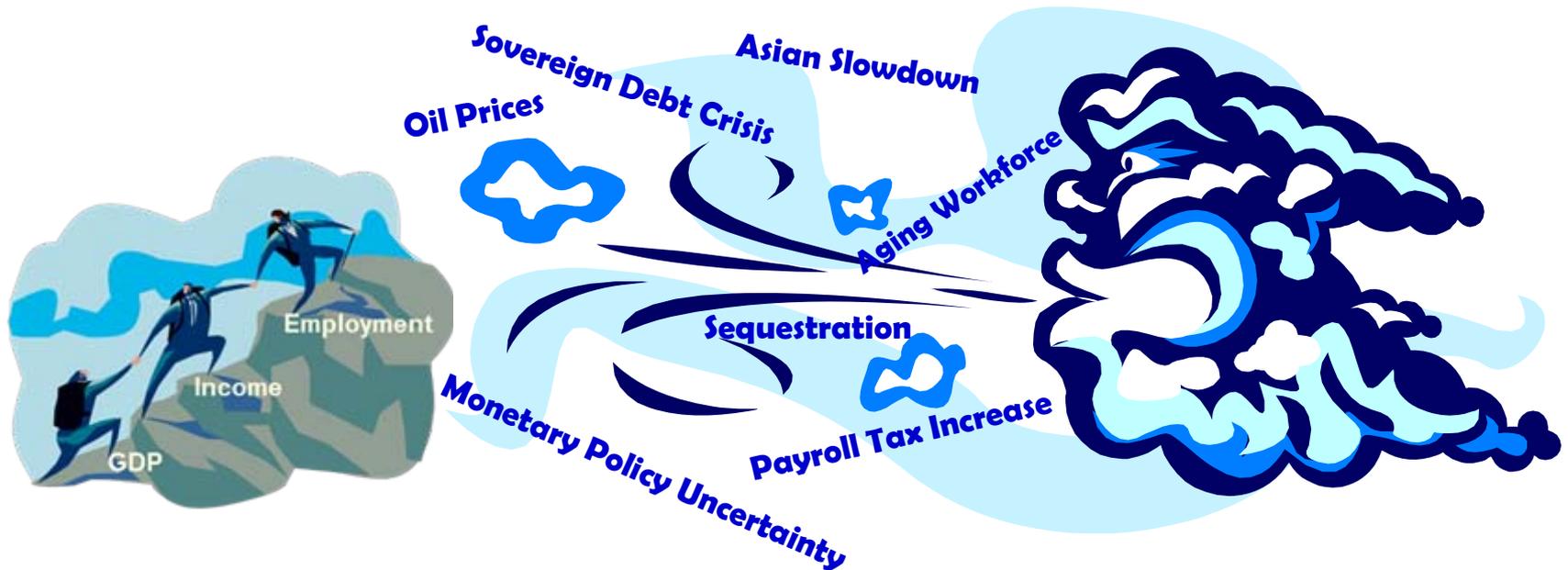


2013 System Load Forecast

**Seattle City Light Review Panel
December 6, 2013**

US Economy Growing; Still Facing Strong Headwinds



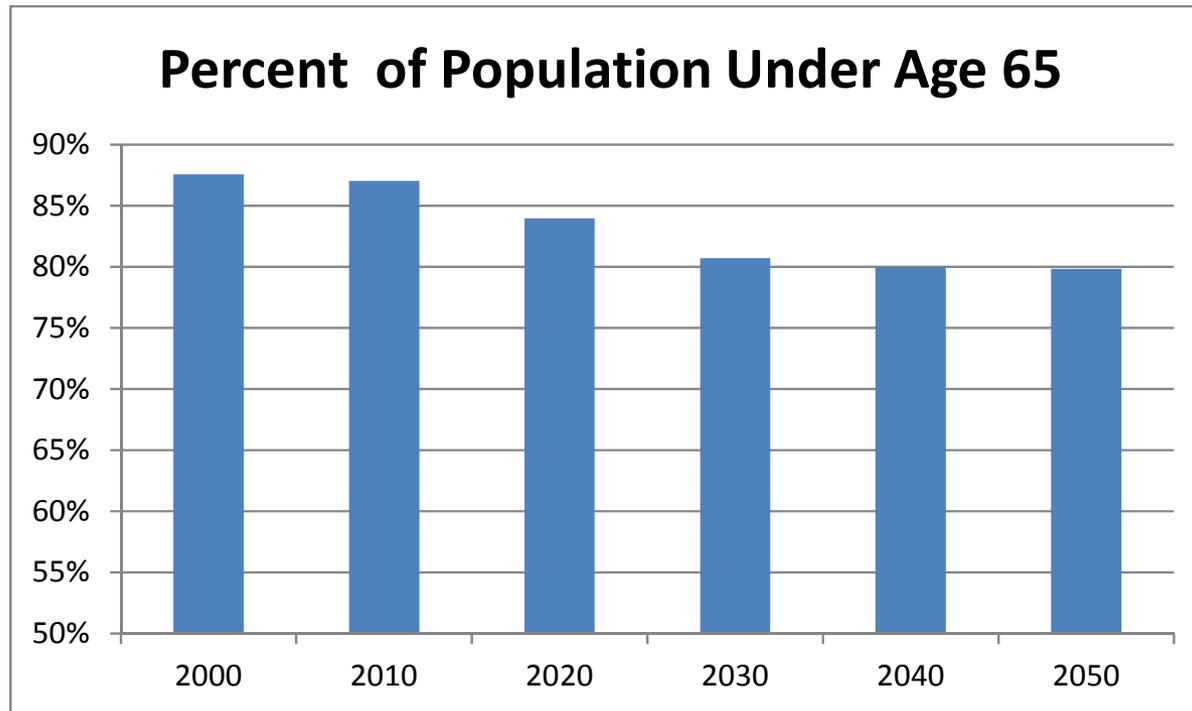
Why a Slow Growth Recovery?

■ Contributing Factors

- Japanese tsunami disrupts supply chains
- Repeated European financial crises
- Fiscal cliff spending cuts
- Ending the payroll tax holiday
- Businesses lost confidence; capital investment at an all-time low relative to average returns
- Easy money policy and high corporate profits, but no trickle-down to main street
- 12 million still looking for work -- long-term unemployed lose skills and prospects
- Weak fiscal policy: federal government stopped stimulus after 1 year; state and local governments continued to cut spending, jobs, and raise taxes

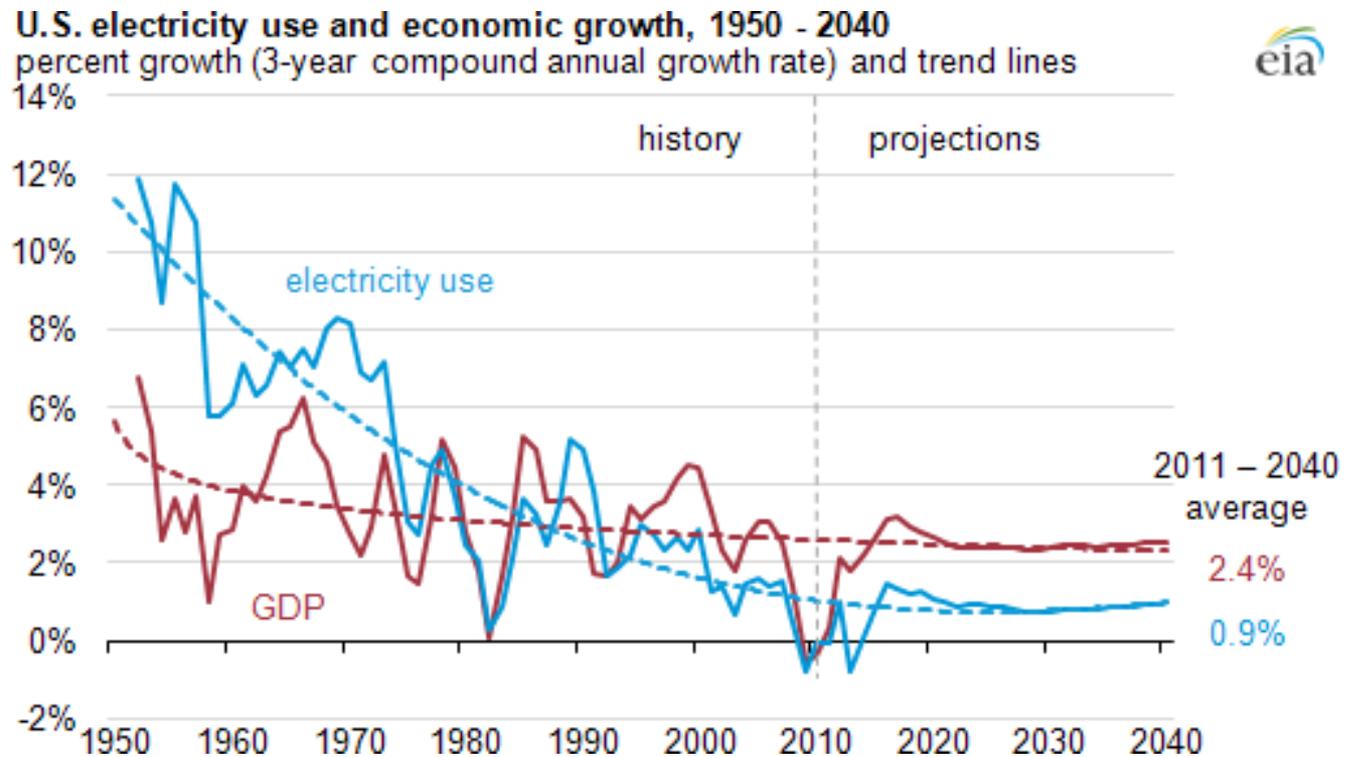
Aging Workforce Slows Long-Run Economic Growth Potential

“In the 21st Century, real GDP growth in the United States is likely to be permanently slower than it was in earlier eras because of a slowdown in labor force growth initially due to the retirement of the post-World War II baby boom generation, and later due to a decline in the growth of the working age population.” – 2013 White House Budget



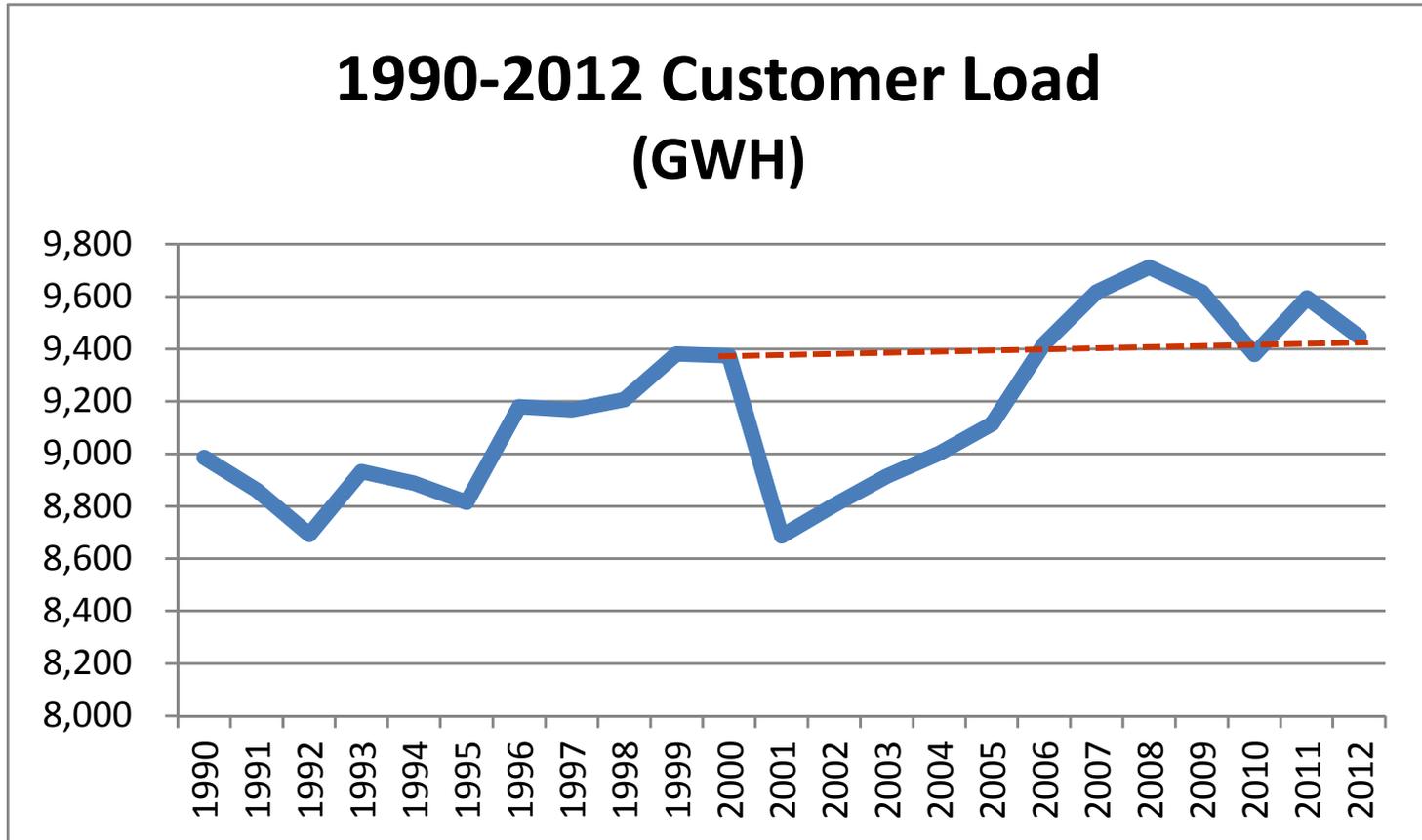
Source: US Administration on Aging, US Census

Is Electricity Demand Growth Slowing? Yes, and it's Not New



Slower Economic Growth, Manufacturing Going Offshore, Tighter Building Codes, Lighting Efficiencies, Appliance Efficiencies, Heating & Cooling Efficiencies, Motor Efficiencies, and Real Rate Increases are Slowing Electricity Demand Growth

2012 City Light Load 0.8% Higher Than 2000



Seattle Development Activity

- **Commercial:** “Amazon is Behind 71% of Seattle's Office Construction”

(Seattle Business Journal)

Amazon Campus, 7th & Westlake (3.3 mil. sq. ft.)



Vulcan, Mercer & Westlake N.

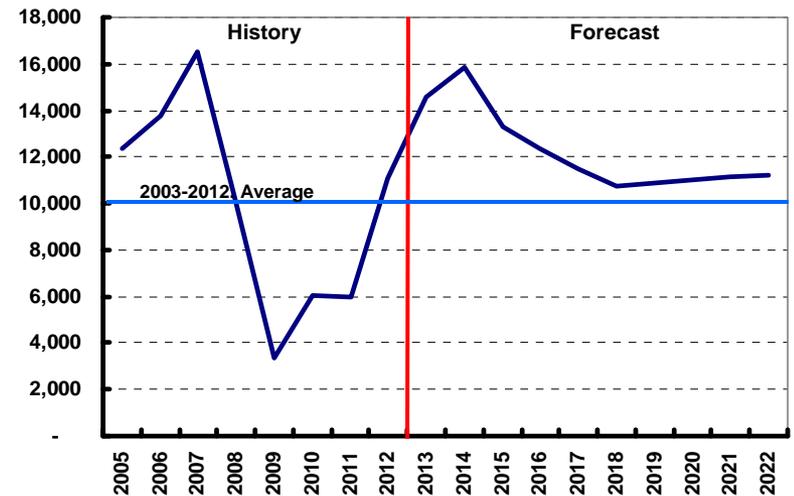


Spear St. Capital, et. al., 202 Westlake Ave. N.



- **Residential:** New Housing Grows Rapidly 2011-2014; Then Slows

Housing Permits in King County



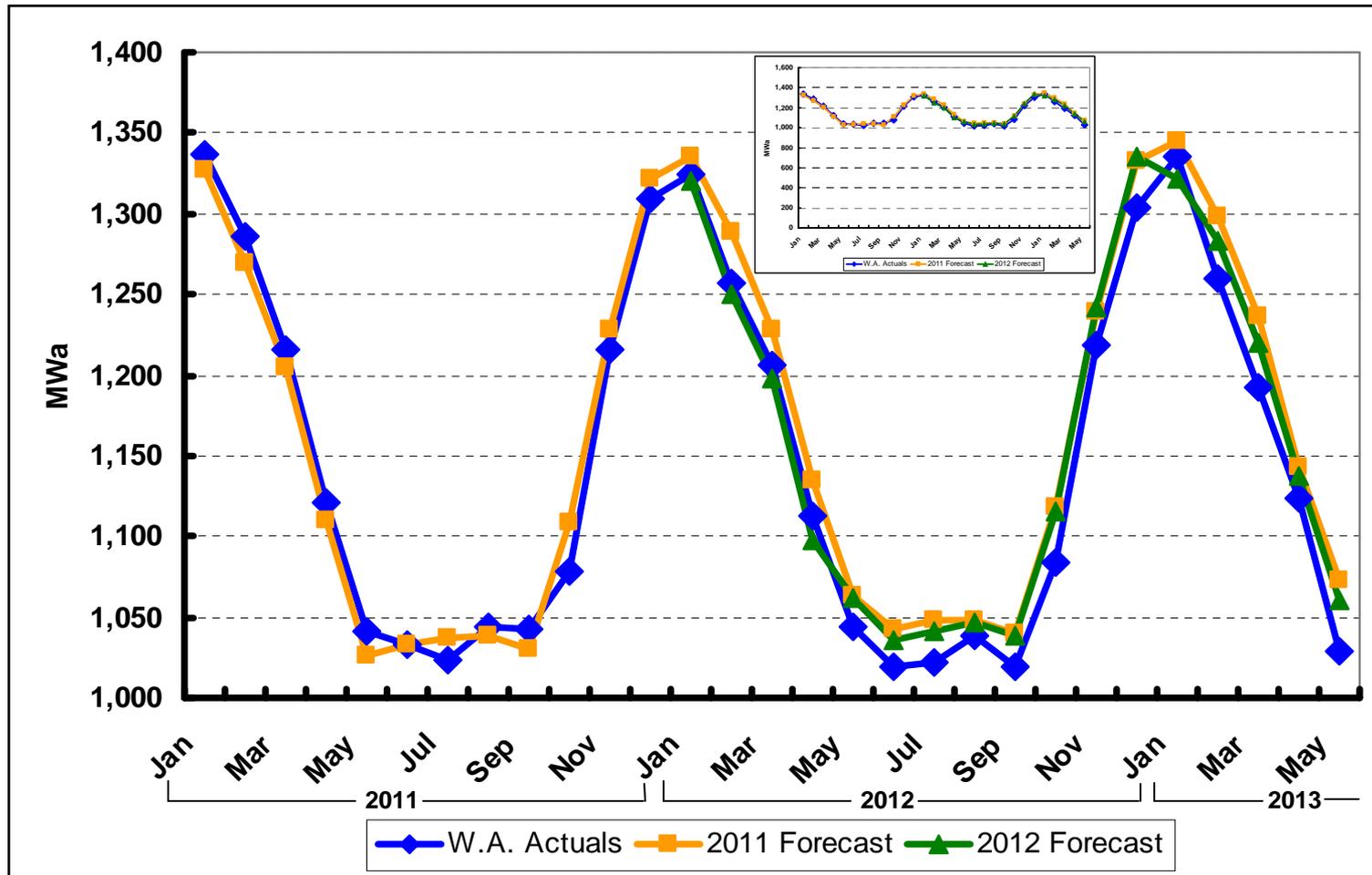
Price Elasticity of Demand is Low

	EPRI Study of U.S. Price Elasticity	City Light Price Elasticity
Residential	-0.09	-0.08
Commercial	-0.11	-0.14
Industrial	-0.12	-0.21**
Average Total	na	-0.11

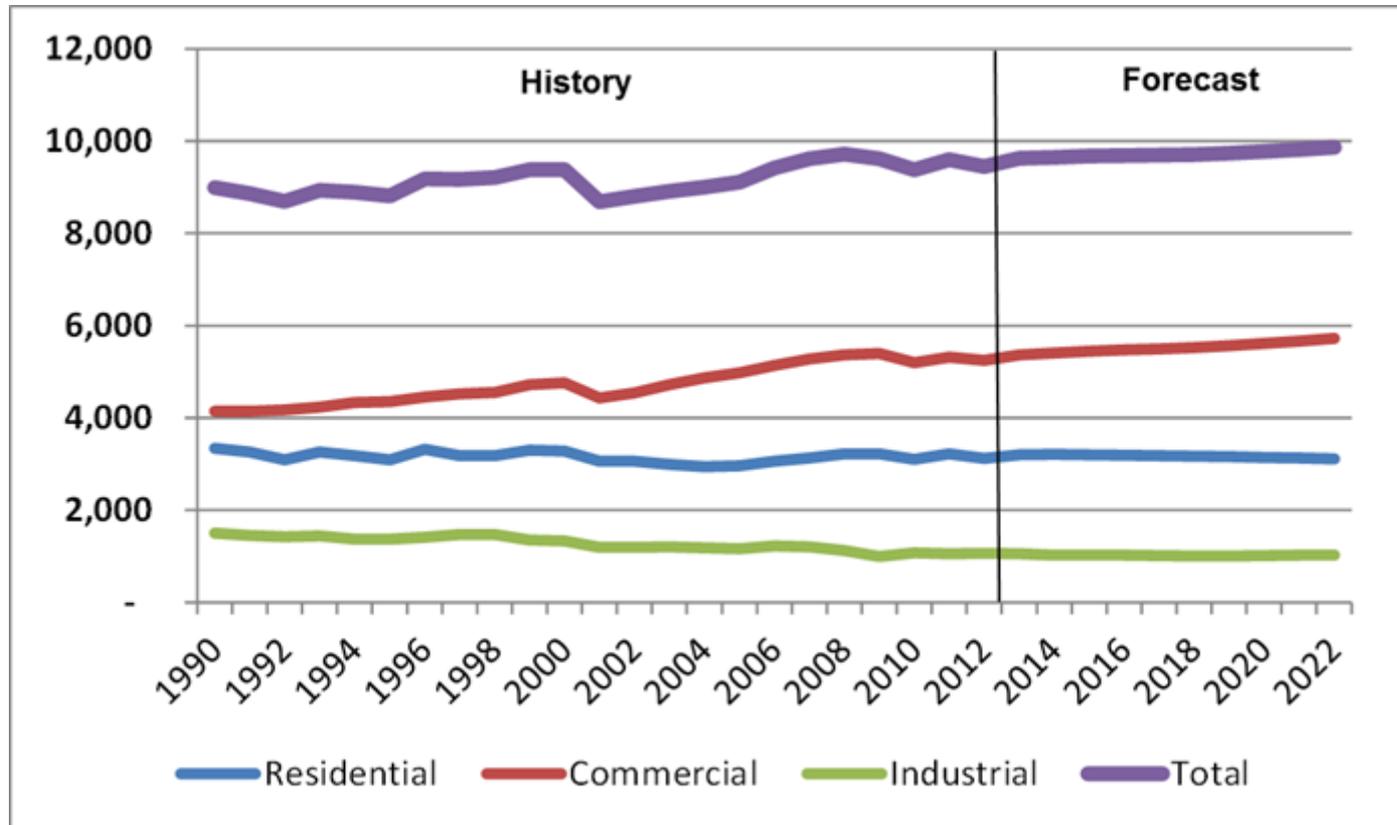
*Forecast has 2.55% Average Annual Change in Seattle Consumer Price Index: 2013-2018

**A higher than usual proportion of SCL industrial load is metals and building materials, which are highly sensitive to electricity prices and economic cycles

Weather-Adjusted Actual Load Compared to 2011 and 2012 Forecasts



Customer Load: History & Forecast (GWh)

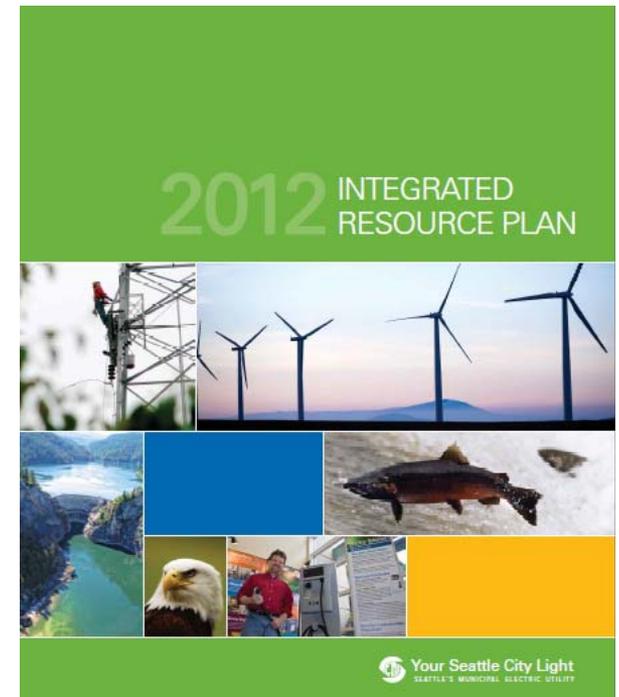


Integrated Resource Plan

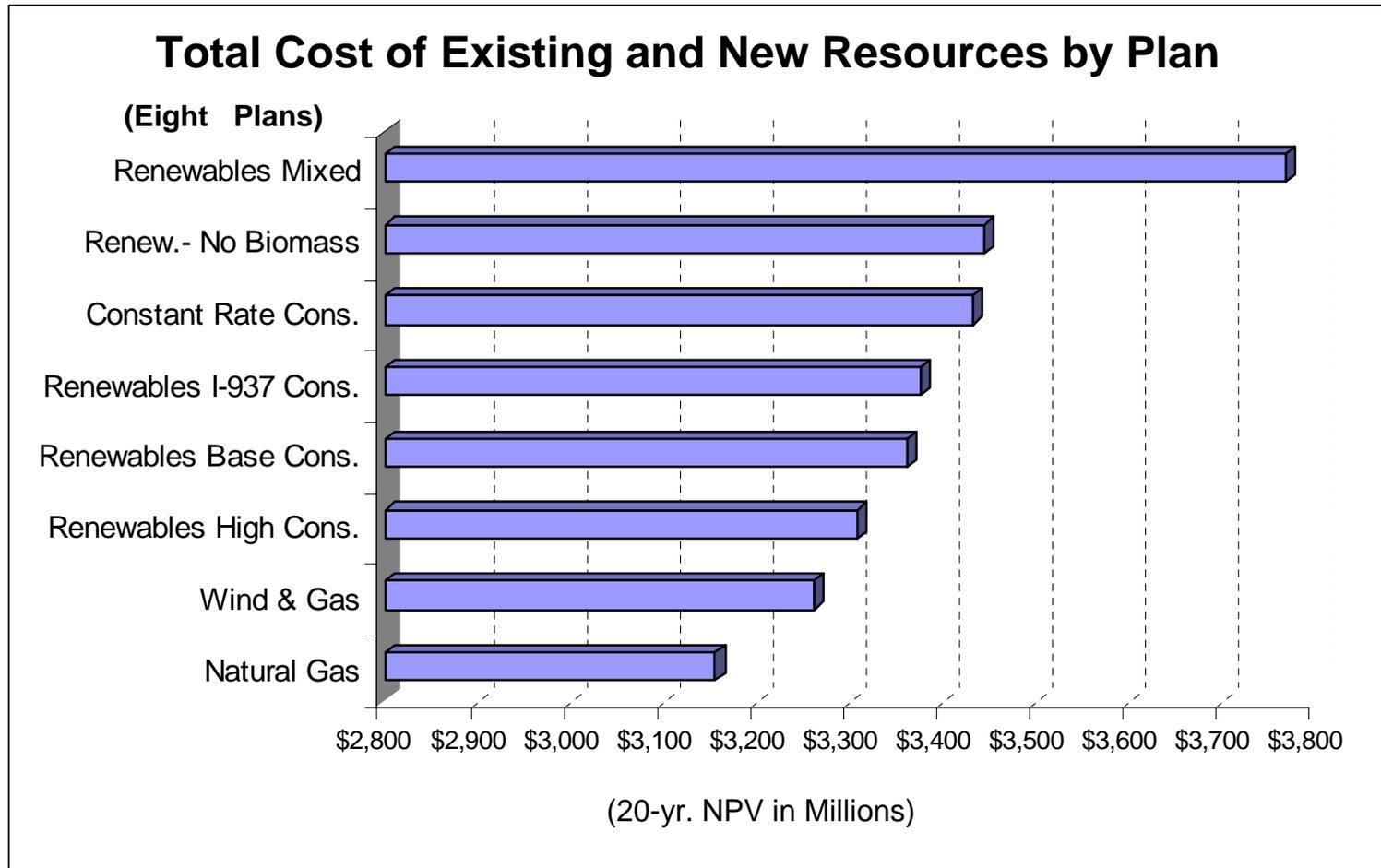
**Review Panel
Seattle City Light**

Seattle City Light Integrated Resource Plan (IRP)

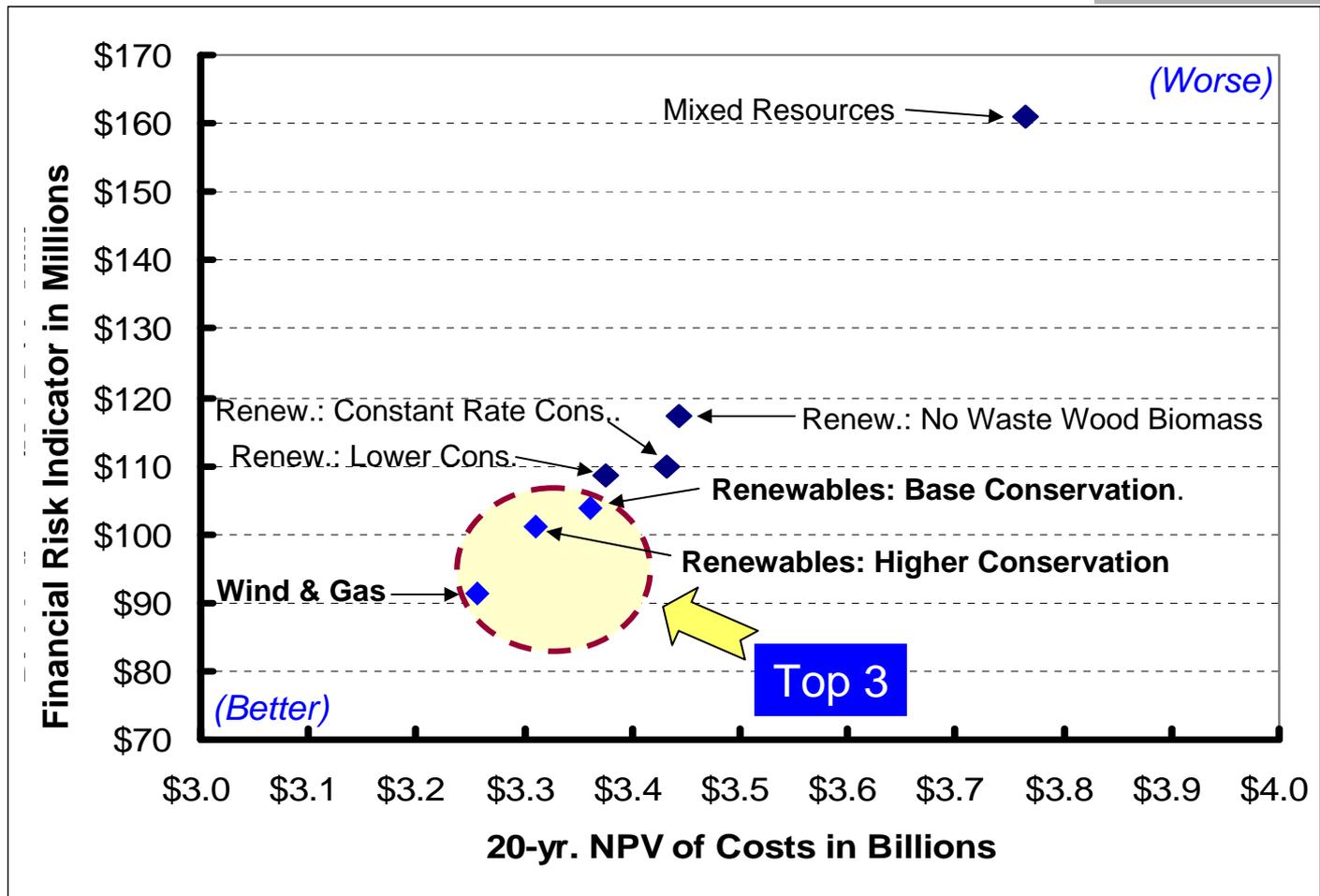
- The IRP is About Three Long-Term Questions:
 - How Much Conservation and Power Resources? When? What Kind?
- IRP Objectives:
 - Sufficient Power Supply for Reliability of Service
 - Consistency With City Energy Policies
- Four IRPs Approved by City Council and Filed Since 2005



Cost by 2012 IRP Draft Plan



Combined View of 20-Year Cost and a Financial Risk Indicator



Note: The natural gas portfolio was eliminated because of clear inconsistency with Council resolution 30144

Preferred Portfolio

Renewables – Base Conservation

Cumulative Total Average Megawatts

	Conservation	Landfill Gas	W. Waste Biomass	Hydro Efficiency	Wind	Geothermal	Photovoltaic	Short-Term Market	RECs	Total RECs & Resources
2012	14									14
2013	27									27
2014	41									41
2015	55									55
2016	69									69
2017	83								3	86
2018	97							10		107
2019	111									111
2020	125	8								133
2021	139	8							7	154
2022	153	8	30							191
2023	167	8	40	5	20					240
2024	181	8	40	5	90					323
2025	194	8	40	5	100					347
2026	205	8	40	5	125					382
2027	213	8	40	5	125					390
2028	220	8	40	5	125			15		412
2029	227	8	40	5	125					404
2030	233	8	40	5	125					410
2031	237	8	40	5	125	20	20			455

IRP Progress Report or “Update” in 2014

- RCW 19.280: “Updates” When No Major Changes Expected
 - The 2012 IRP had no other resource acquisitions than conservation before 2020
- An IRP is a Large Undertaking
 - Complex studies of hourly demand and supply
 - Stochastic modeling of resource adequacy
 - Simulations of alternative portfolios
 - Evaluation of many external factors
- An “Update” has Few Defined Requirements



IRP Update Topics

- 2012 Action Plan Progress
- Public Input Process
- Planning Environment: Regulation & Power Markets
- Conservation Potential Assessment
- System Demand Forecast
- Resources
- Reliability Measures
- New Technologies



Four Key Trends and Their Expected Impacts for the 2014 IRP Update

- Low Natural Gas and Wholesale Power Market Prices
 - Surplus energy is sold for less in the wholesale power market
- Lower Cost Renewable Energy Credits (RECs)
 - Widens the cost gap between renewables (RECs included) and natural gas generation (plus purchased RECs)
- Delayed and Lower CO2 Costs
 - Makes natural gas and other fossil fuel generation even more cost-competitive with renewables
- Slow Economic Recovery and Slow Demand Growth
 - Delays new resource needs for City Light

IRP Update Participants

- City Light Technical Staff
- IRP Stakeholders
 - Currently Includes:
 - Council staff, Boeing, Nucor, University of Washington, Seattle University, BPA, McKinstry, NPCC, Energy Coalition, Harborview, Emerald Cities, Others
- City Council Energy & Environment Committee
 - Three briefings including request for approval
- Public
 - Two public meetings

Questions or Comments?

IRP Website Address:

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

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