

Power Production and CO₂ A Utility Perspective

October 28, 2008



PUGET SOUND ENERGY

The Energy To Do Great Things

PSE's Current Electric Resources

Generation within Service Territory
 1,656 MW Capacity
 912 aMW Energy

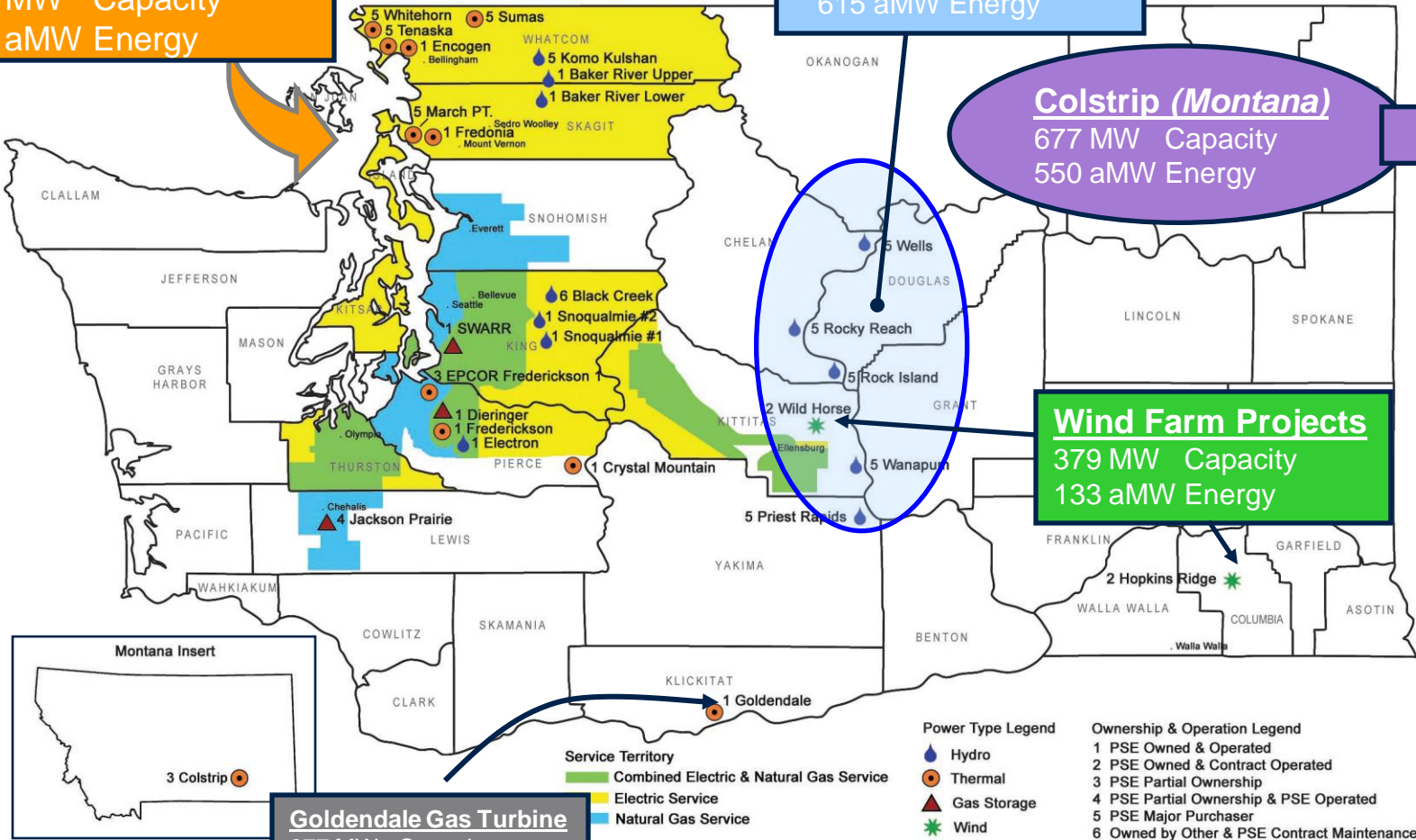
Mid-Columbia Hydro
 1,164 MW Capacity
 615 aMW Energy

Colstrip (Montana)
 677 MW Capacity
 550 aMW Energy

800+ miles

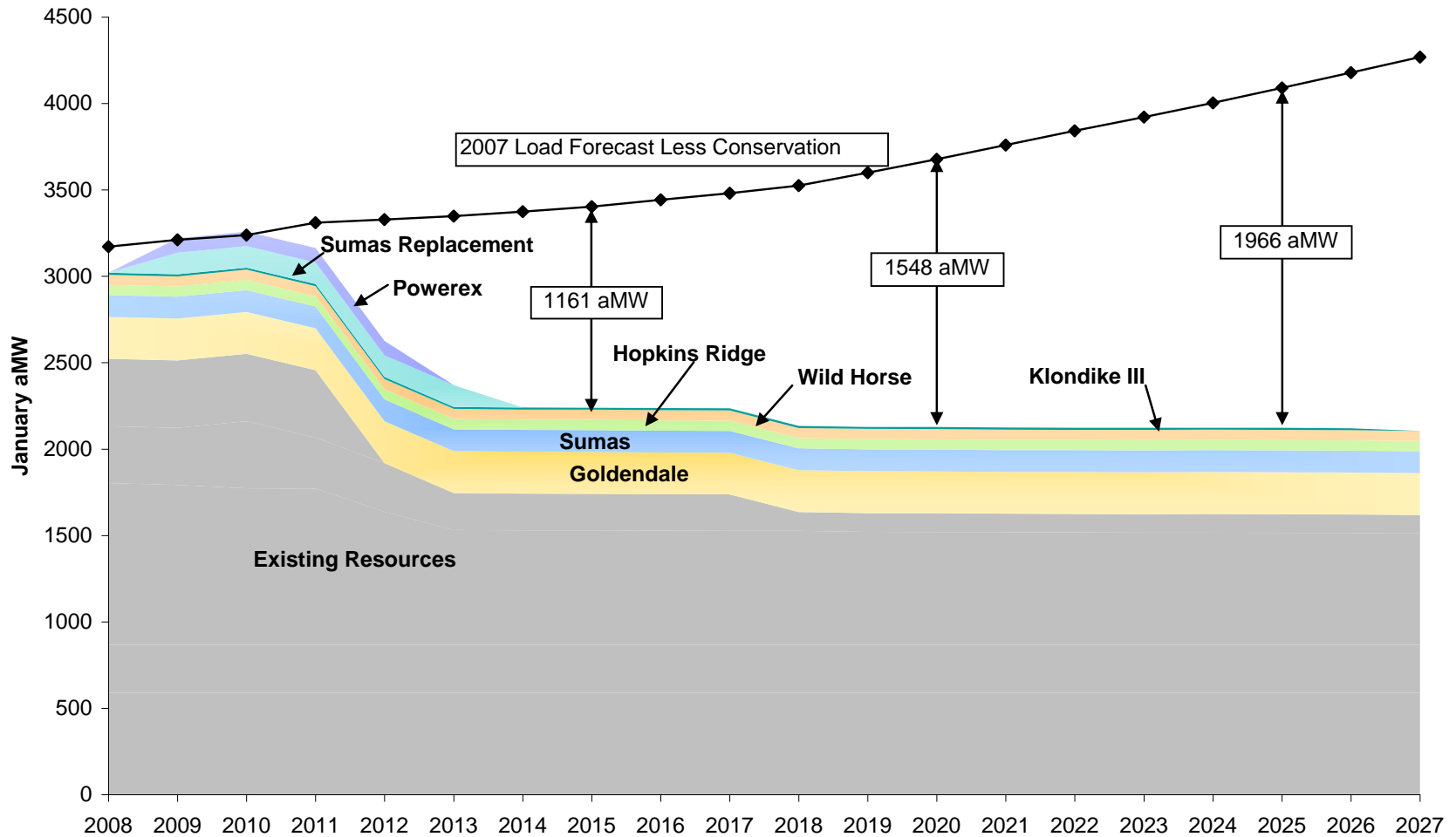
Wind Farm Projects
 379 MW Capacity
 133 aMW Energy

Goldendale Gas Turbine
 277 MW Capacity
 272 aMW Energy



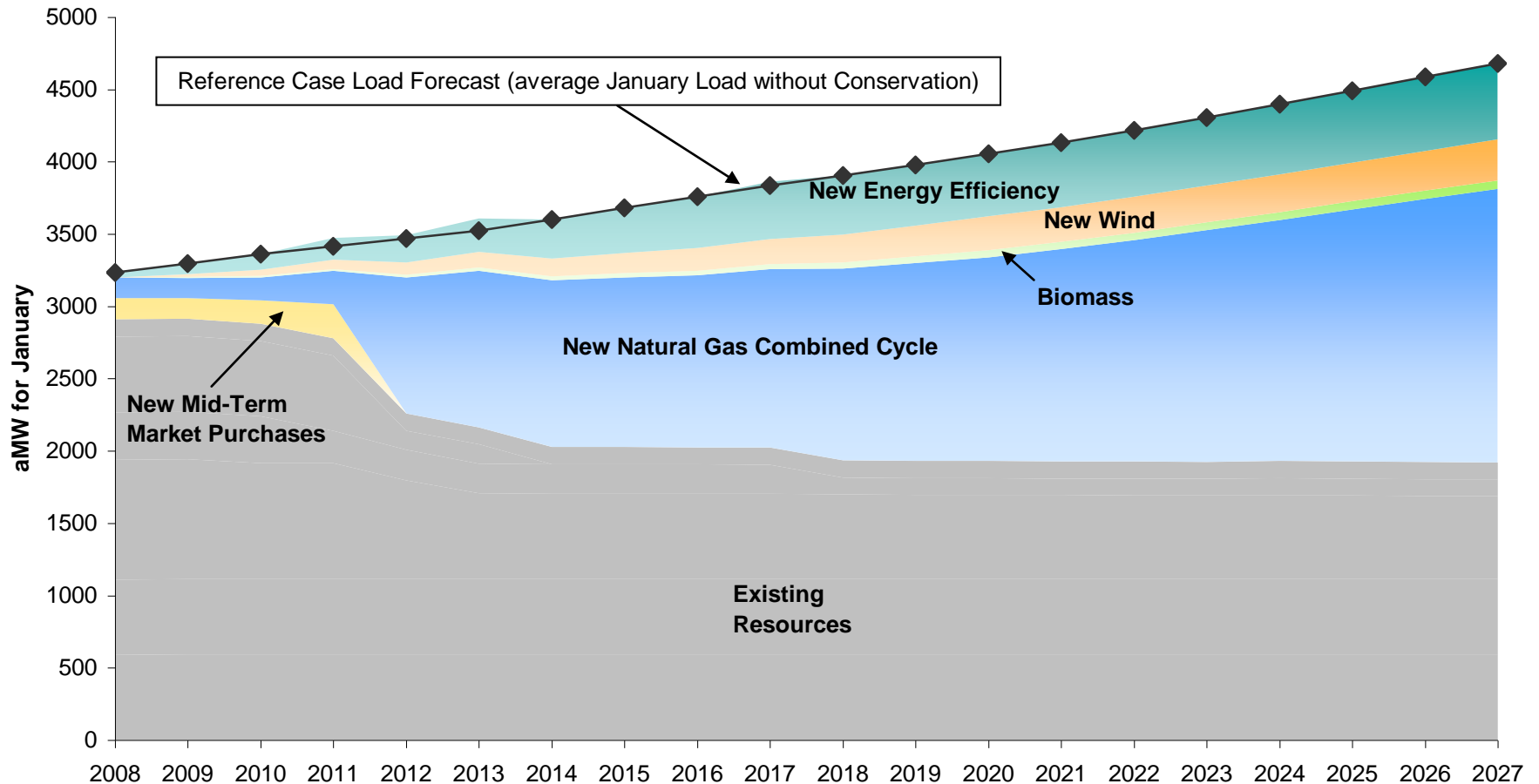
- Power Type Legend**
- Hydro
 - Thermal
 - ▲ Gas Storage
 - ★ Wind
- Ownership & Operation Legend**
- 1 PSE Owned & Operated
 - 2 PSE Owned & Contract Operated
 - 3 PSE Partial Ownership
 - 4 PSE Partial Ownership & PSE Operated
 - 5 PSE Major Purchaser
 - 6 Owned by Other & PSE Contract Maintenance

PSE Has A Significant Energy Need



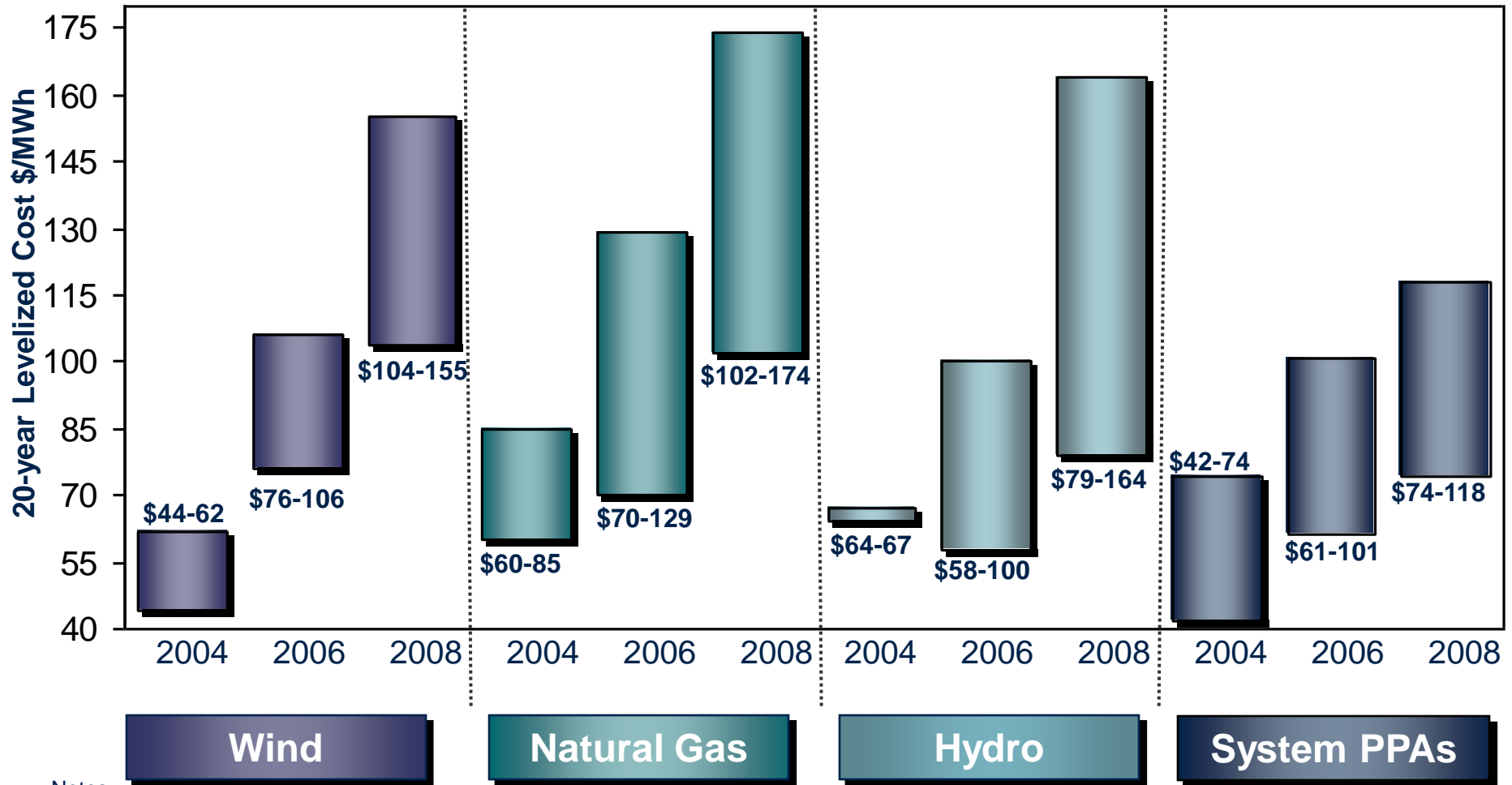
*Energy need after conservation, includes new contracts, new wind and hydro shapes, and Sumas

PSE's 2007 Resource Strategy



*Lowest Reasonable Cost Resource Portfolio, from May 2007 Integrated Resource Plan

Resource Cost Comparison



Notes:

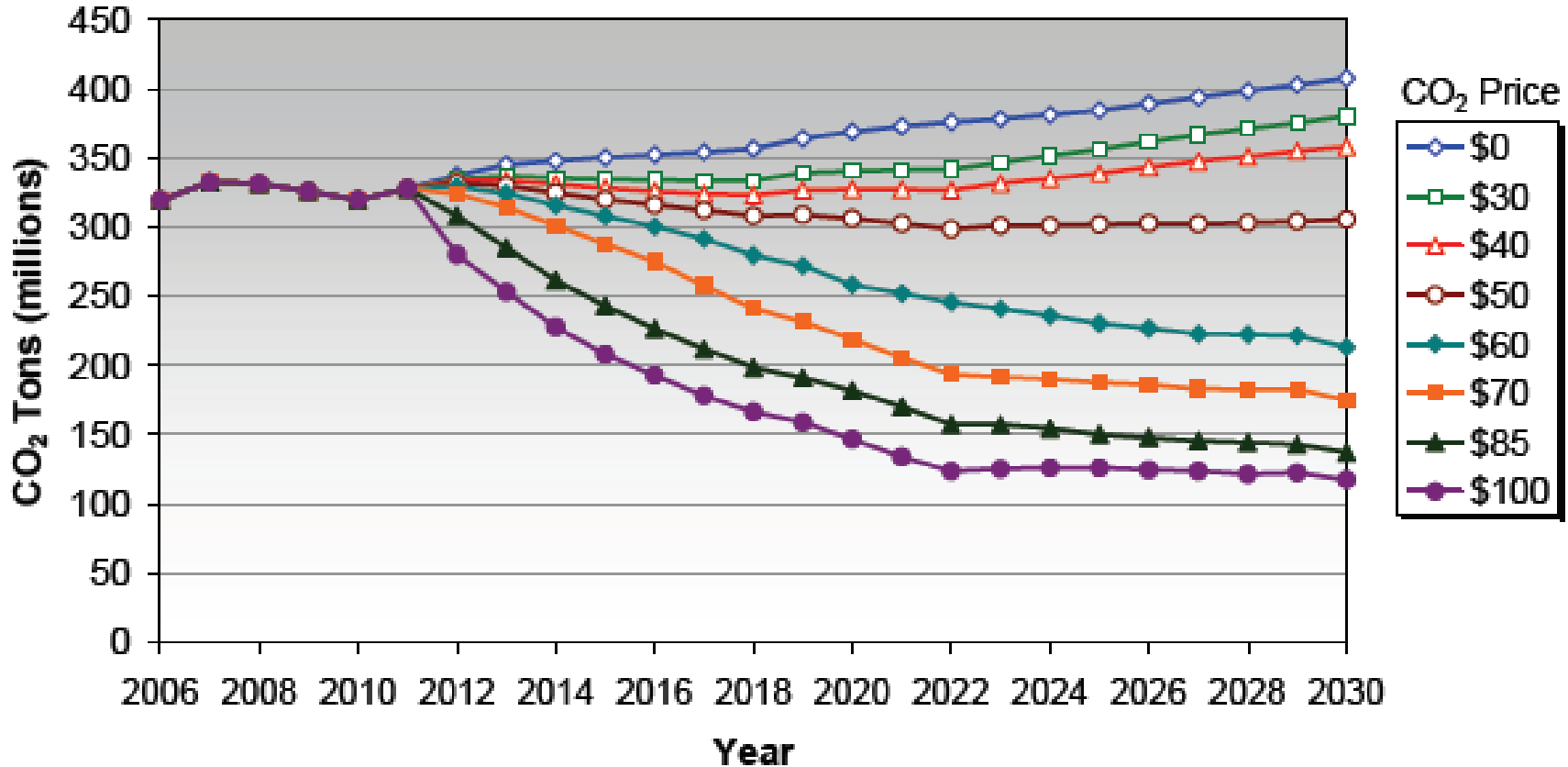
2004 prices represent Mid-C delivery.

2006 and 2008 prices represent deliveries to PSE's system

System PPAs are offers that are shorter term in nature and not tied to a specific resource.

WECC Study on of CO2 Price Effects

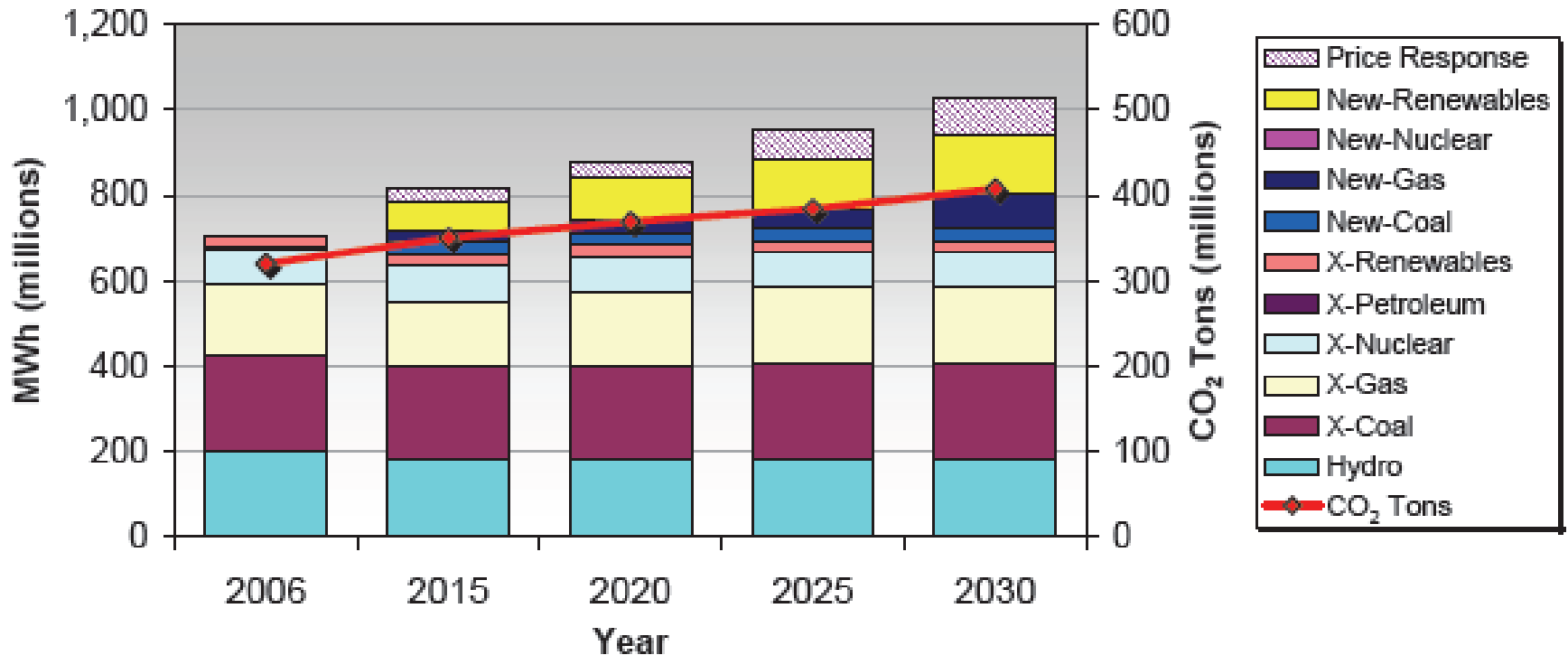
WECC Reference Case CO₂ Tons



Source: EPRI

EPRI Results - \$0/ton CO2 Price

WECC Reference Case – Electricity Supply by Source
(CO₂ Price at \$0/ton)

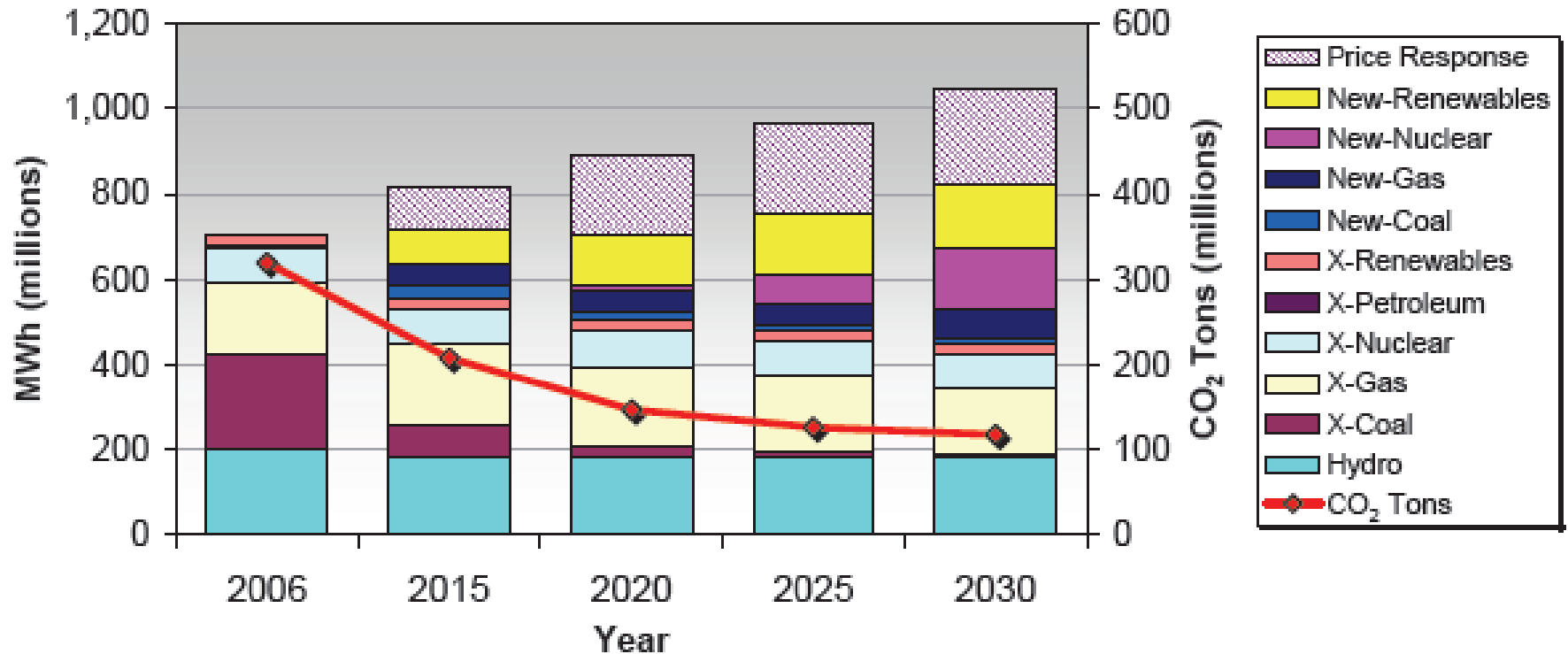


- Renewables growth keeps pace with demand; gas growth in later years
- Post-2015, existing generation is not backed out; emissions increase

Source: EPRI

EPRI Results - \$100/ton CO₂ Price

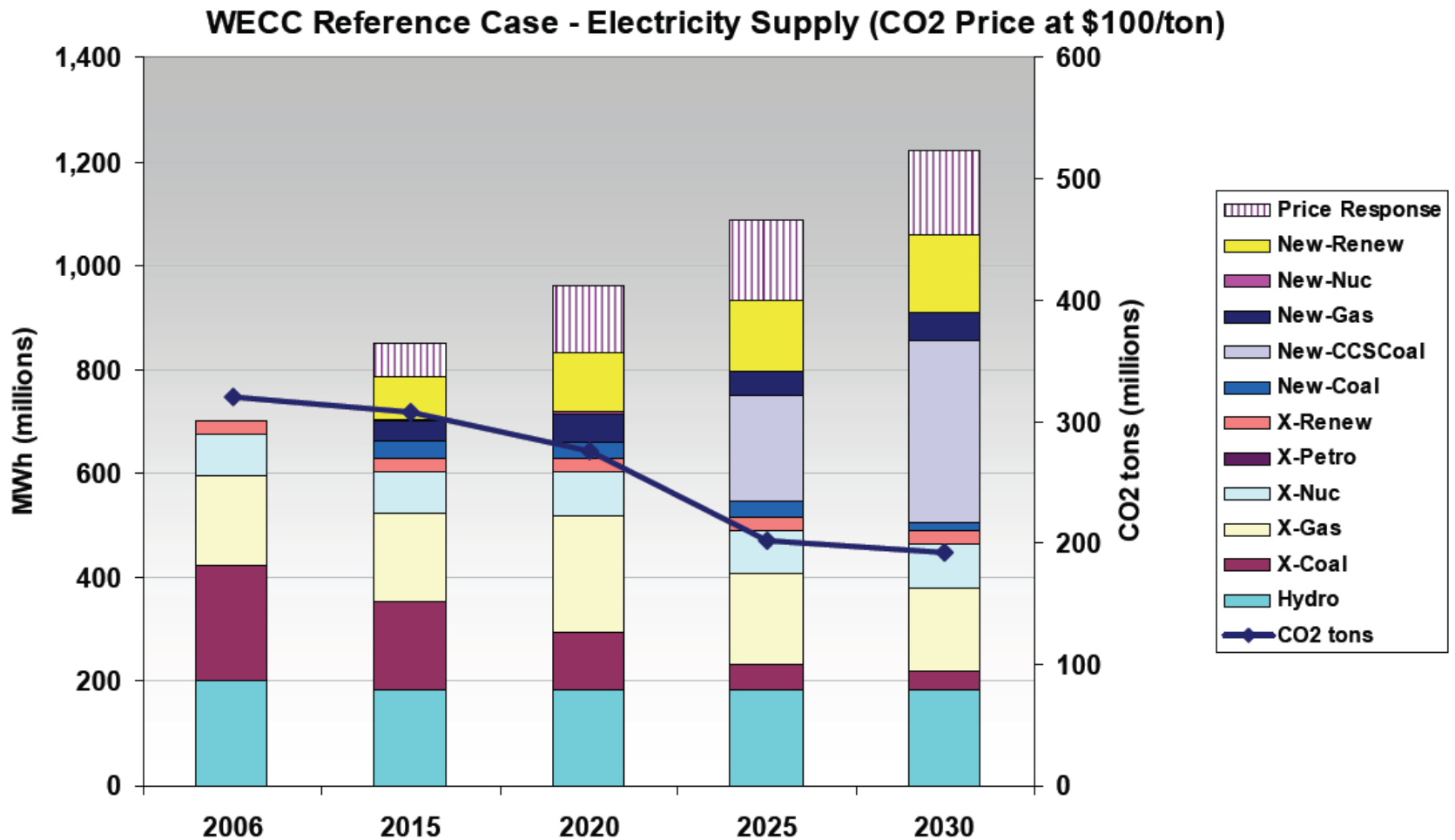
WECC Reference Case – Electricity Supply by Source
(CO₂ Price at \$100/ton)



- X-coal generation essentially disappears at this price
- Again price response slows down in later years; emissions shrinkage flattens out a bit

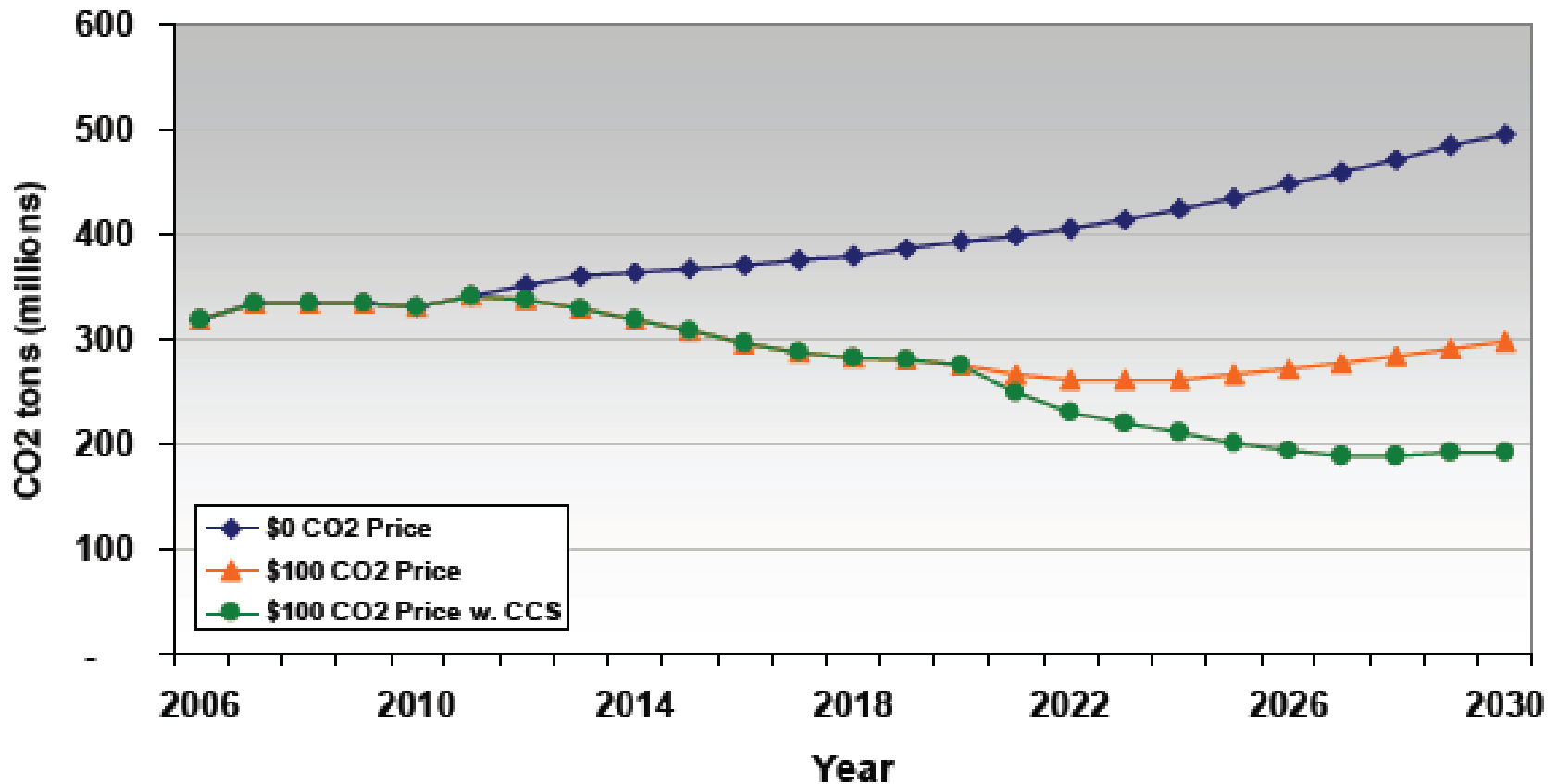
Source: EPRI

CCS Emerges with High Growth and Prices



CCS Reduces Emissions

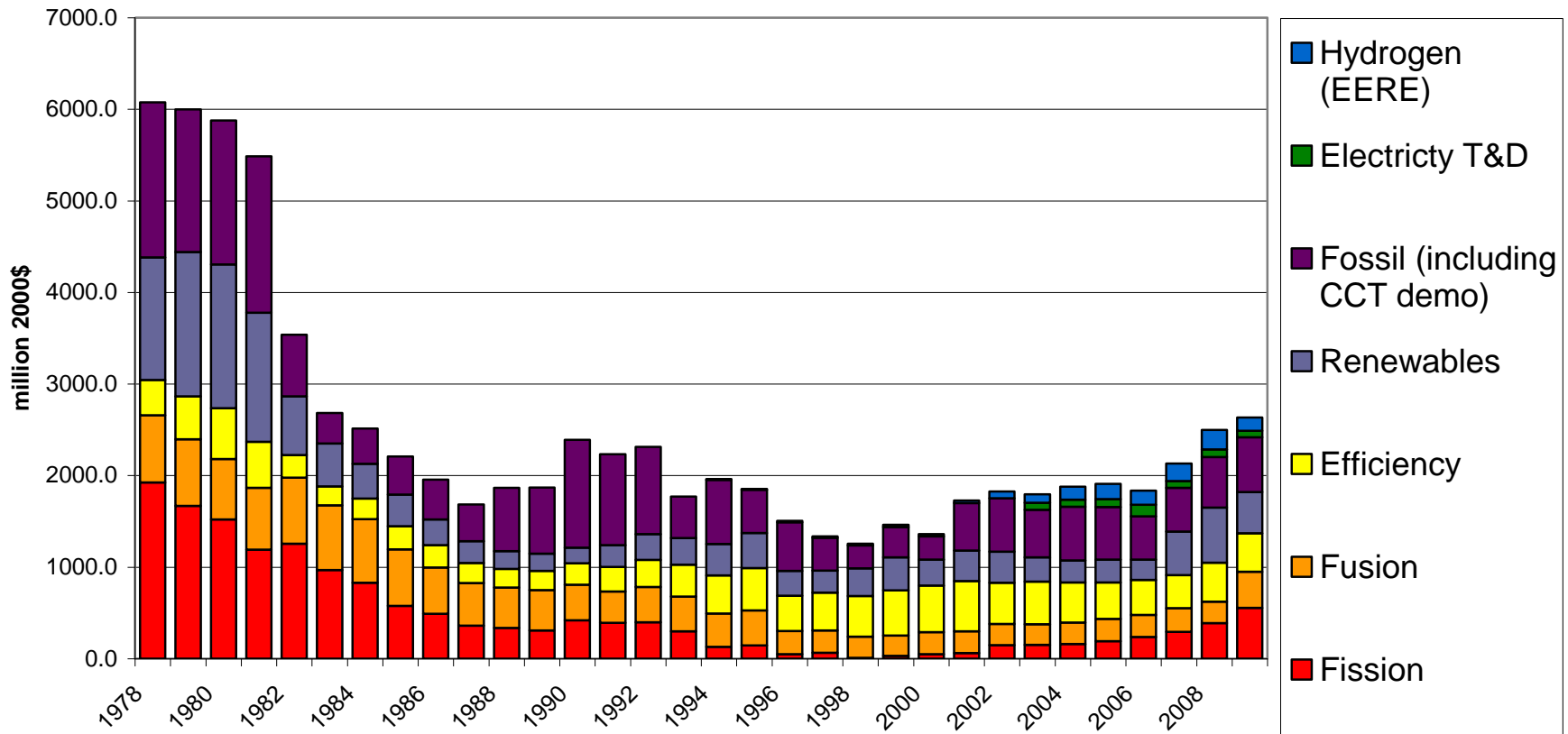
Impact of CCS R&D Success on Emissions for \$100 CO2 Price Scenario



Source: EPRI

Basic Research Funding

U.S. DOE Energy RD&D Spending FY1978-FY2009 Request



Source: Gallagher, K.S., "DOE Budget Authority for Energy Research, Development, and Demonstration Database," Energy Technology Innovation Policy, John F. Kennedy School of Government, Harvard University, February 2008.

Improving CO₂ Sequestration in Utility Planning

- ◆ Clear Timelines and Progress
- ◆ Consistent Long-Term Policy and Funding
- ◆ Clear Current Costs and Cost Projections
- ◆ Partnerships & Stakeholder Outreach
- ◆ Legal Framework for CCS in place



END

PSE CO₂ Cost Planning

Emissions Prices

