

## II. SUMMARY CHARTS AND GRAPHS

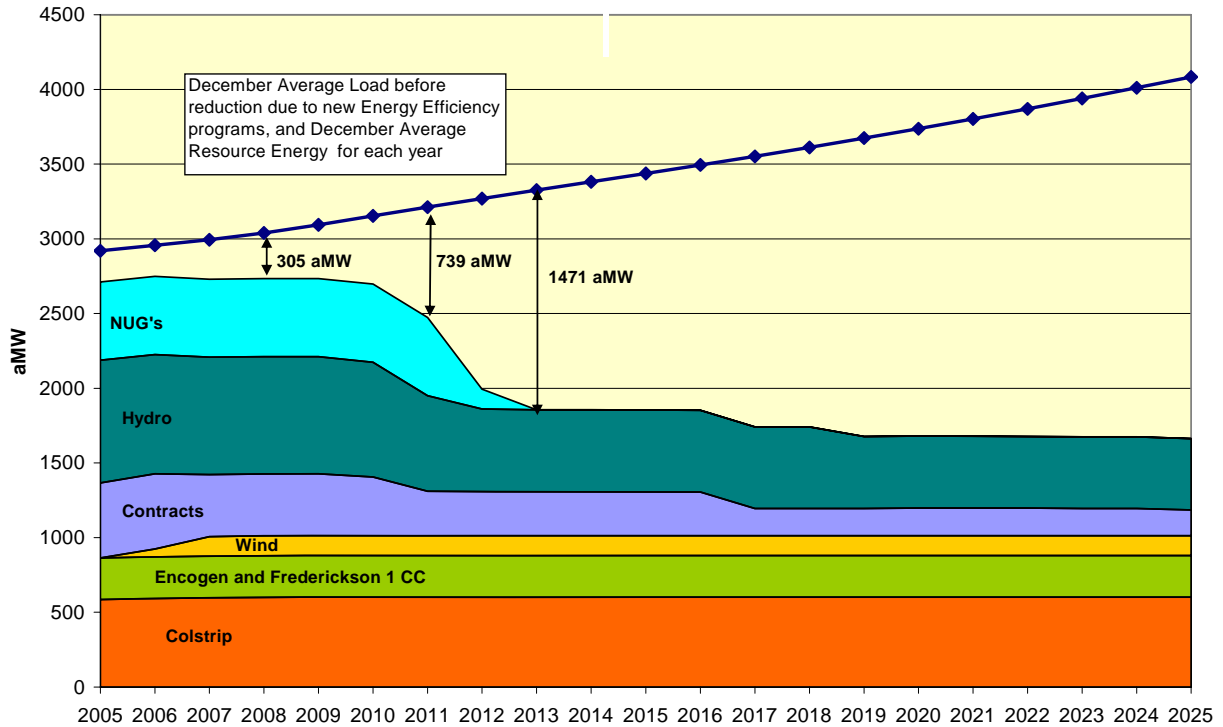
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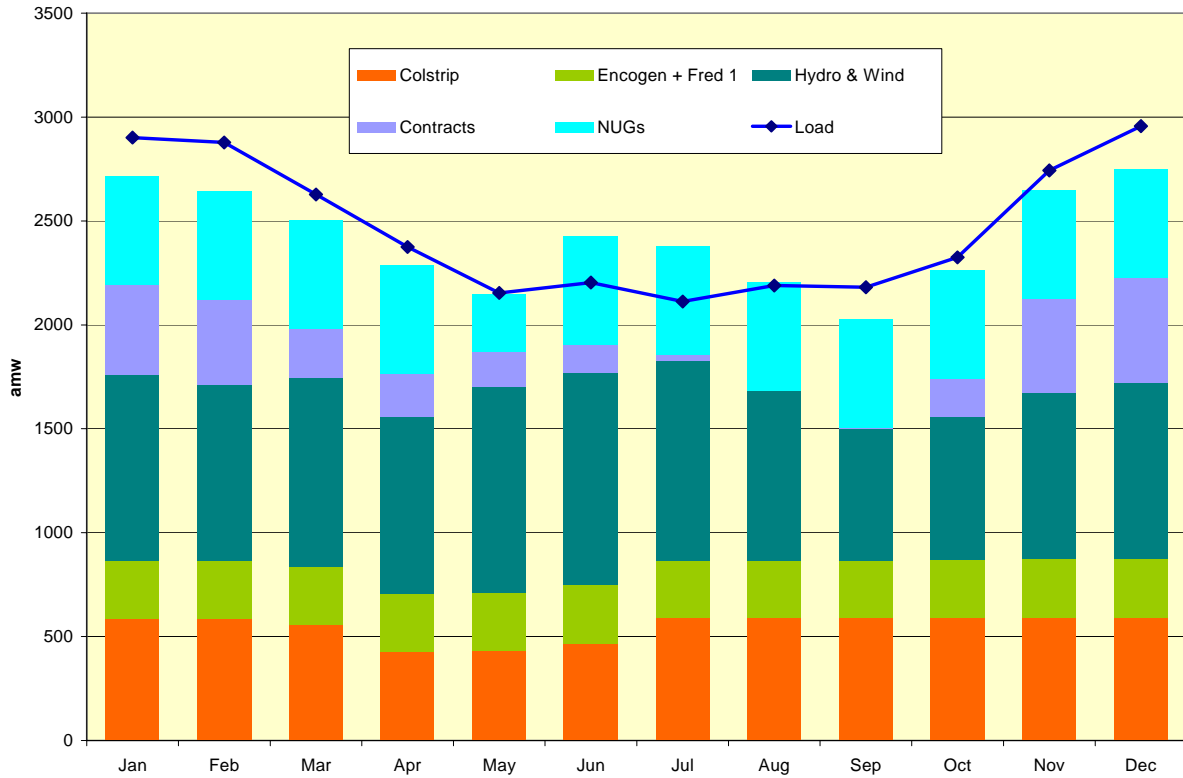
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## Exhibit II-1 Energy: 2006-2025 Load-Resource Balance



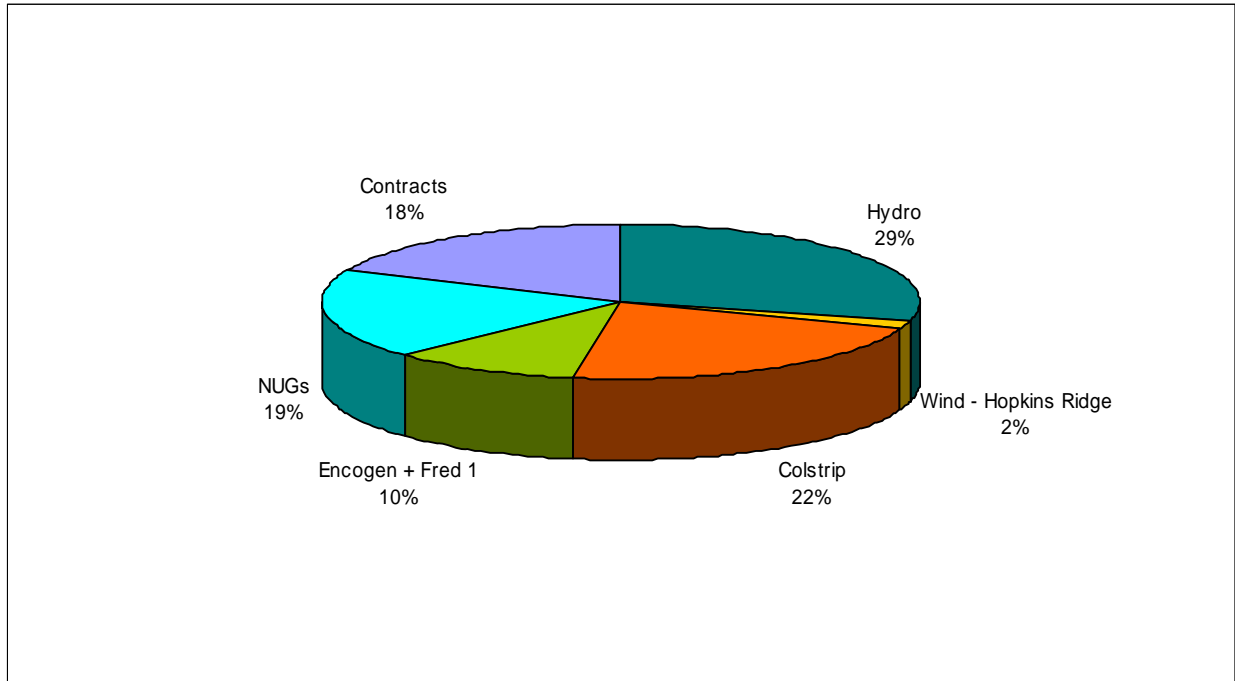
- Chart illustrates PSE's energy need
- Load growth is 1.8 percent per year
- The energy planning standard established in the 2003 LCP is continued in this plan
- Expiring NUG contracts include Sumas, Tenaska and March Point
- The forecast has not been reduced to account for new energy efficiency programs

## Exhibit II-2 2006 Monthly Load-Resource Balance



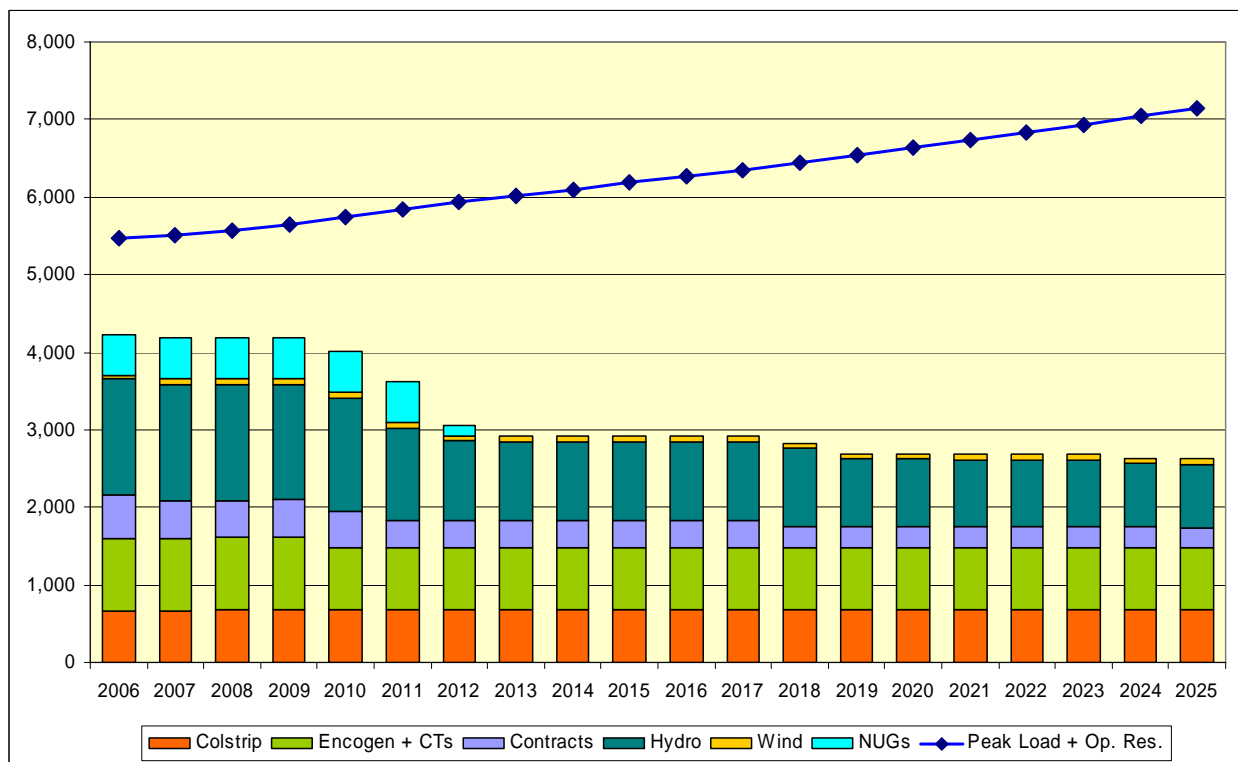
- Load and Resources are both higher in the winter season and lower in the summer season
- Balance shows net deficit in winter
- The forecast has not been reduced to account for new energy efficiency programs

### Exhibit II-3 December 2006 Supply Resource Mix



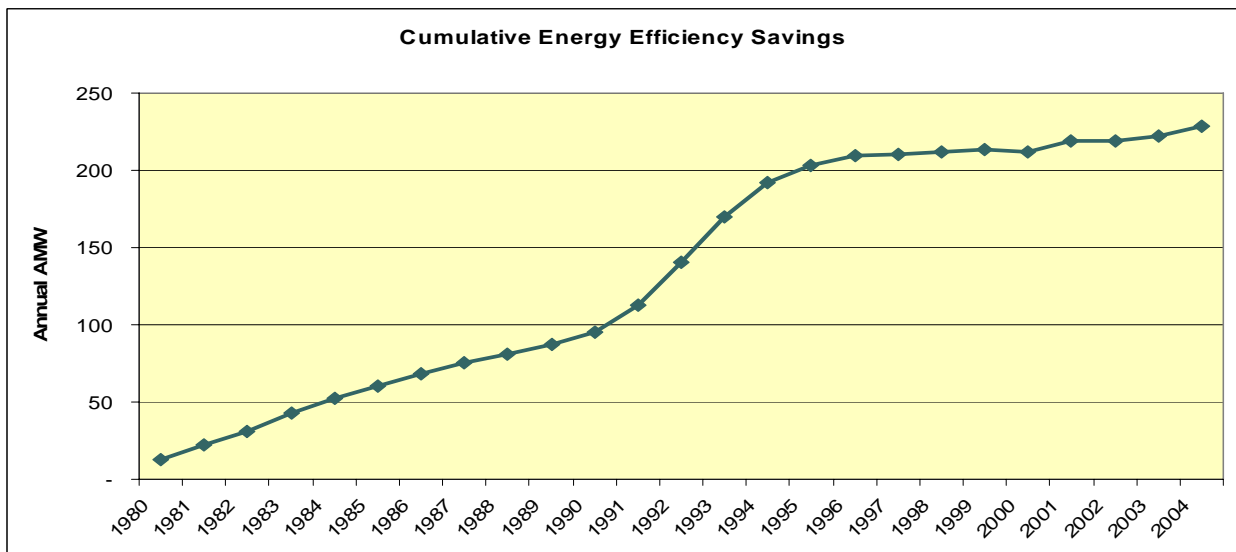
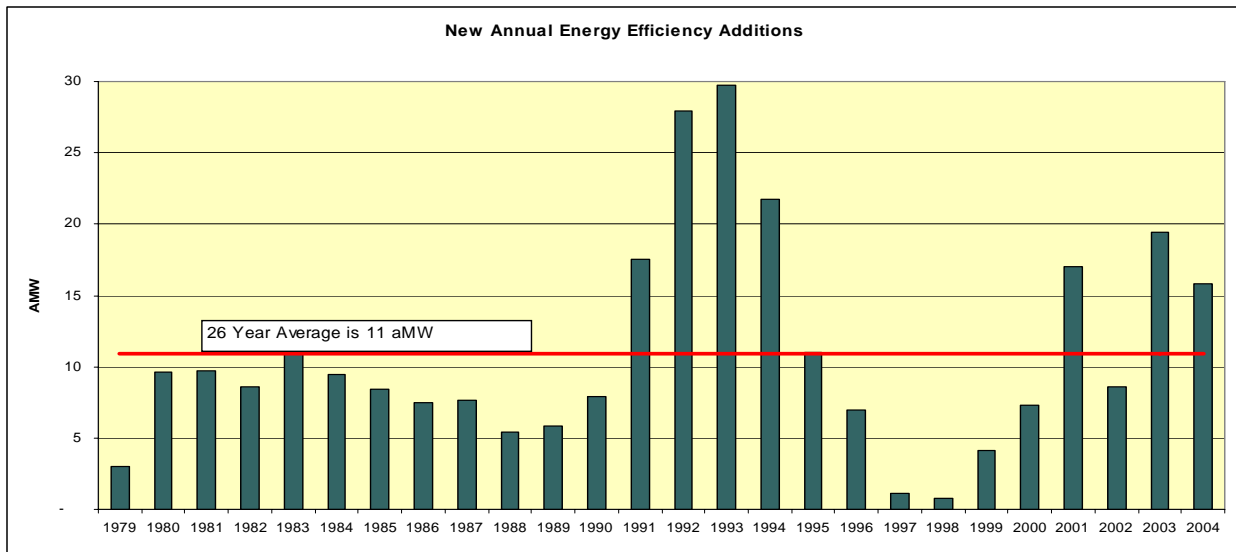
- Chart shows the share of average megawatts by source
- PSE has a diverse mix of supply resources today
- Frederickson 1, Encogen and non-utility generators (NUGs) are all natural gas fueled
- Contracts represent a mix of fuel types including hydro, natural gas and coal
- Wind percentage reflects only Hopkins Ridge but PSE expects to have 5 percent wind with the addition of Wild Horse by 2007

## Exhibit II-4 Peak: 2006-2025 Load-Resource Balance



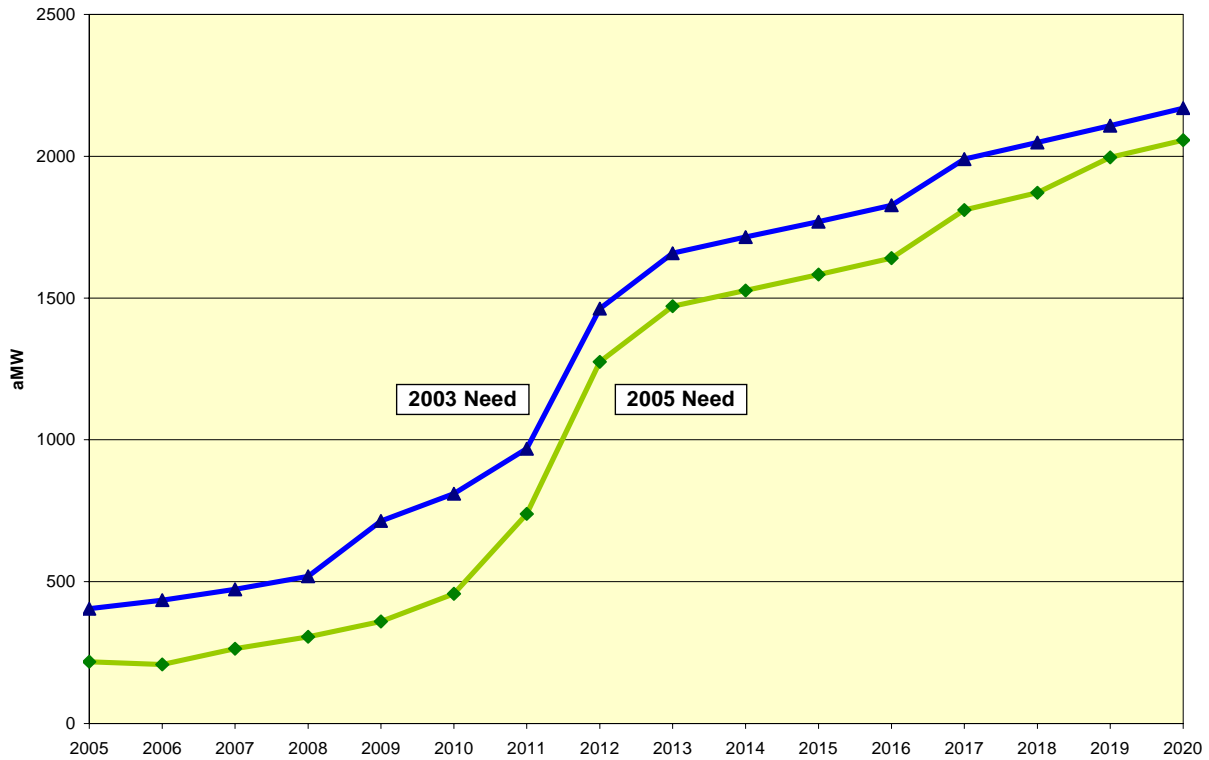
- Peak load is based on a 16 degrees planning standard
- Peak load includes operating reserves
- Resources include simple cycle combustion turbines
- Shortfall is currently met with a mix of firm winter supply contracts, winter call options, and market purchases
- The peak forecast has not been reduced to account for new energy efficiency programs

## Exhibit II-5 Historical Energy Efficiency Programs



- Upper chart shows energy efficiency savings added for each year
- Lower chart shows cumulative energy efficiency savings assuming an average measure life of twenty years
- Without energy efficiency programs, PSE's load would be approximately 10 percent higher

## Exhibit II-6 Reduced Need for New Resources: 2003 LCP vs. 2005 LCP

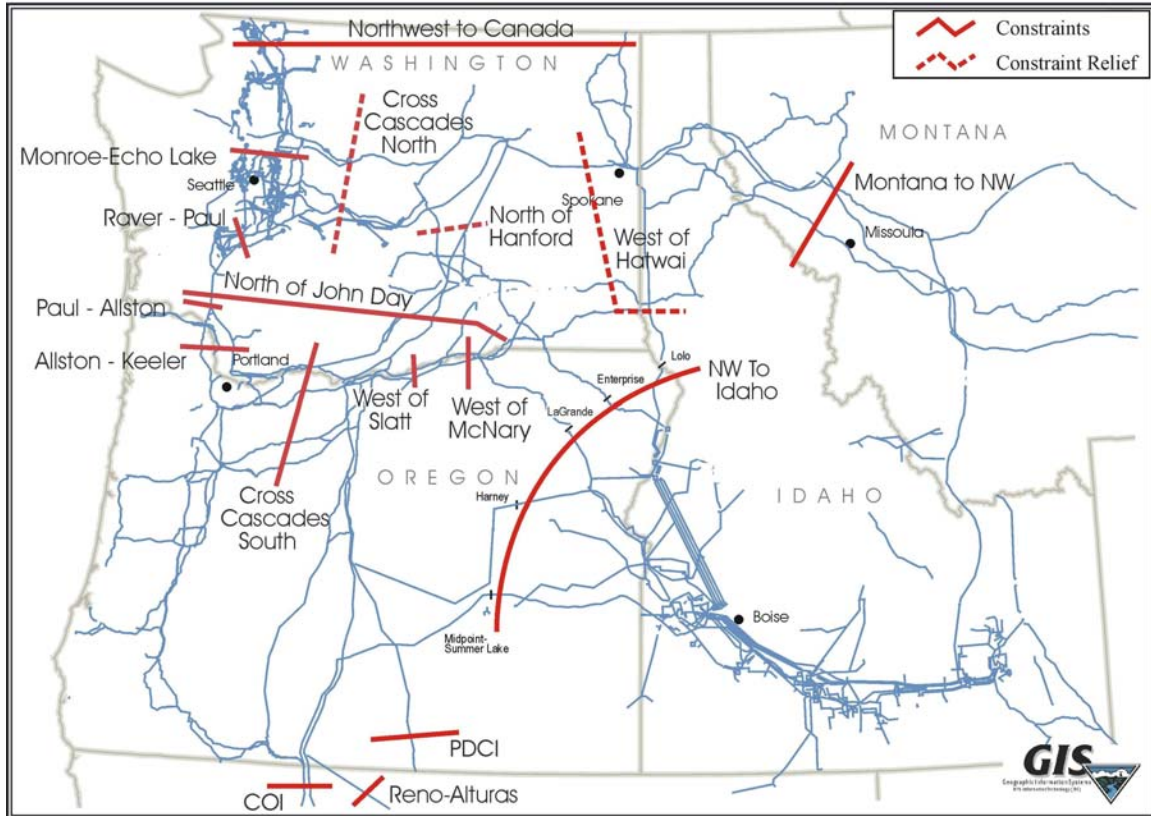


ACQUISITIONS SINCE APRIL 2003 LEAST COST PLAN		
PROJECT	CAPACITY	ENERGY
Frederickson 1	125 MW	123 aMW
Hopkins Ridge Wind	150 MW	52 aMW
Wild Horse Wind	229 MW	77 aMW
APS Purchase Contract	85 MW	85 aMW
Ormat Recovered Energy	5 MW	5 aMW
Colstrip Turbine Upgrade	28 MW	23 aMW
Energy Efficiency	79 MW	38 aMW
<b>TOTAL</b>	<b>701 MW</b>	<b>403 aMW</b>

- Energy efficiency for calendar years 2003-2004
- Resource additions are offset by higher load forecast and updated hydro assumptions

## Exhibit II-7 Transmission Cut Planes<sup>1</sup>

### 2005 NW Constraints

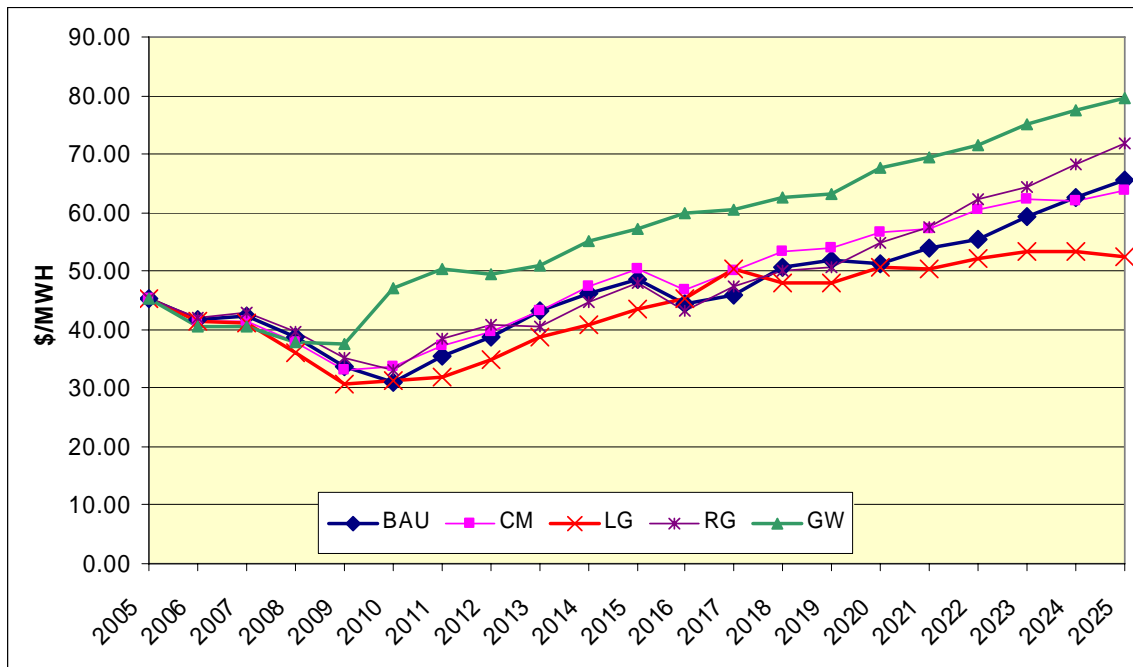


- Transmission constraints (“Cut Planes”) limit energy transmission into the Puget Sound Region
- Upgrades by BPA are primarily intended to meet and maintain its current obligations, not to provide for new bulk power transmission
- Recent upgrades include: West of Hatwai, North of Hanford, and Cross Cascades North

<sup>1</sup> Map used with permission from the Bonneville Power Administration.

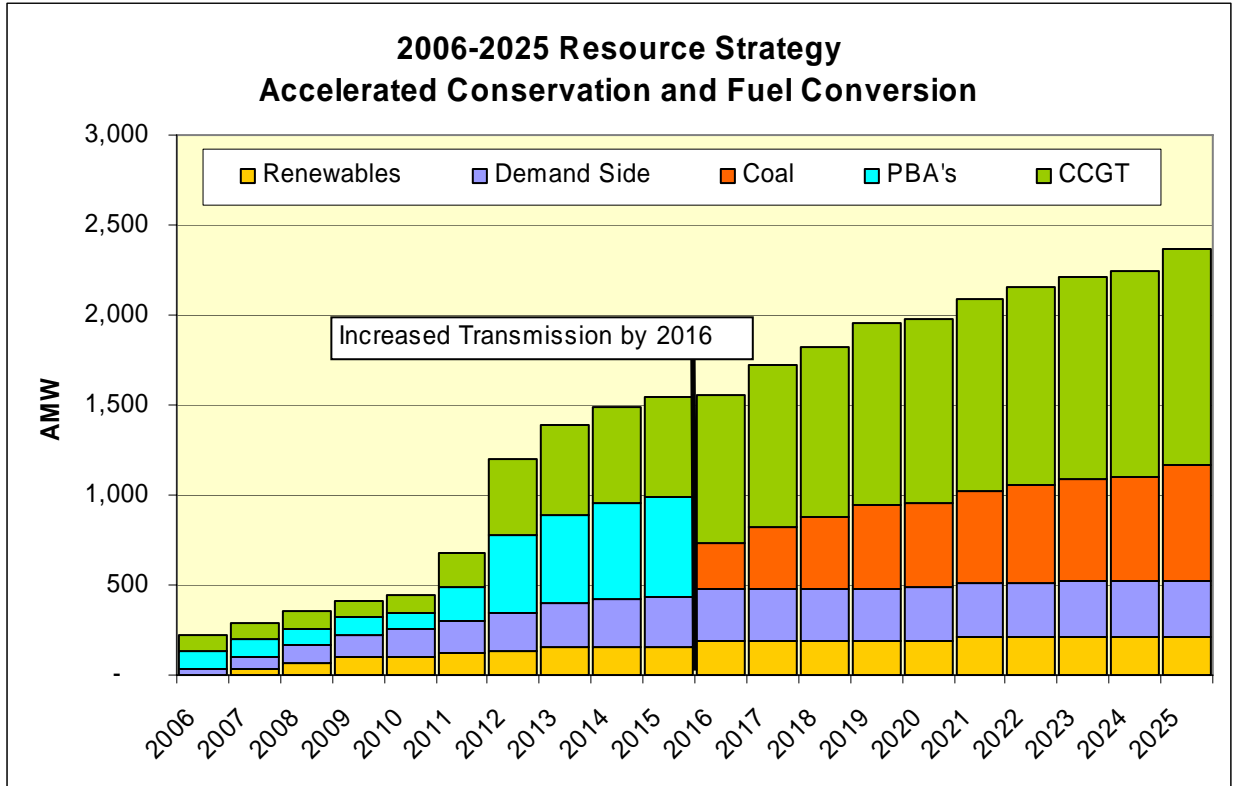


## Exhibit II-8 Electric Scenarios Price Forecasts



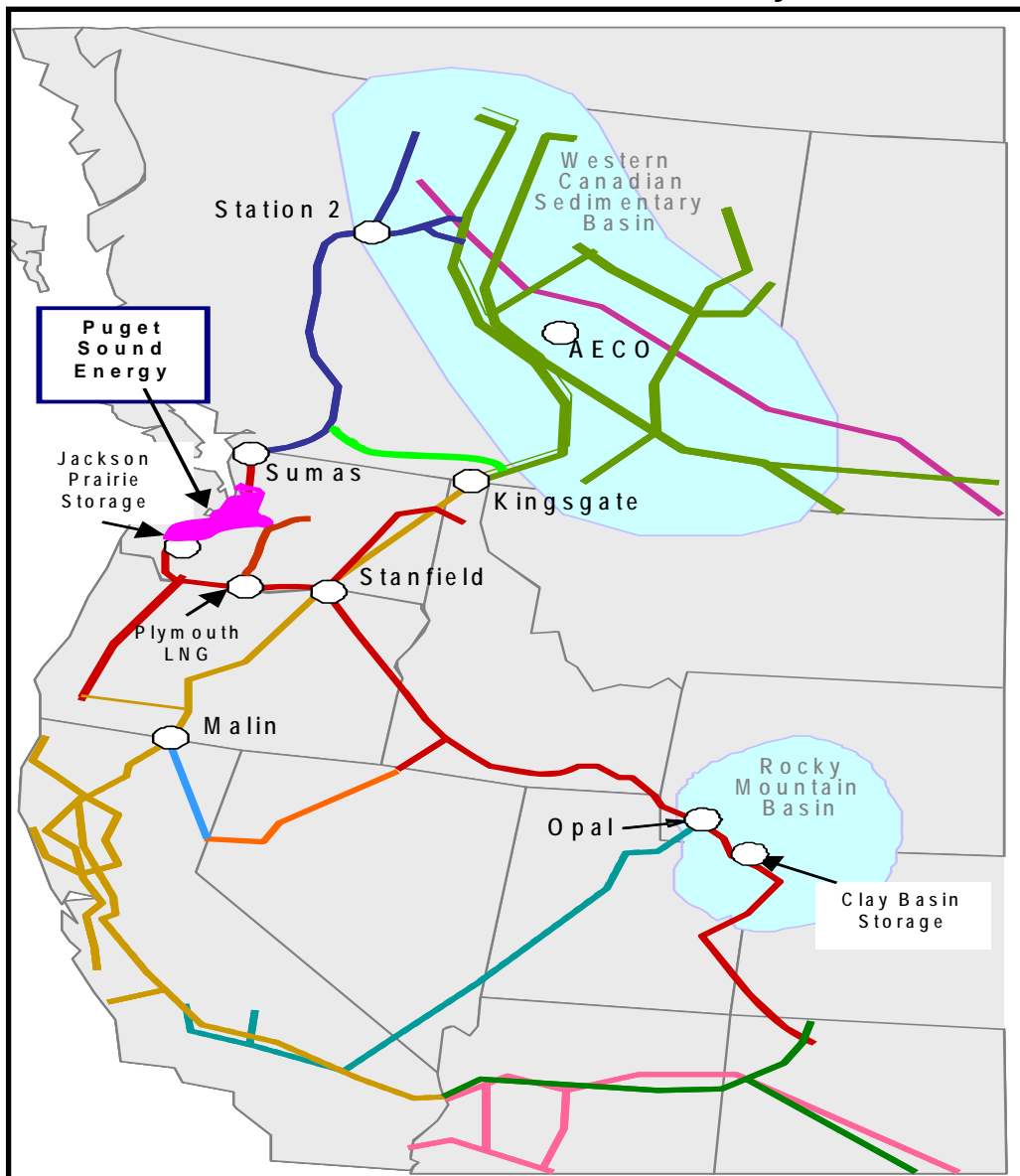
- Forecasts represent annual average price at Mid-C, based on average hydro and using the AURORA model
- Business as Usual (BAU), Current Momentum (CM) and Robust Growth (RG) are all based on the CERA Rearview Mirror gas forecast
- Green World (GW) is based on the CERA Shades of Green gas forecast with relatively higher prices
- Low Growth (LG) is based on the CERA World in Turmoil with relatively lower gas prices

## Exhibit II-9



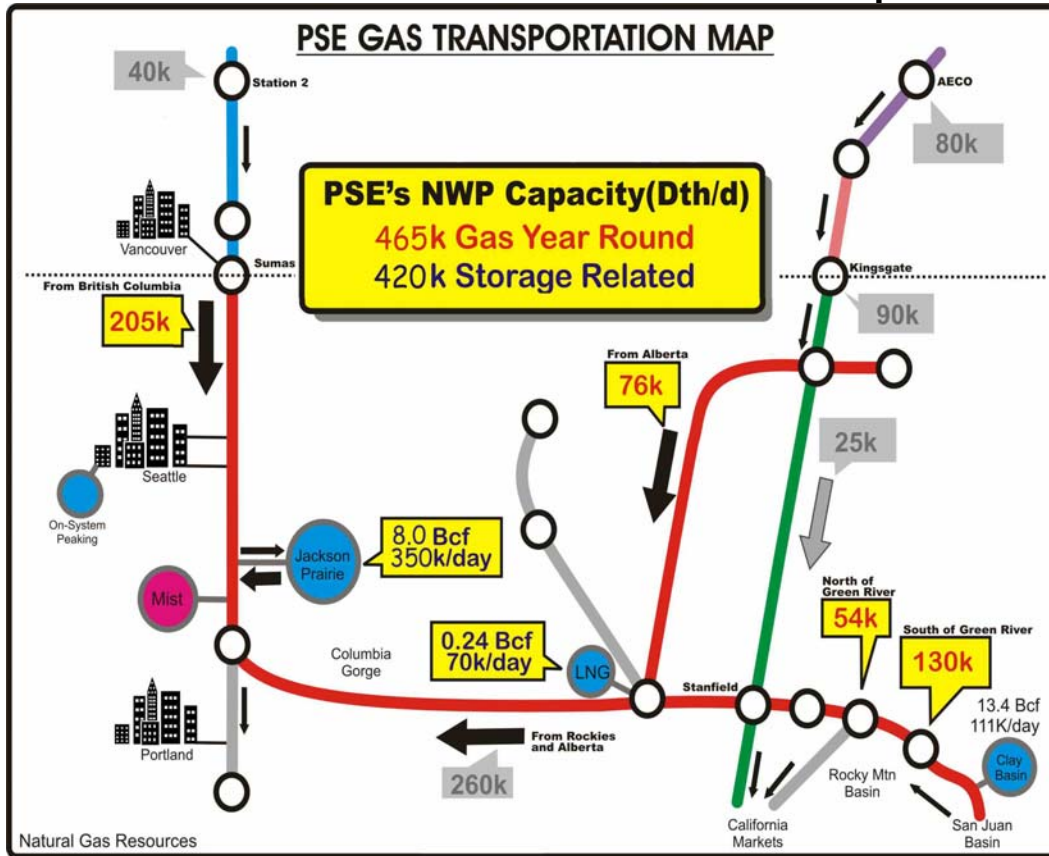
- 10 percent renewable energy goal by 2013
- Demand Side category includes accelerated energy efficiency and early fuel conversion
- 50/50 mix of gas-fueled assets and Power Bridging Agreements until transmission is constructed
- 50/50 mix of gas-fueled and coal-fueled assets when transmission is available

## Exhibit II-10 Pacific Northwest Gas Industry



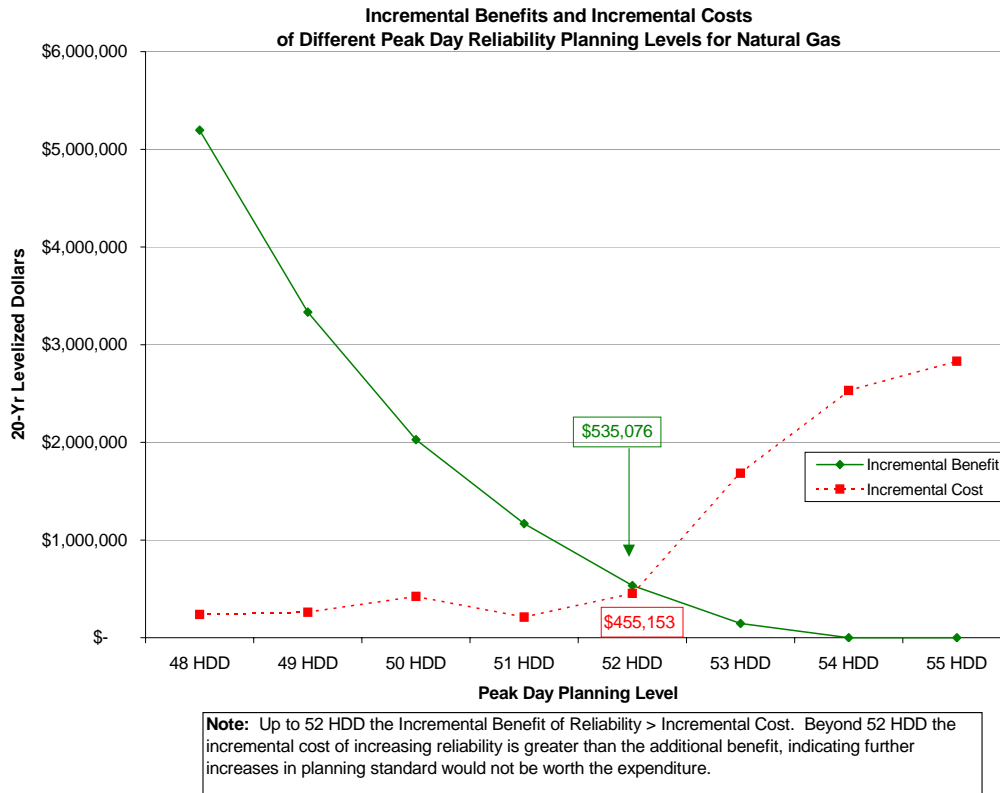
- PSE currently acquires gas supply from British Columbia at both Station 2 and Sumas, from Alberta at AECO, and from the Rocky Mountain region in Southwestern Wyoming, Colorado and Utah.
- As gas suppliers decontract for transportation capacity on Westcoast Pipeline from Station 2 to Sumas, PSE anticipates having to acquire additional upstream capacity in Canada to buy gas directly at Station 2 or across the Southern Crossing pipeline and up to AECO in Alberta.

**Exhibit II-11  
PSE's Gas Sales Portfolio Resource Map**



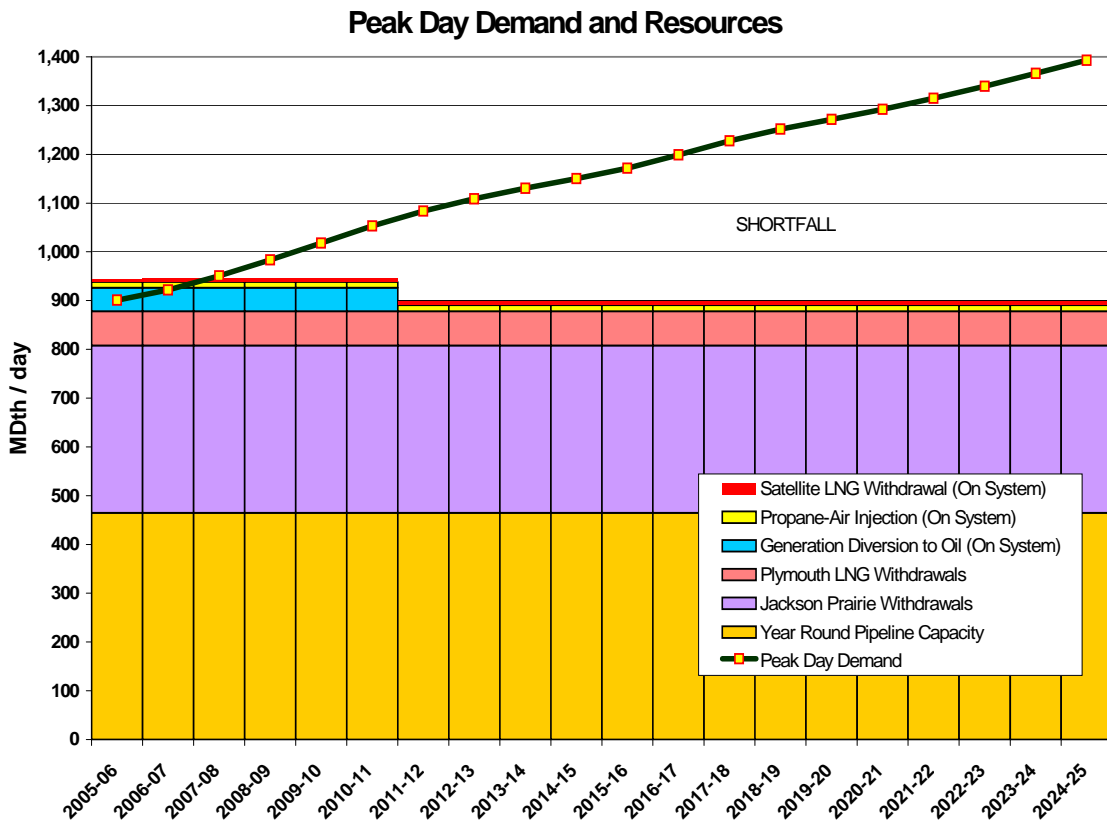
- Overview of PSE's firm transportation and storage capacity. The red lines indicate transportation capacity on Northwest Pipeline.
- Transport from Rocky Mountain region is 130 MDth/day + 54 MDth/day or 184 MDth/day, total.
- From Alberta, 76 MDth/day flows on Northwest Pipeline's Spokane lateral, for a total of 260 MDth/day of capacity through the Columbia River Gorge to PSE's loads.
- Transport from Sumas to PSE's sales load is 205 MDth/day.
- Seasonal transport capacity of 350 MDth/day from Jackson Prairie and 70 MDth/day from the Plymouth LNG storage facility is used to deliver gas to PSE's gas sales loads.
- PSE holds 40 MDth/day on Westcoast pipeline to transport gas from Station 2 to Sumas. PSE holds 80-90 MDth/day on TransCanada's BC, Alberta and GTN systems to move gas from Alberta.

## Exhibit II-12 Determination of PSE's Peak Day Planning Standard



- Benefit/Cost analysis indicates 52 HDD (13<sup>o</sup> F average daily temperature) is PSE's efficient peak-day planning standard.
- Incremental cost of reliability is estimated as the 20-year optimized portfolio cost of meeting colder planning standards from 48 HDD to 54 HDD (17<sup>o</sup> to 11<sup>o</sup>).
- Incremental benefit of reliability is estimated as the cost of avoided outages for each planning standard.
- Benefit of avoiding outages based on customer's value of avoiding an outage, the cost of relights, and lost revenue.
- Probabilistic analysis in that the benefit of avoiding an outage is weighted by the probability that temperatures would fall below each planning standard examined.
- See Appendix I for additional information.

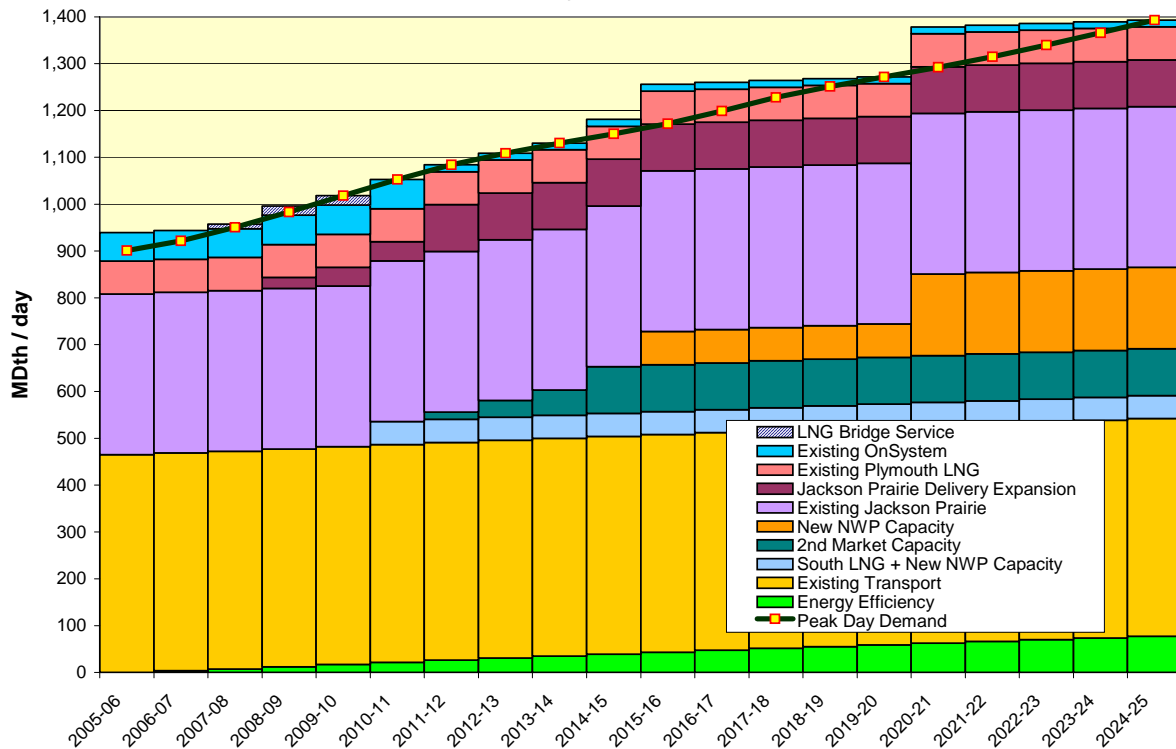
## Exhibit II-13 Natural Gas Load/Resource Balance—Base Case



- This chart shows how the Company’s existing resources would be used to meet design peak loads.
- Under the Base Case design day forecast scenario, peak demand on a 52 HDD is expected to exceed the Company’s capacity to deliver gas to customers by the winter heating season of 2007/08.

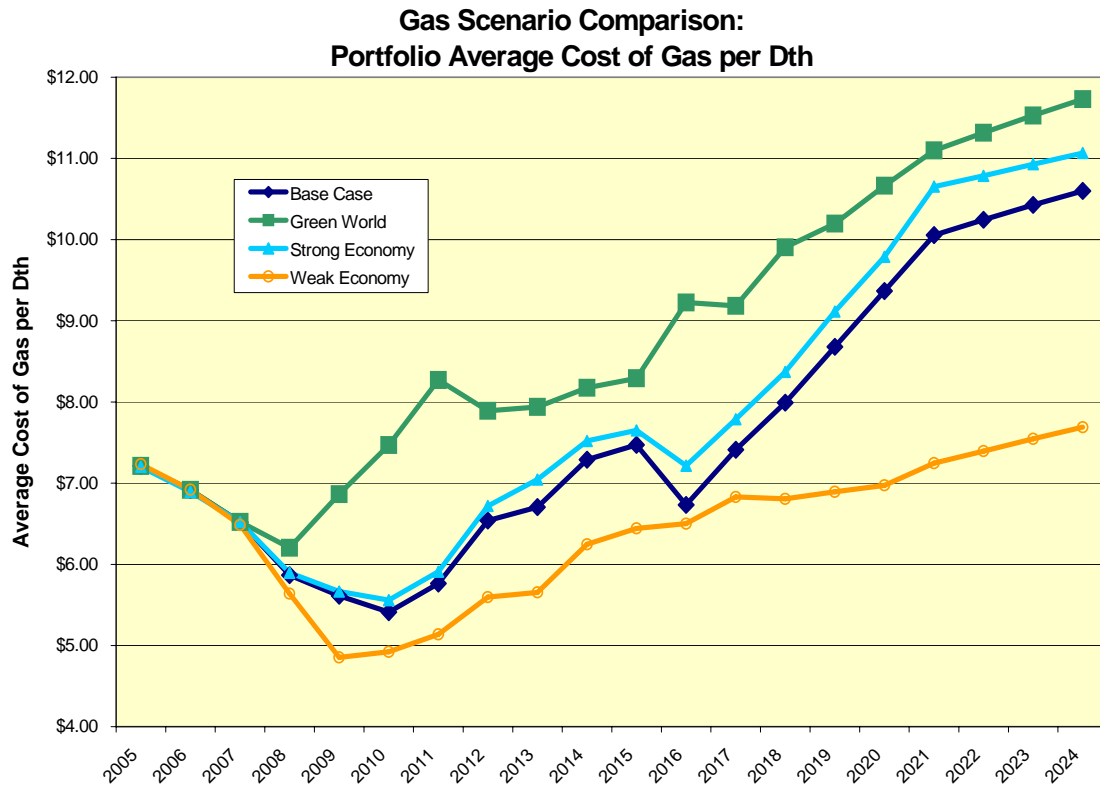
## Exhibit II-14 Optimized Portfolio—Base Case

**Base Case- Peak Day Demand and Resources**



- Through 2015, resources were assumed to be very incremental, that is, small amounts of capacity were assumed available to demonstrate how the Company would like to acquire resources. Since capacity projects are generally lumpy, this is not a realistic portrayal of how PSE could actually acquire resources.
- This optimized approach, while not attainable, does provide guidance for acquisition of actual resources by identifying the optimal theoretical adding of resources and the related cost.
- The lumpiness shown in the period beyond 2015, where the Company has to acquire resources in lumps before it is needed, is more indicative of what PSE’s physical position will look like in the 2006-15 period, based on actual acquisitions.

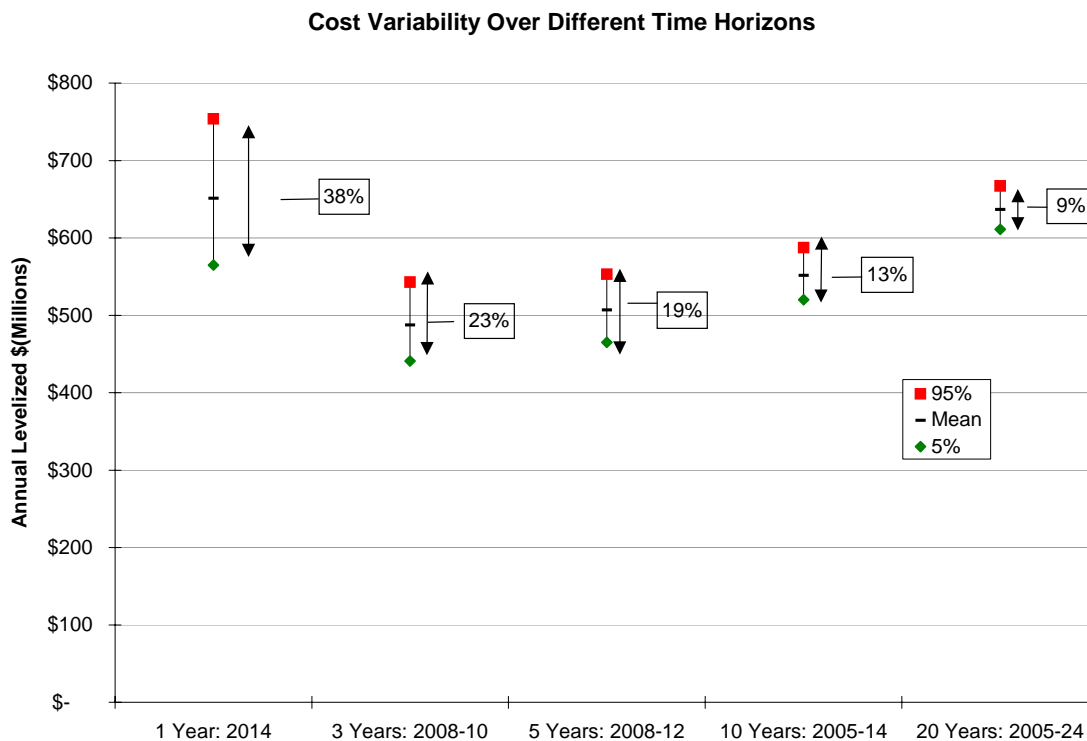
## Exhibit II-15 Range of Costs-Optimal Portfolios Across Scenarios



- Differences in average portfolio costs are driven by differences in underlying gas price forecasts and the fixed costs of resources needed to meet the different demand forecasts.
- This chart includes more resource costs than typically included in the Company's Purchased Gas Adjustment (PGA) rates, so is not a good projection of rates in the future. However, it does provide a reasonable trend based on planning assumptions and analysis in this Plan.



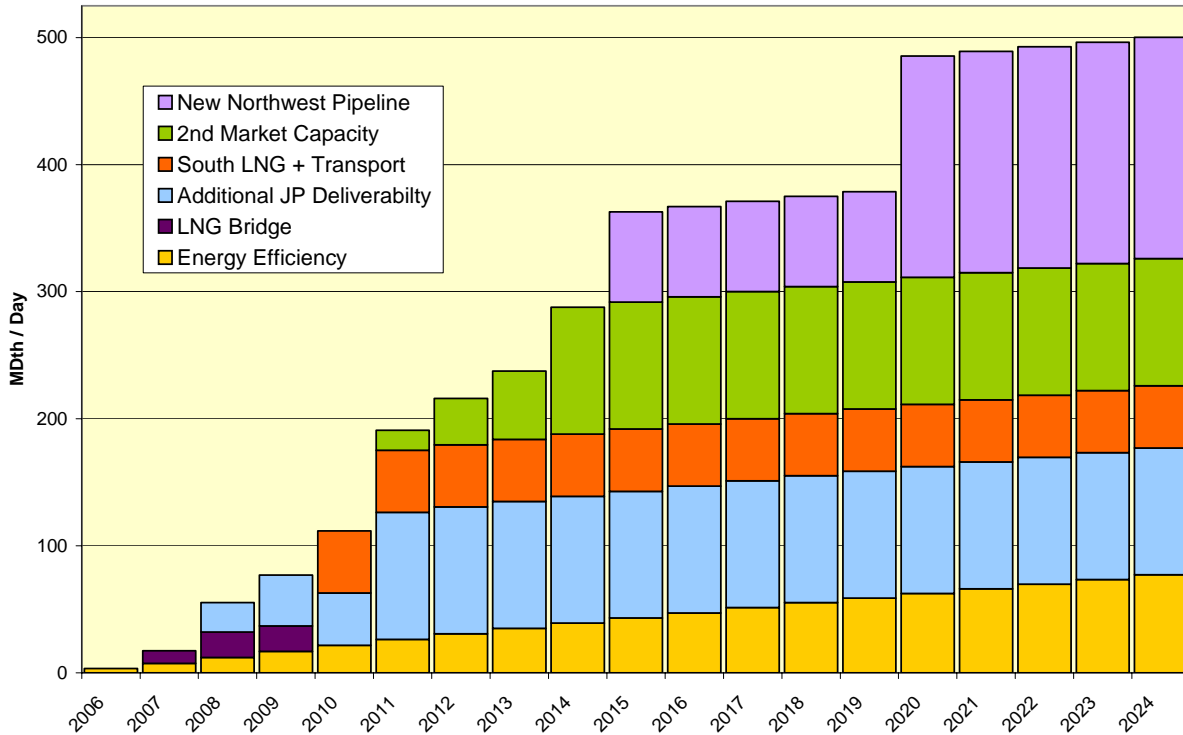
## Exhibit II-16 Results of Base Case Monte Carlo Analysis



- Over the long-term, risk factors in this gas analysis tend to cancel each other out. As more time is considered, there is a greater chance that high market prices will be offset by potential low market prices in the future.
- Over a 20-year period, the range between the 5<sup>th</sup> and 95<sup>th</sup> percentile is only 9 percent but cost variability for just one year (in this case, 2014) is 38 percent.

## Exhibit II-17 2006-2024 Gas Resource Strategy

**2006-2024 LDC Gas Resource Strategy**



- Consider expanded Energy Efficiency programs
- Arrange for Jackson Prairie deliverability expansion
- Interest in import LNG, if appropriately located
- Additional year-round pipeline capacity will be needed