

Evaluating Alternative Energy Efficiency and Power Resource Plans

**2012 IRP Public Meetings
Seattle City Light**

Integrated Resource Plan (IRP): Three Basic Questions

- How Much Electric Power and Energy Efficiency (Conservation)?
- When?
- What Kind?

Introduction

- Washington's HB1010 Requires City Light to Revise the Integrated Resource Plan (IRP) Every Two Years
 - An approved IRP must be filed with the State by September 1, 2012
- City Light has Developed Eight Draft Plans to Address:
 - HB1010 Regulatory Requirements
 - I-937 Requirements
 - Reliability Targets

How Can the Plan Affect Customers in the Long Term?



Reliability



**Electricity
Bills**

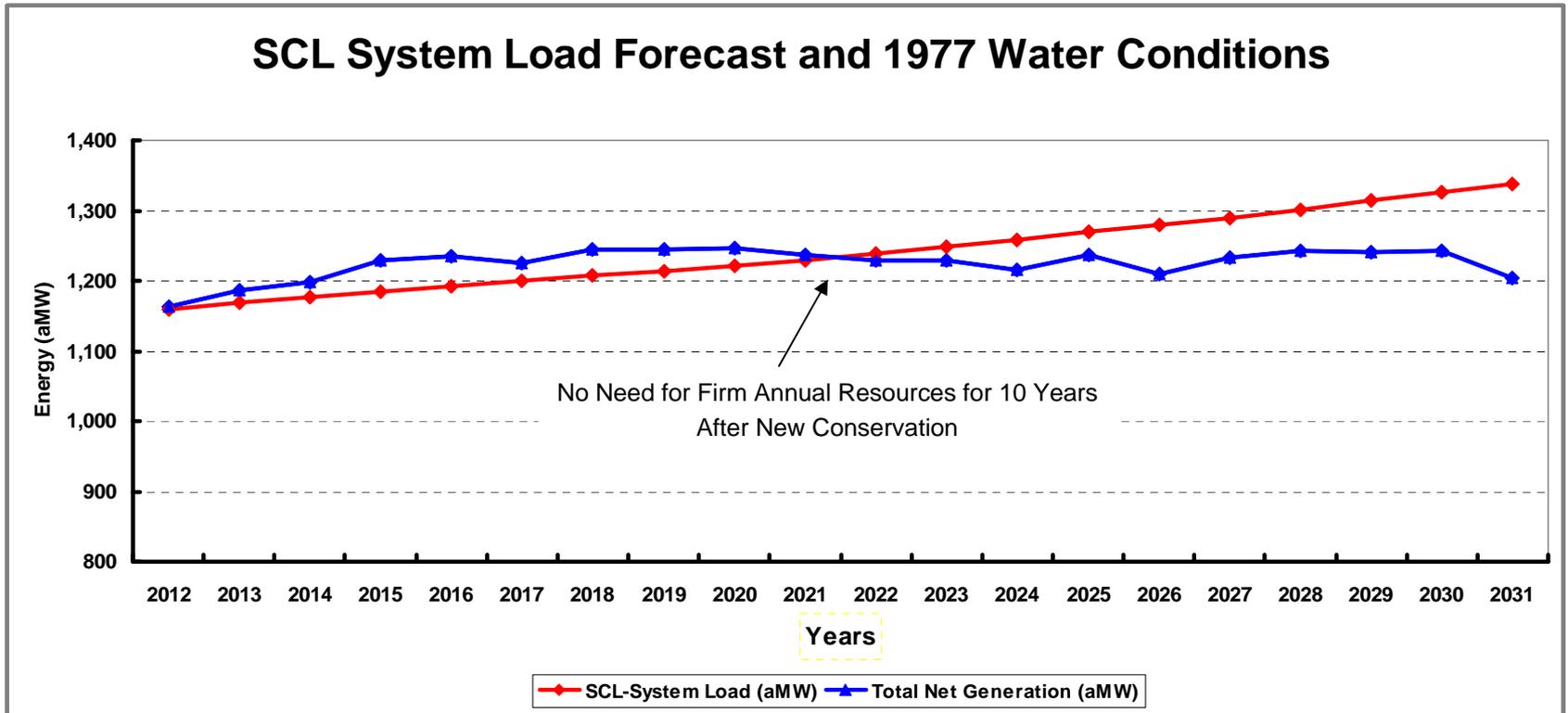


**Environmental
“Footprint”**

What Do People Care About in Integrated Resource Planning?



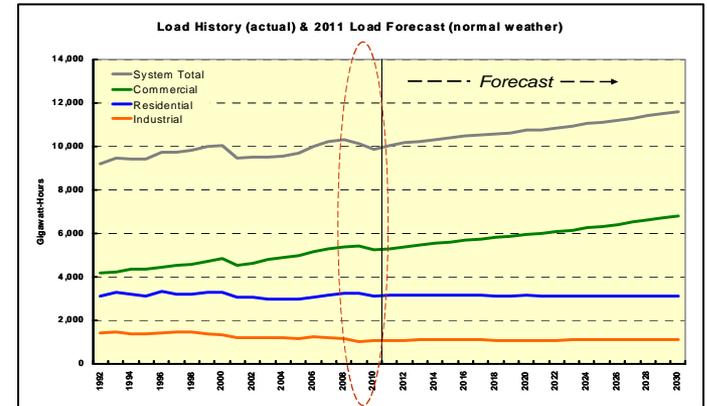
Existing Firm Annual Resources



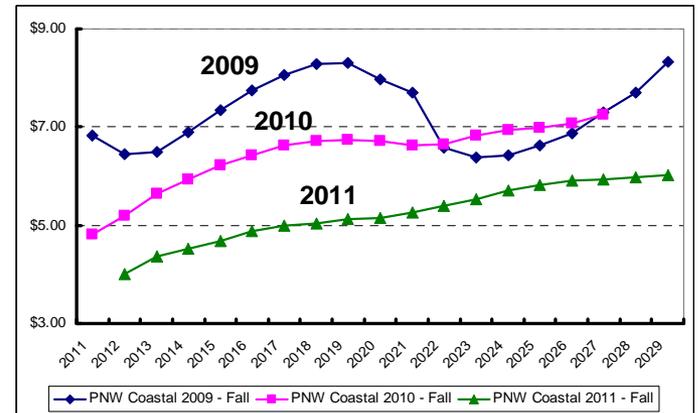
Notes: Includes planned outages for turbine rebuilds and other scheduled maintenance. Winter capacity is adequate.

Four Key Trends

- Electricity Demand Falls With Recession
 - Delays new resource need by 2-3 years
- Growing Shale Gas Supplies Shake-Up Gas and Power Industries
 - Gas prices down nearly 40%, lowering power market prices



Source: City Light



Source: Ventyx

Four Key Trends (*Continued*)

■ Regulation of CO₂ Emissions Put on “Back Burner” in 2011

- Updated E3 outlook delays CO₂ emissions costs until 2018 and cuts the cost/ton

■ California PUC Ruling Expands PNW Renewable Energy Credit (REC) Supplies

- Cap on sales to California creates more competitive PNW market – our REC price outlook is cut by over 40%

Bipartisan Bill Introduced in House to Block EPA Carbon Regulations

Hart, Kathleen. *SNL Energy Finance Daily*. (March 4, 2011).
“...economic threat posed by the EPA's climate change agenda.”
“The EPA needs to be reined in.”
“...strong bipartisan support”

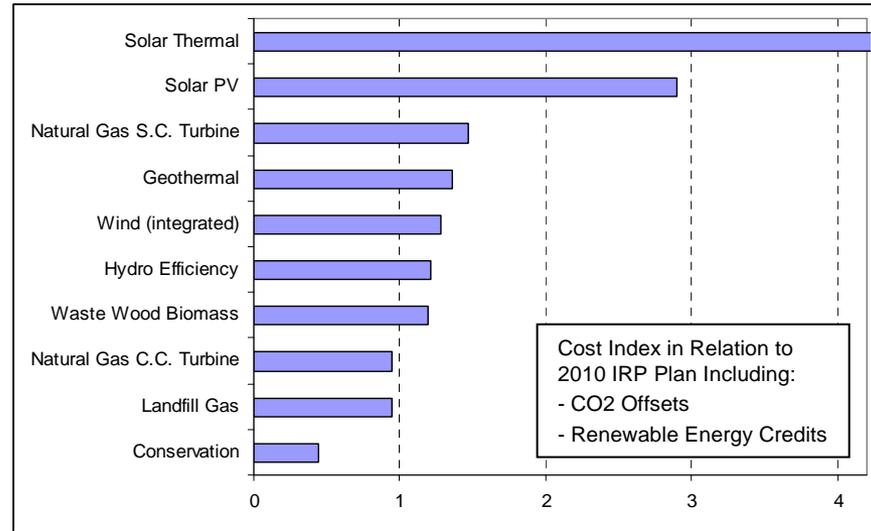
Calif. PUC Approves Use of TRECs for Renewables Compliance After Months of Debate

Stanfiel, Jeff., *SNL Energy Power Daily* (Jan. 18, 2011).
“...allowing the use of tradable renewable energy credits”
“...**can meet no more than 25% of their annual requirement...**”
(emphasis added)

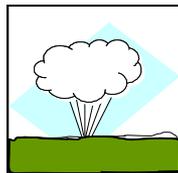
Resource Planning Policy

- **Policy Guidance From the Seattle City Council:**
 - **Conservation is the Resource of Choice**
 - **Load Growth Met With Renewable Energy to the Extent Feasible**

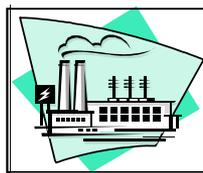
New Resources in the 2012 IRP



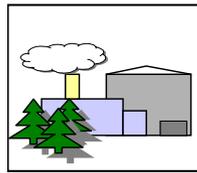
Conservation



**Geothermal
(Binary)**



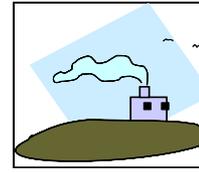
**Natural Gas
Turbines**



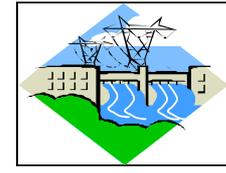
**Biomass
(Waste Wood)**



Wind



**Landfill
Gas**



**Efficiencies
at Hydro Plants**



Solar PV



Solar Thermal

Summary of Eight Draft Plans: Range of New Resources Over Time

Range of New Resources in 5, 10, and 15 Years (aMW)

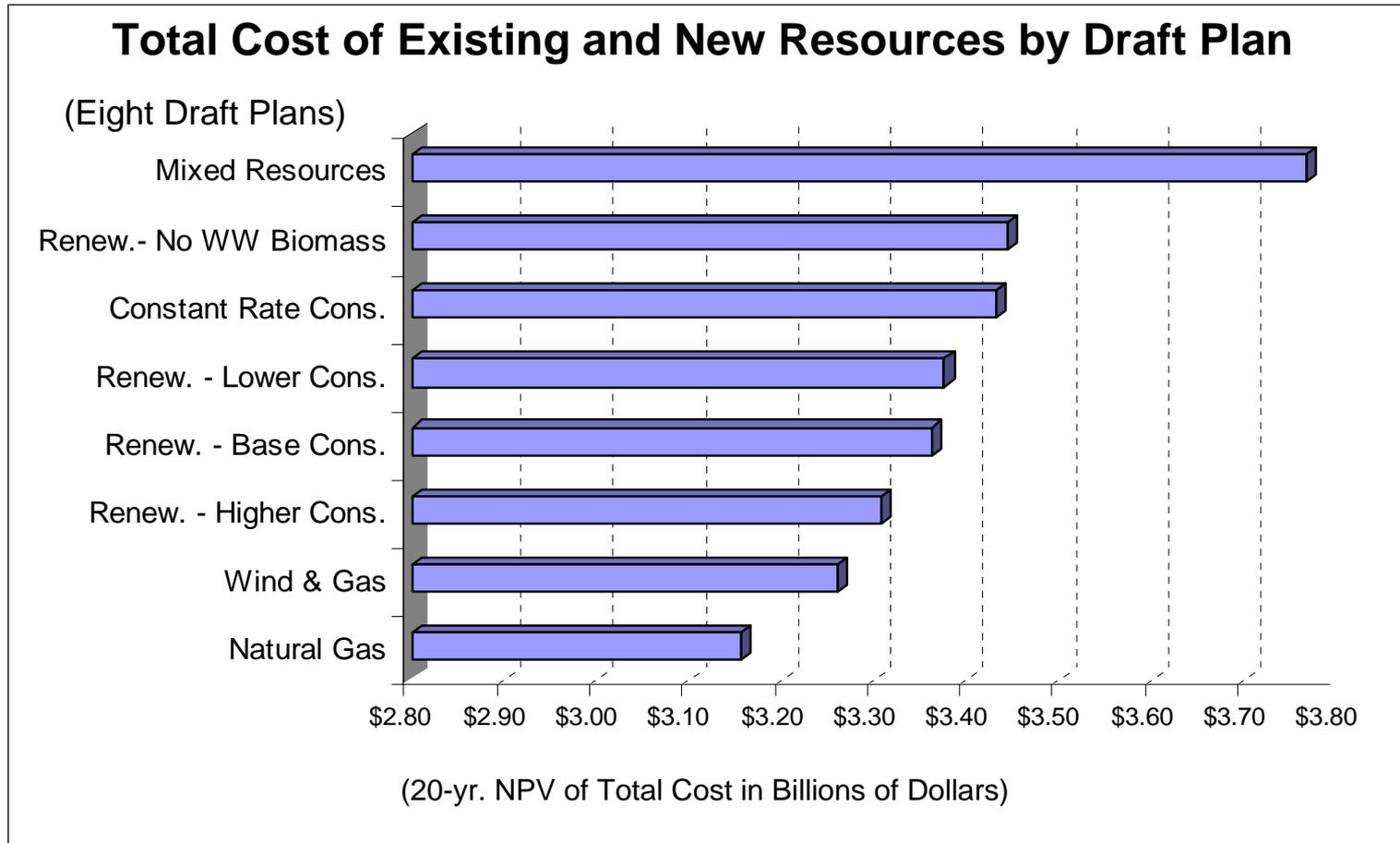
Resources	5 Years	10 Years	15 Years
Conservation	59 – 77	117 – 157	171 – 207
Renewables	0	8 – 28	168 – 203
Natural Gas	0	0 – 25 (25 in one plan)	0 – 175 (50 – 175 in three plans)

- Conservation is at the core of all the draft plans
- Limited need for new generating resources in the first decade
- Significant need for new generating resources in the second decade

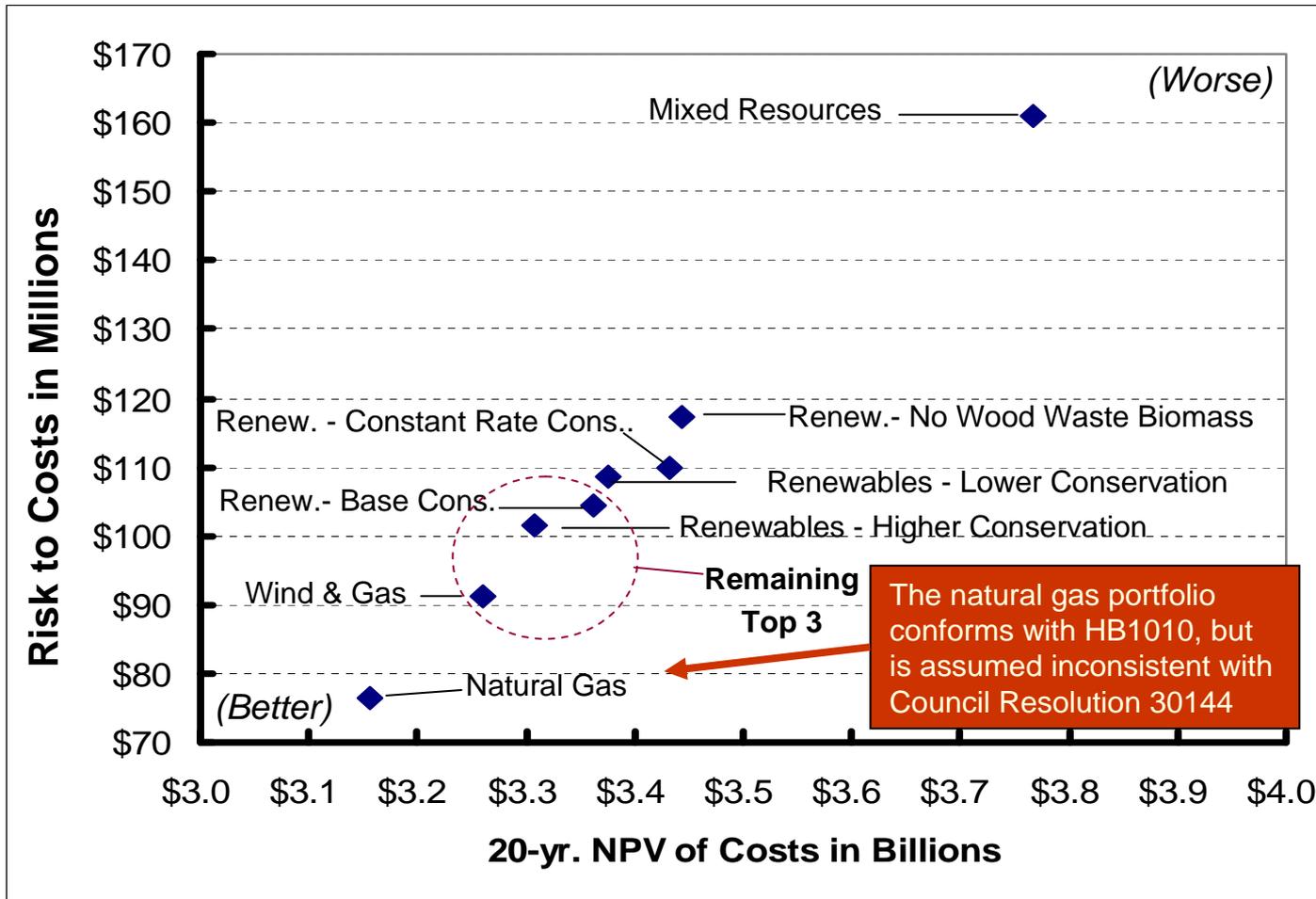
Draft Plan Evaluation

- All Draft Plans are Designed to Comply With the Law
 - HB1010
 - I-937
- Other Evaluation Criteria
 - Cost
 - Risk
 - Environmental Performance
 - Costs for CO₂, SO₂, NO_x, Hg, and PM emissions

Costs for Eight Draft Resource Plans

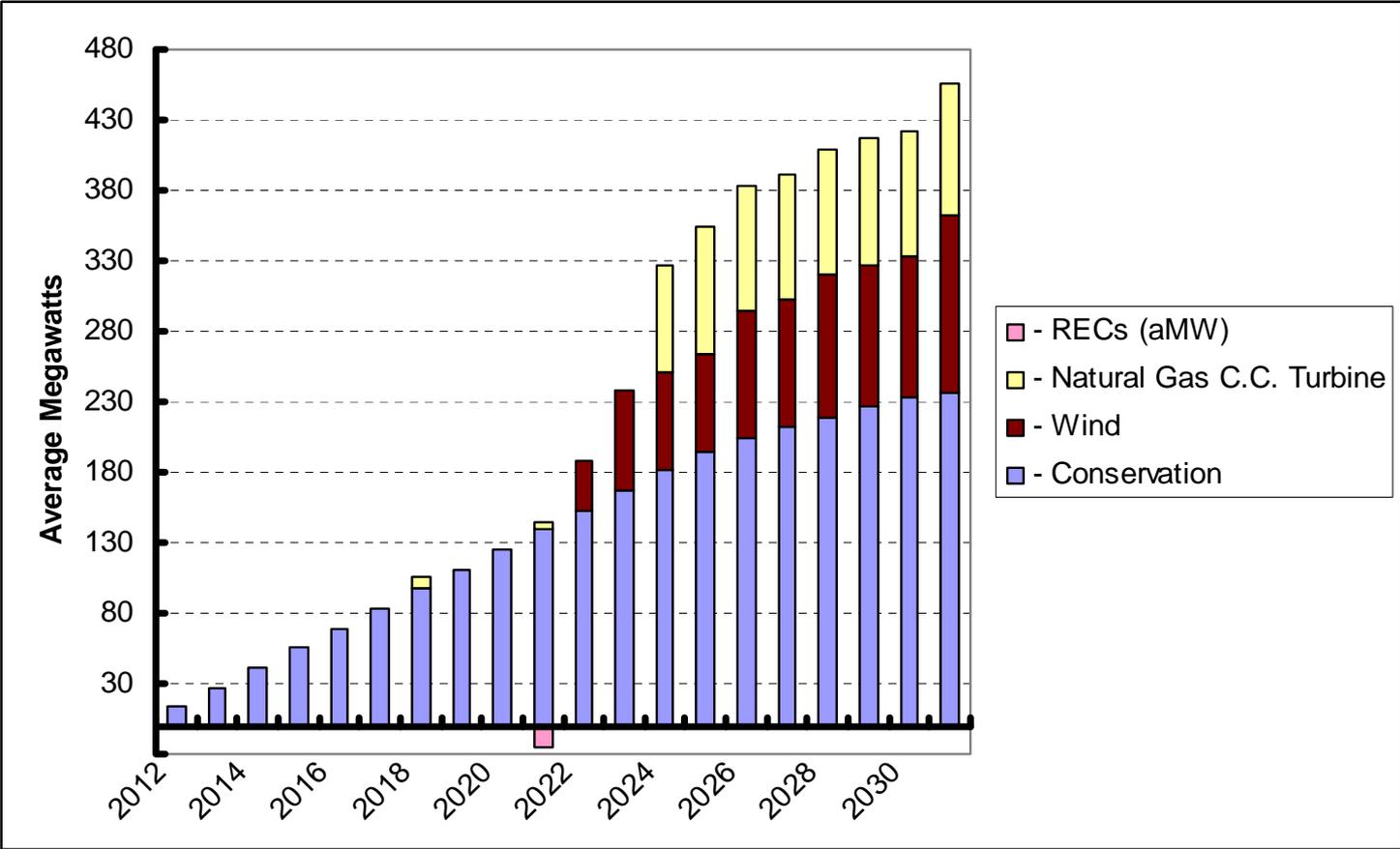


Initial Results: Combined View of Costs and Risk to Costs

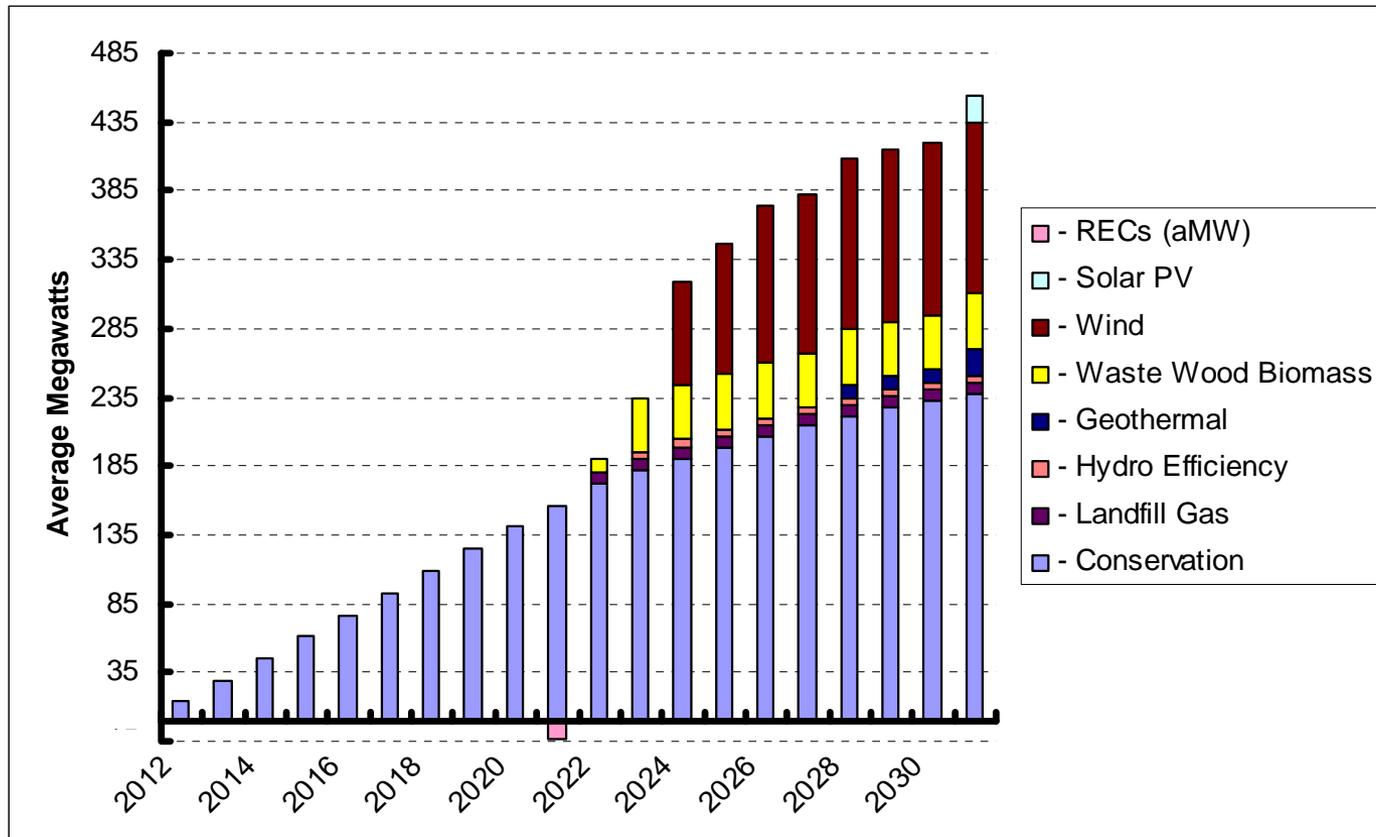


Note: A more robust measure of risk and scenarios will be completed for the top 3 portfolios

Wind & Gas



Renewables: Higher Conservation



Next Steps

- Test Methods for Accounting for GHG Emissions from Waste Wood Biomass
- Risk Analysis and Scenarios for Top 3 Plans
- April Public Meetings on Draft Plans
- Fourth IRP Stakeholder Meeting in May
- City Council Energy & Environment Committee Review of Results and Identification of a “Preferred Plan” in July

Questions or Comments?

IRP Website Address:

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

E-Mail: SCL.IRP@Seattle.gov

David Clement
(206) 684-3564

