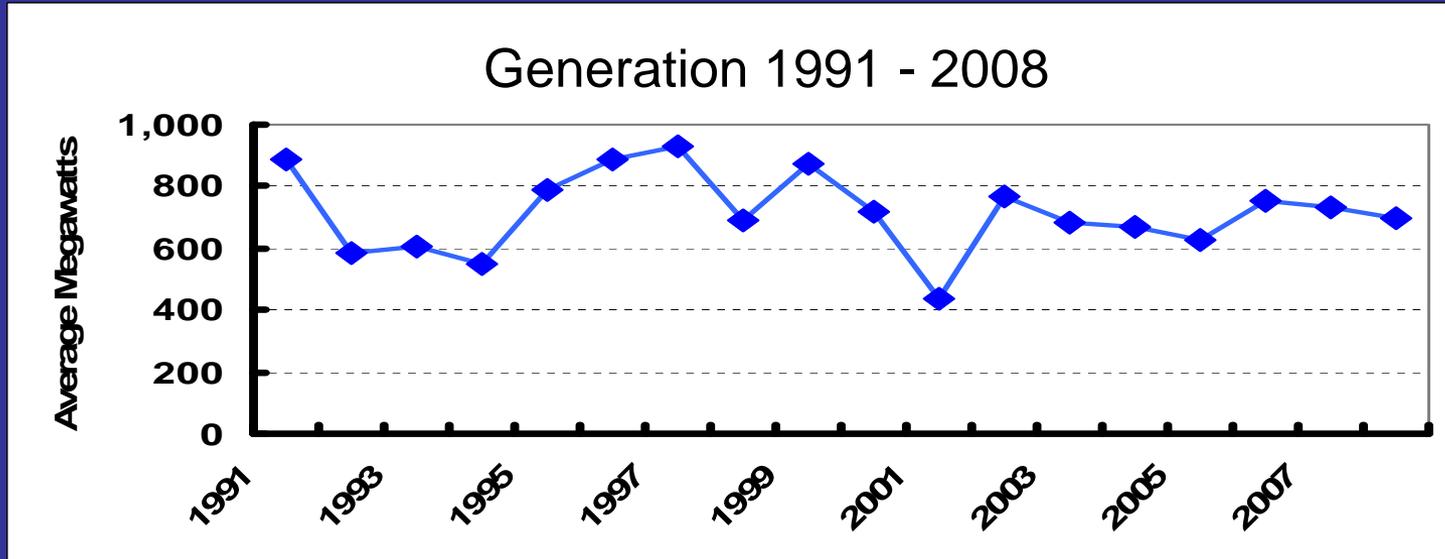
Load Troughs Often Lag Recession End Points



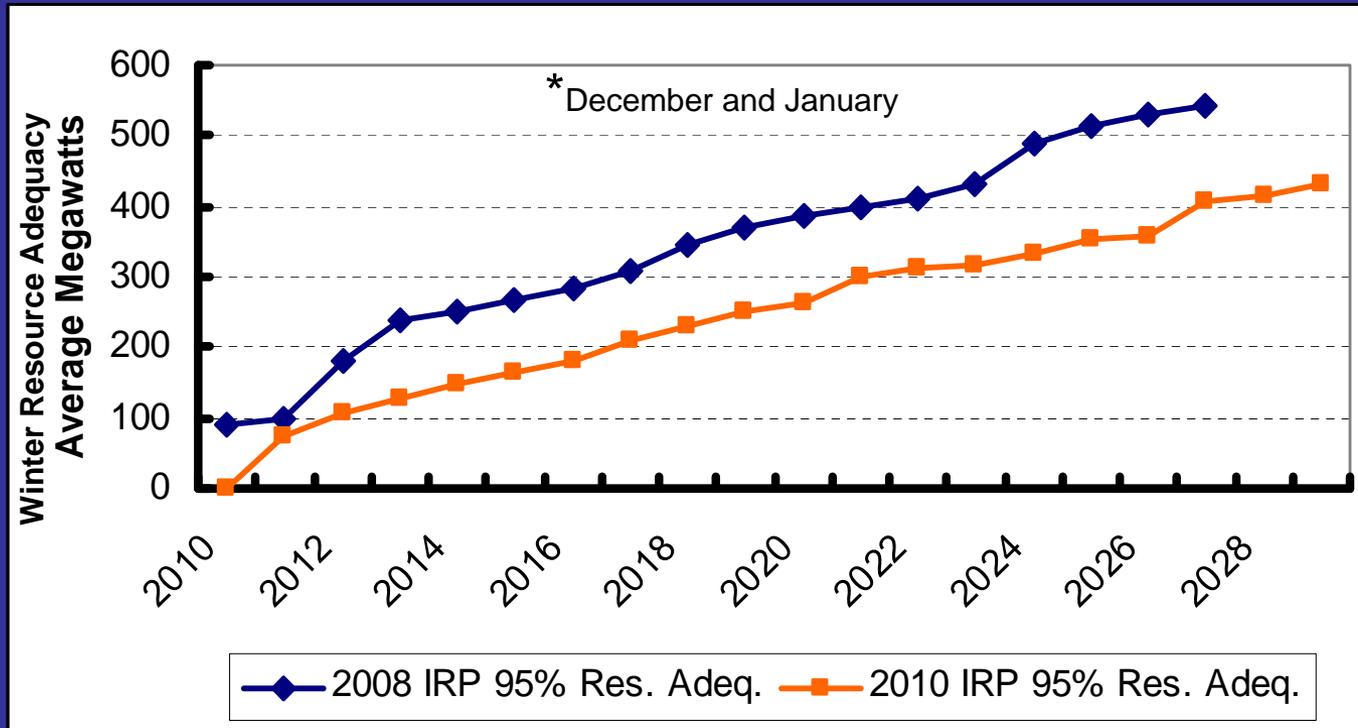
2010 Demand Forecast: Comparison with 2009 Forecast



Hydropower Variability at City Light's Skagit River and Boundary Plants



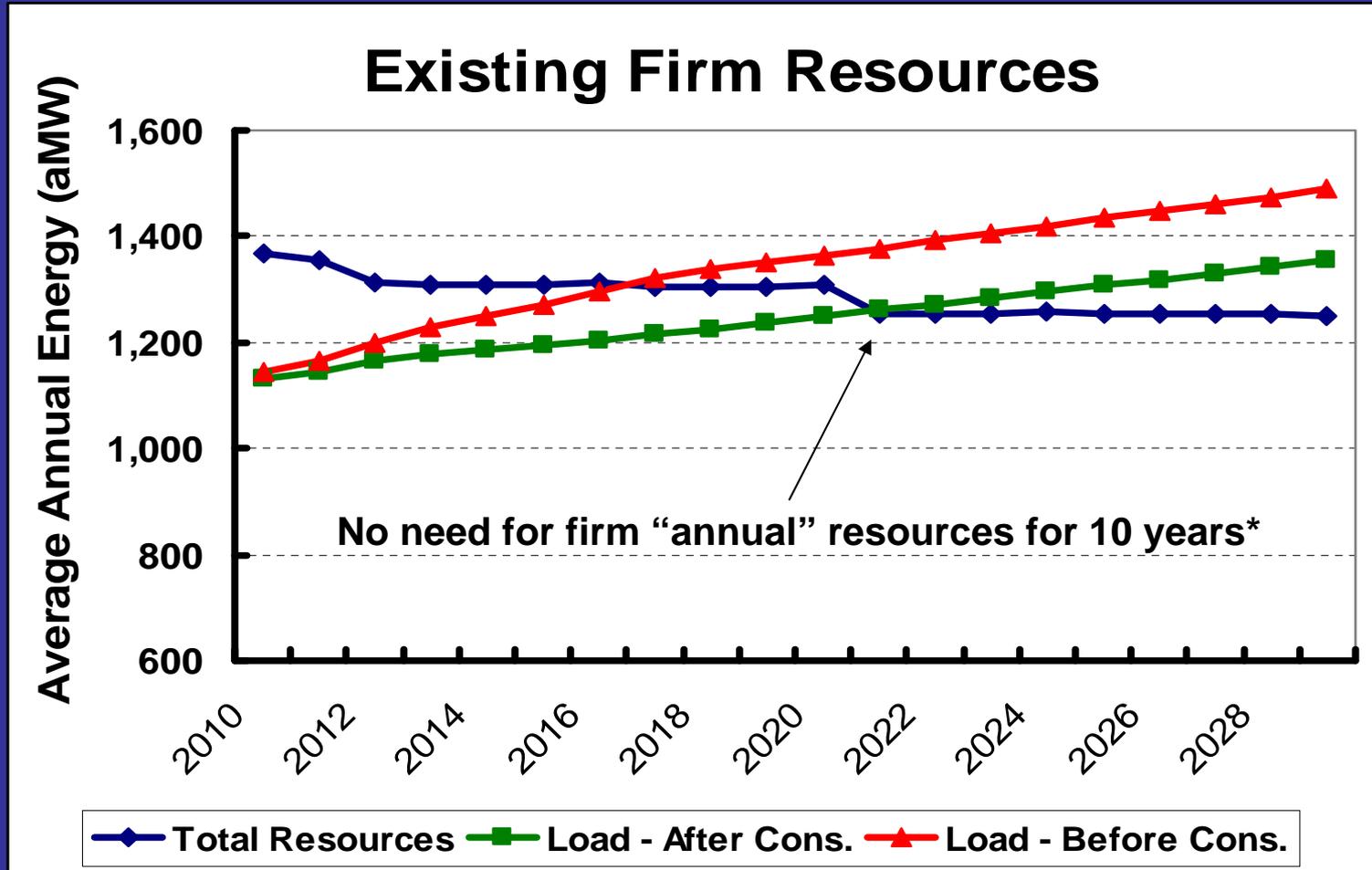
2010 IRP: Less Resources Needed to Preserve 95% Winter* Reliability



Accounts for Load Growth, Weather Impacts, Hydro Volatility, Forced Outages, Operating Reserves, Power Contract Terms and Expirations

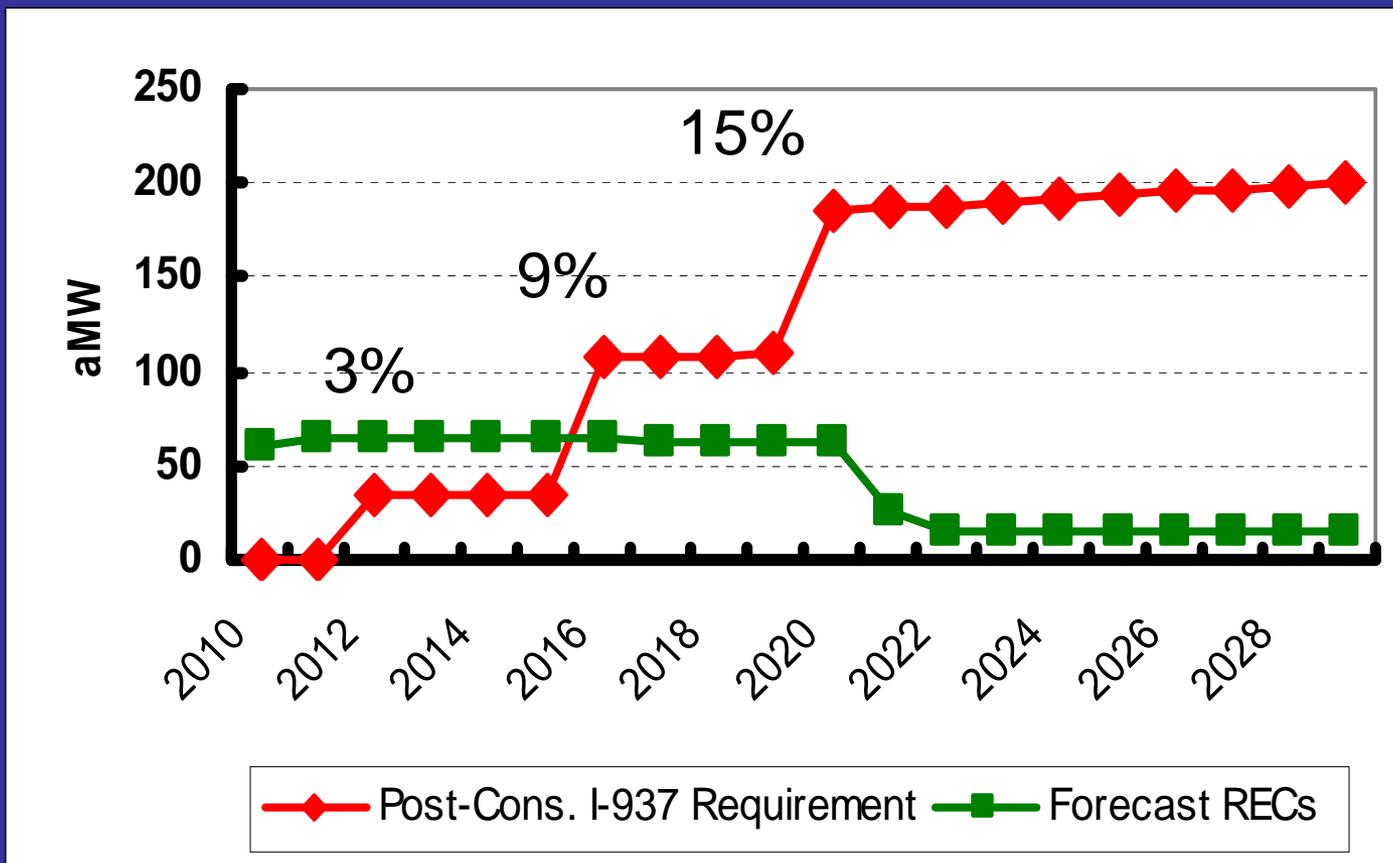
Notes: Both 2008 and 2010 assume 100 aMW from wholesale spot market. Winter reliability-based resource needs are independent of I-937 requirements.

Key Drivers: Forecast Customer Annual Average Demand and Firm Resources



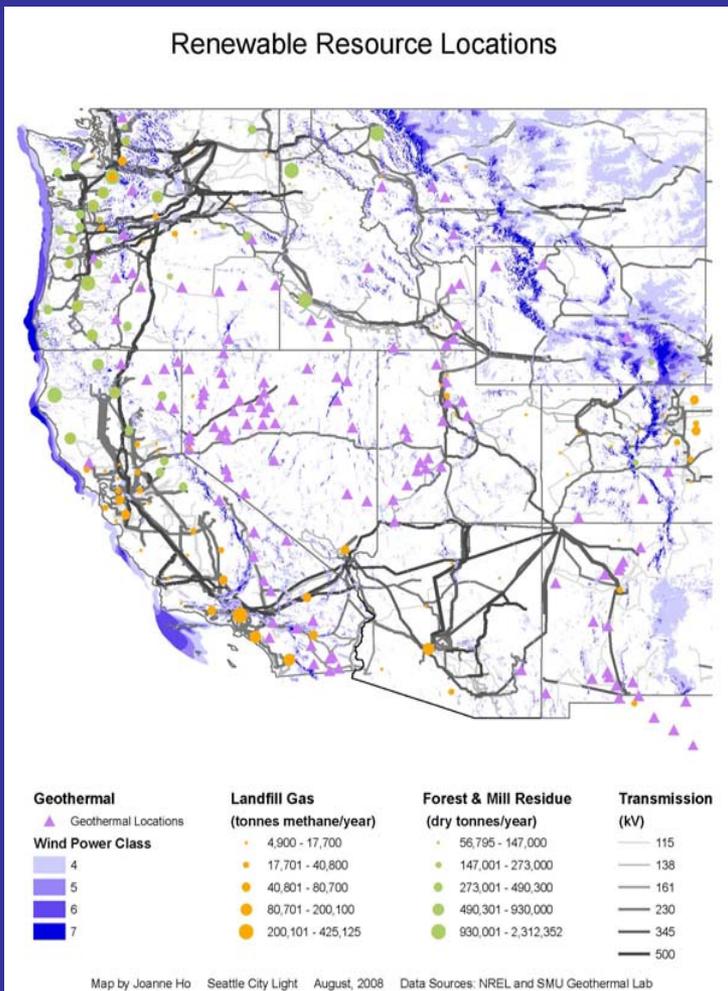
*Does not include "winter-only" needs

City Light I-937 Compliance Outlook: Now About 40 aMW Short for 2016



Hydropower is not a qualifying resource for I-937

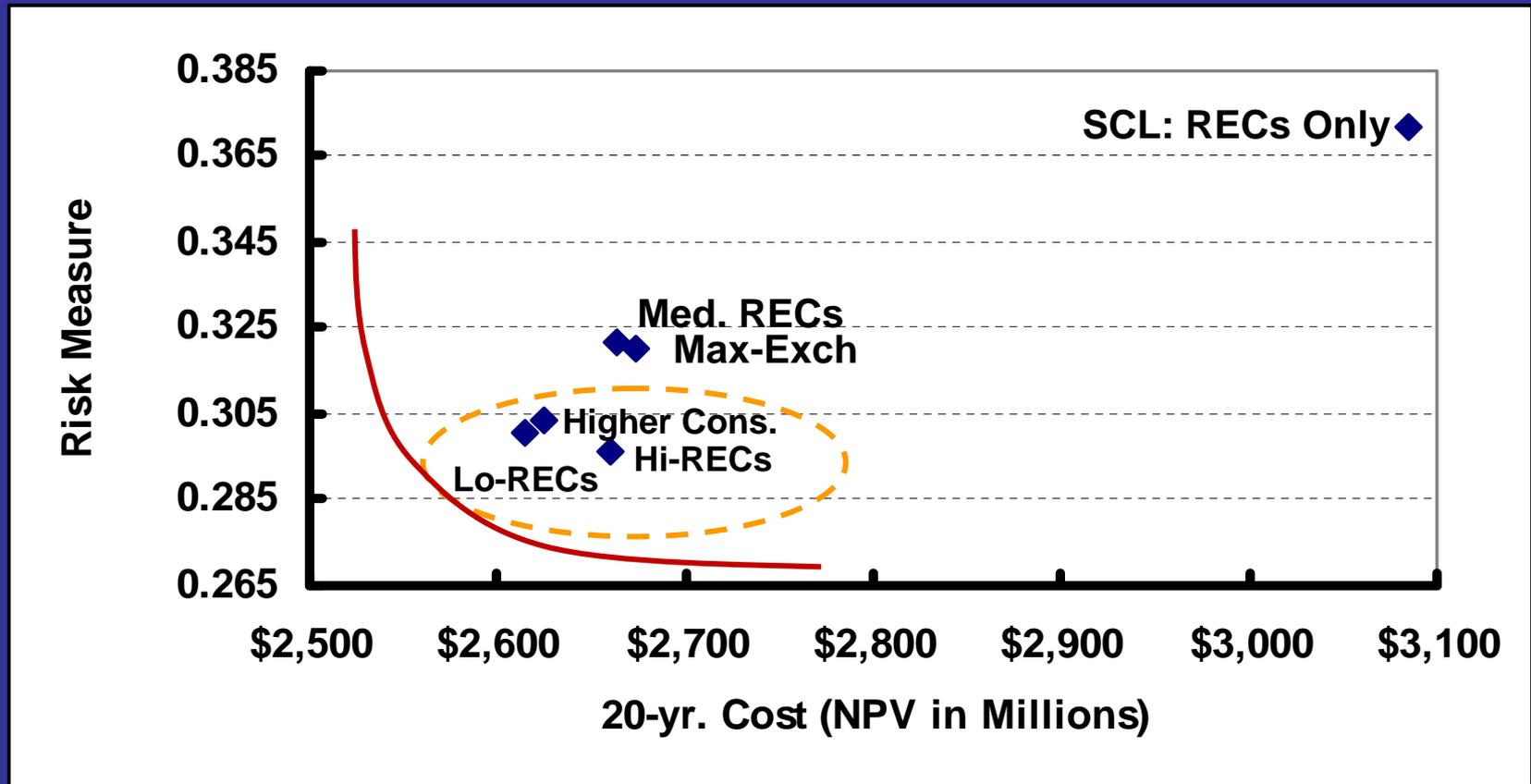
Wind, Geothermal, Biomass, and Landfill Gas Locations and Transmission



- Resource Concentrations
 - Wind (blue)
 - Montana, Wyoming, Oregon, Washington
 - Geothermal (purple)
 - Nevada, California, Utah, Oregon, Idaho
 - Biomass (green)
 - Washington, Oregon, N. California, Idaho
 - Landfill Gas (orange)
 - Seattle-Tacoma, Portland, San Francisco Bay Area, Los Angeles-San Diego, Denver



Top 3 Portfolios in Cost and Risk: Lo-RECs*, Higher Cons., Hi-RECs



*RECs = Renewable Energy Credits, representing environmental attributes of renewable energy under Initiative 937, can substitute for renewable energy in the law

20-Year NPV of Cost Compared to RECs-Only Case (Millions)

			
Top 3 Portfolios:	Hi-Cons.	Lo-RECs	Hi-RECs
High Demand	\$535	\$536	\$701
Low Demand	-\$1,976	-\$1,975	-\$1,888
High CO ₂ Price	-\$1,874	-\$1,875	-\$913
Low CO ₂ Price	-\$1,372	-\$1,358	-\$193
High Gas Price	-\$906	-\$291	-\$700
Low Gas Price	\$21	\$20	\$86
High REC Price	-\$501	-\$459	-\$362
Low REC Price	-\$649	-\$480	-\$532
Scenario Avg. Ranking	1st	2nd	3rd
95% Risk	-\$334	-\$294	-\$301
Base Case	-\$589	-\$470	-\$428

Rankings: ■ First ■ Second ■ Third

Other Issues Being Analyzed

- Plug-In Hybrids & Electric Vehicles
 - Update assumptions, consistent with Electric Power Research Institute study
- Climate Change
 - Update for New UW Research on Impacts to Hydro Generation and Electricity Demand

What's Next?

- Seek City Council Approval of Draft 2010 IRP
- Incorporate Key Elements of the IRP into the Strategic Plan Update as Appropriate
 - Contributes to Customer Service, Operational Excellence, Environmental Stewardship, and Balanced Resource Portfolio in the Strategic Plan
- Continue to acquire RECs and Renewable Resources on a Path to Comply with 2016 Targets for I-937

Questions or Comments?

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<http://www.seattle.gov/light/news/issues/irp/>

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