



# Market Monitoring Report

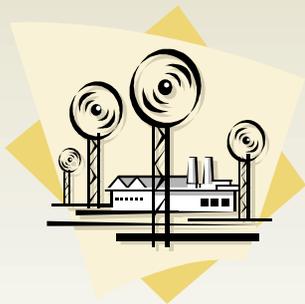
Jeff McDonald, Ph.D.  
Manager, Monitoring and Reporting

ISO Board of Governors Meeting  
General Session  
May 18, 2009

# Highlights from 2008 Annual Report on Market Issues and Performance



Markets & Costs

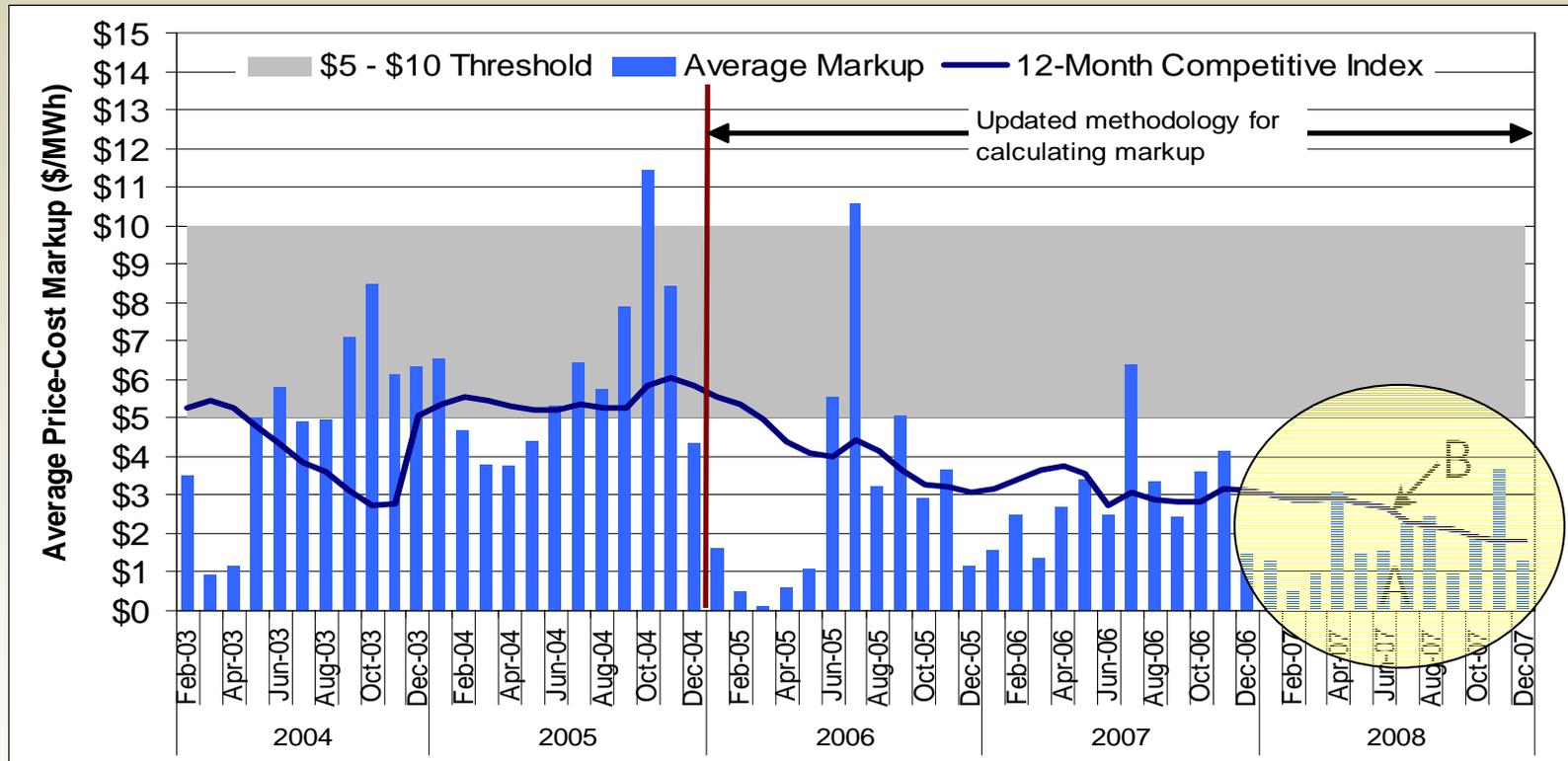


Generation Investment



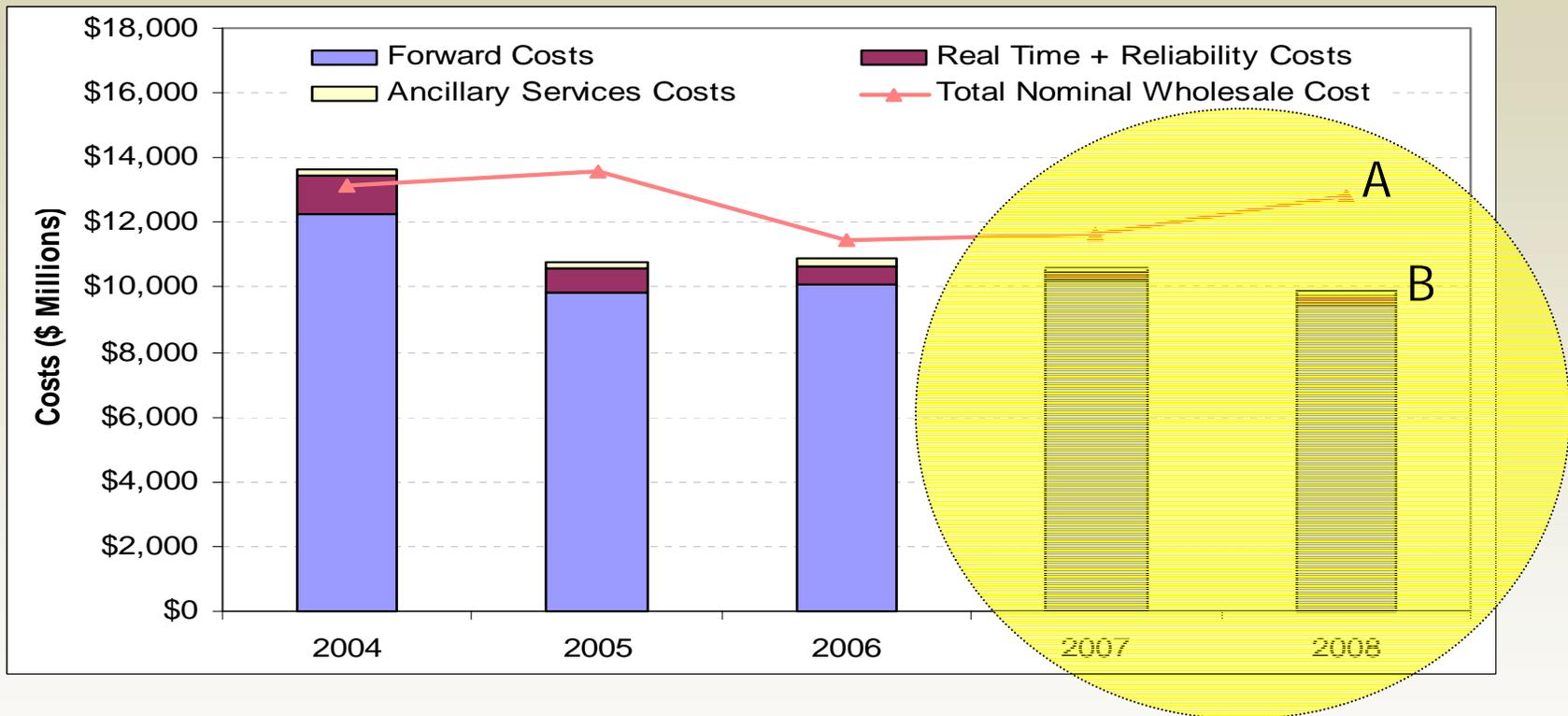
Significant Events

# Wholesale markets were stable and competitive.



- A. Monthly price-to-cost mark-ups were less than \$4/MWh.
- B. 12-month competitive index was below \$3/MWh.

# Total wholesale costs increased slightly.



- A. Total wholesale cost increased 9.4% in 2008 to \$12.8 billion.
- B. Adjusted for changes in natural gas prices, total wholesale costs were slightly lower than in 2007.

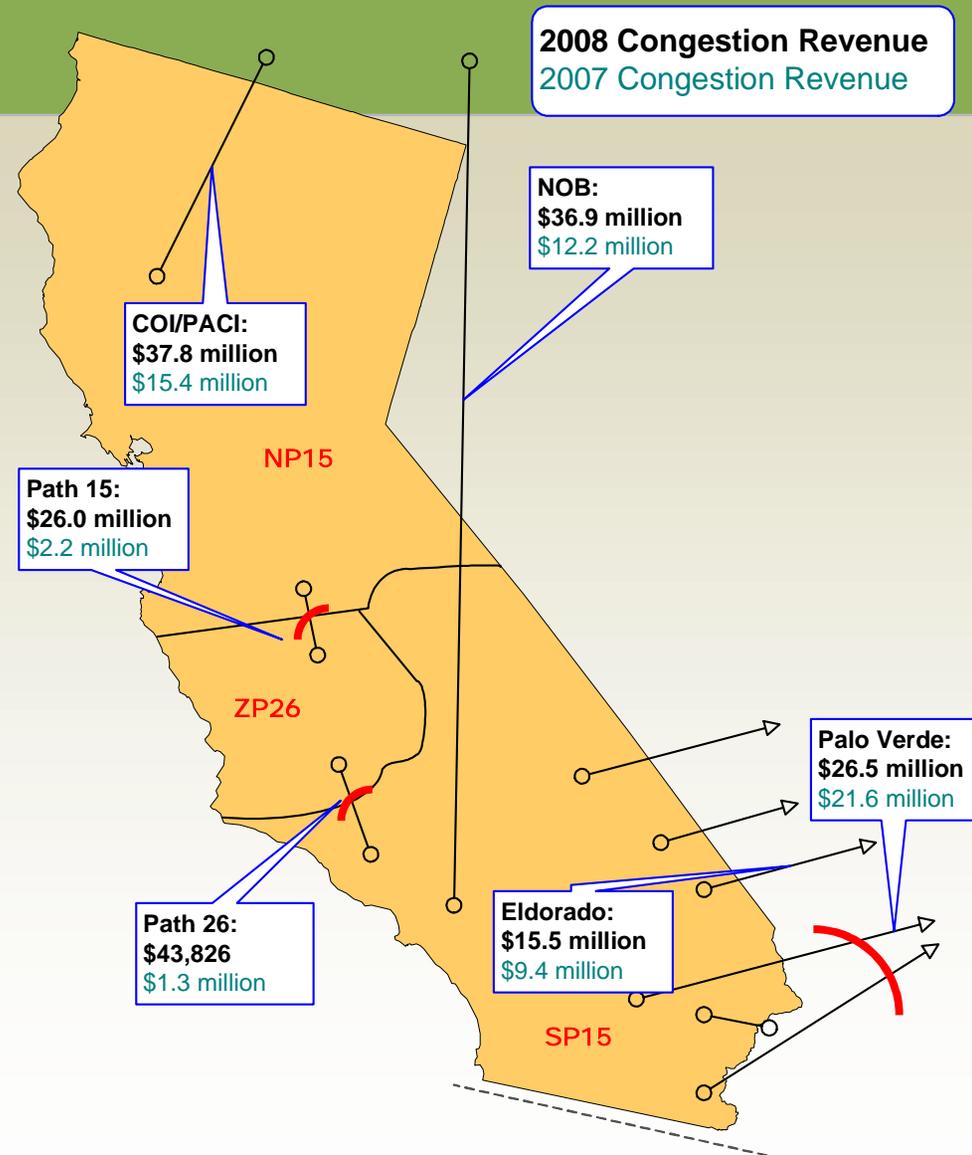
## ISO reliability costs increased in 2008.

Reliability Cost Type	2008 Cost (\$MM)	%Δ from 2007
Intra-zonal (including RT RMR)	\$174	81%
Total RMR (excluding RT RMR)	\$55	-44%
RCST/TCPM	\$3	-89%
<b>Total Reliability Costs</b>	<b>\$232</b>	<b>5%</b>

- Includes costs of non-market costs associated with ISO actions taken to manage reliability.
- Does not include cost of capacity under Resource Adequacy (RA) contracts.

# Inter-Zonal congestion costs increased significantly in 2008.

- \$176 Million in 2008
- \$85 Million in 2007



# Cumulative new generation investment is significant but little net-gain in the south.

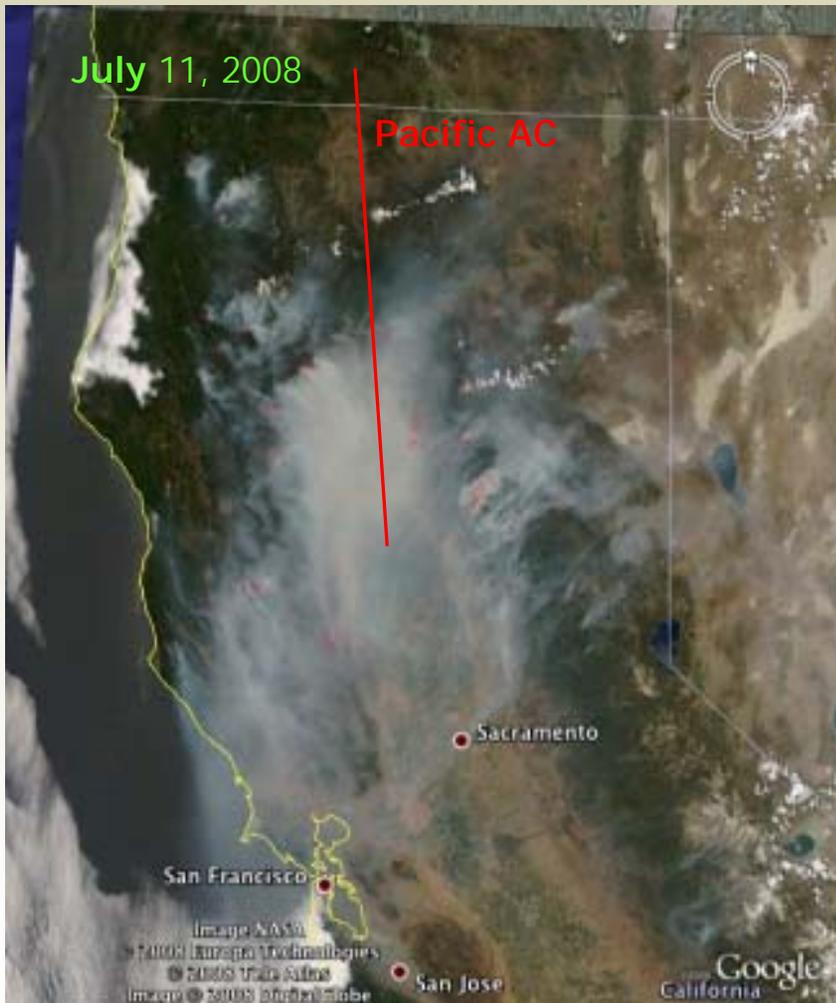
	Cumulative (2001-2008)	
<b>Southern Zone</b>		
New Generation	7,449	} New generation in southern California largely offset by retirements and load growth.
Retirements	(4,280)	
Forecasted Load Growth*	4,212	
<b>Net Change</b>	<b>(1,042)</b>	
<b>Northern Zone</b>		
New Generation	7,544	} Major gains in central & northern California.
Retirements	(1,235)	
Forecasted Load Growth*	3,342	
<b>Net Change</b>	<b>2,967</b>	
<b>CAISO System</b>		
New Generation	14,994	} System-wide
Retirements	(5,515)	
Forecasted Load Growth*	7,554	
<b>Net Change</b>	<b>1,925</b>	

\* Based on 2% annual load growth.

## Major Market & Grid Operation Events in 2008

- June Wildfires & Heat Wave – managed without any major grid or market impacts.
- Natural Gas Prices – Large swings in natural gas prices drove market activity, particularly congestion costs.
- Limited California hydroelectric production – increased dependence on thermal generation and imports.

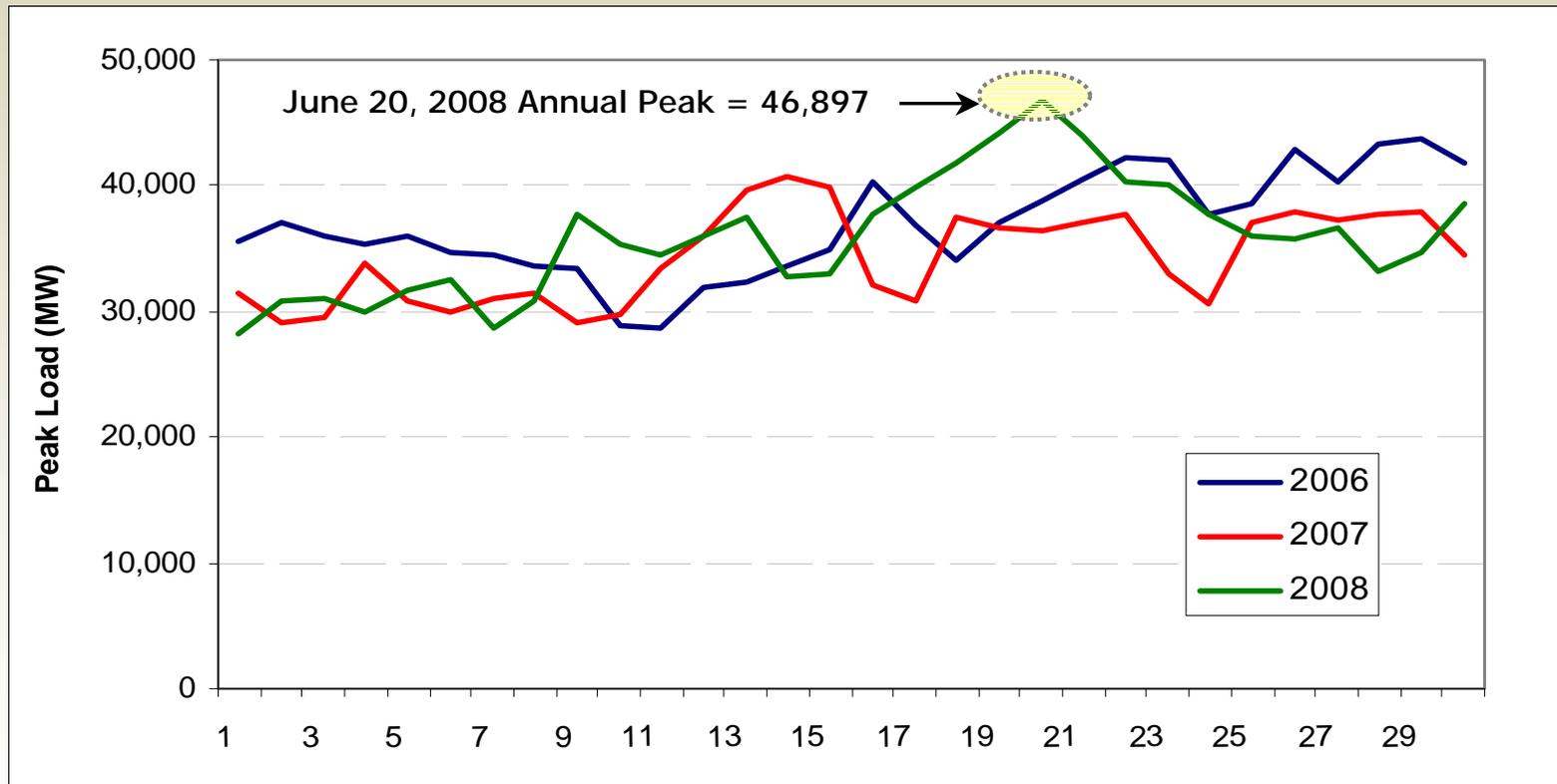
# Markets and grid operation performed well during June California wildfires and heat wave.



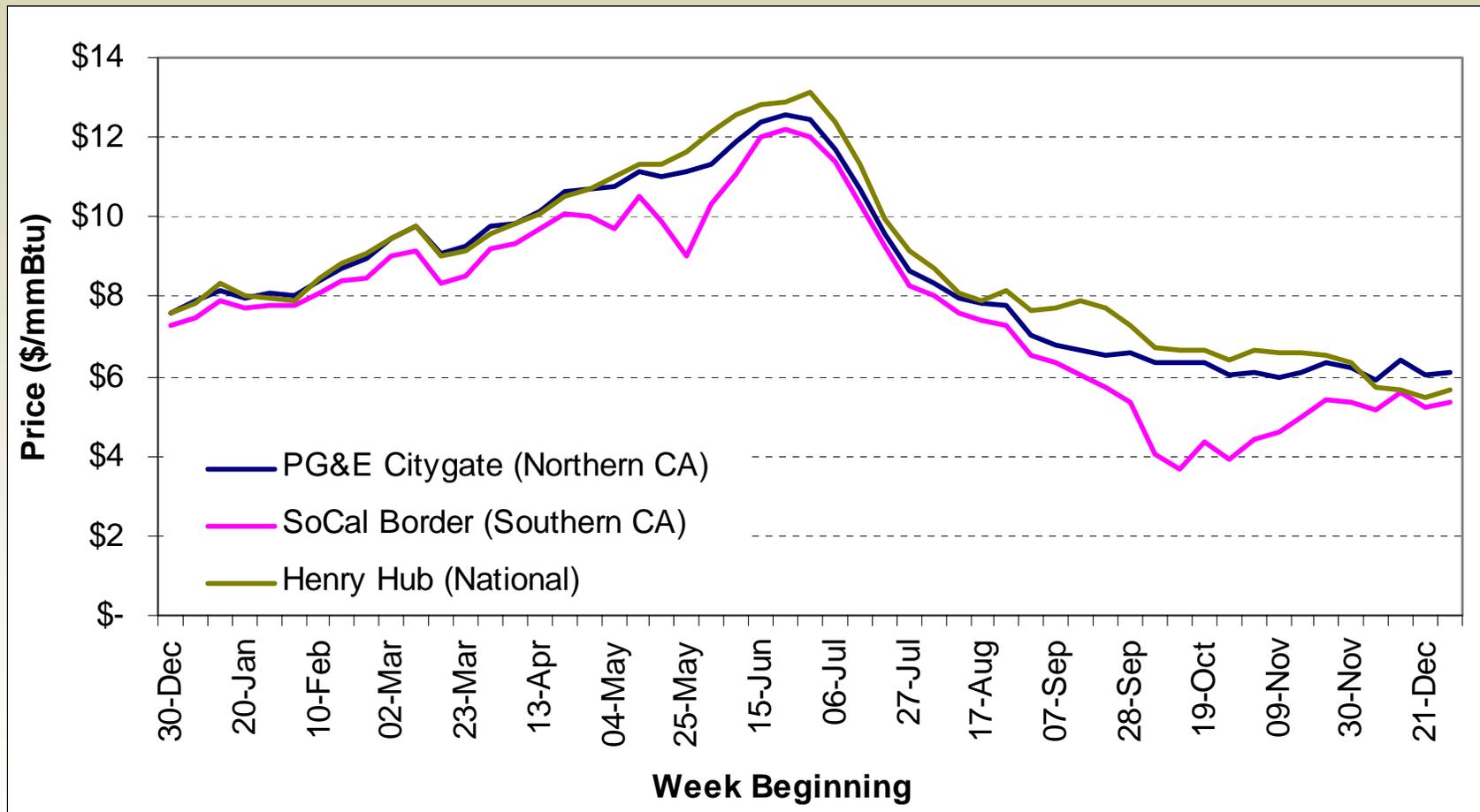
- Spring 2008 – driest on record
- June 20-21 – 5,000-6,000 dry lightning strikes across northern & central California
- Over 2,000 wildfires
- Over 1.3 million acres burned
- Operational impacts:
  - Periodic de-rates of major transmission to the northwest (Pacific AC)
  - Out-of-merit dispatch to unload various other paths

Annual peak load occurred on June 20, and loads were relatively moderate the rest of summer.

Daily Peak Loads - June 2006-2008



Rise and fall of natural gas prices were a big driver in 2008 market performance.

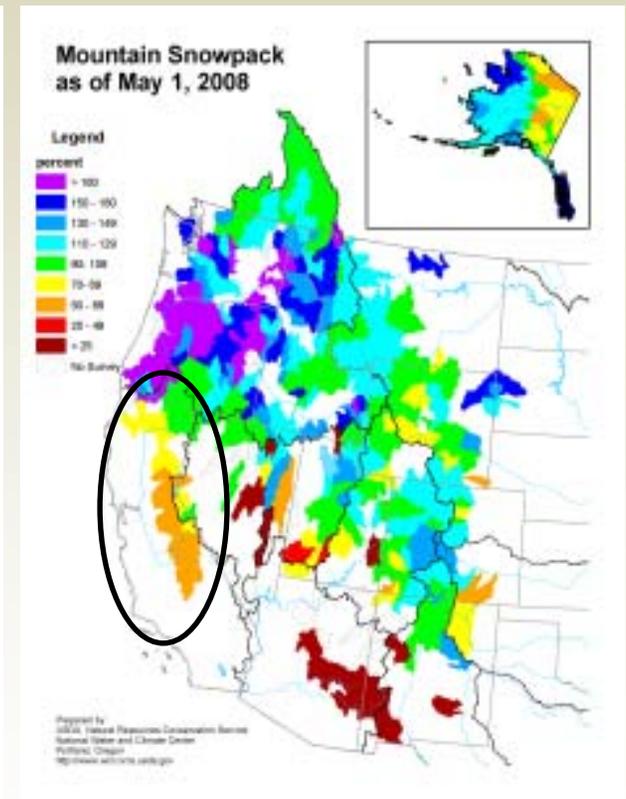
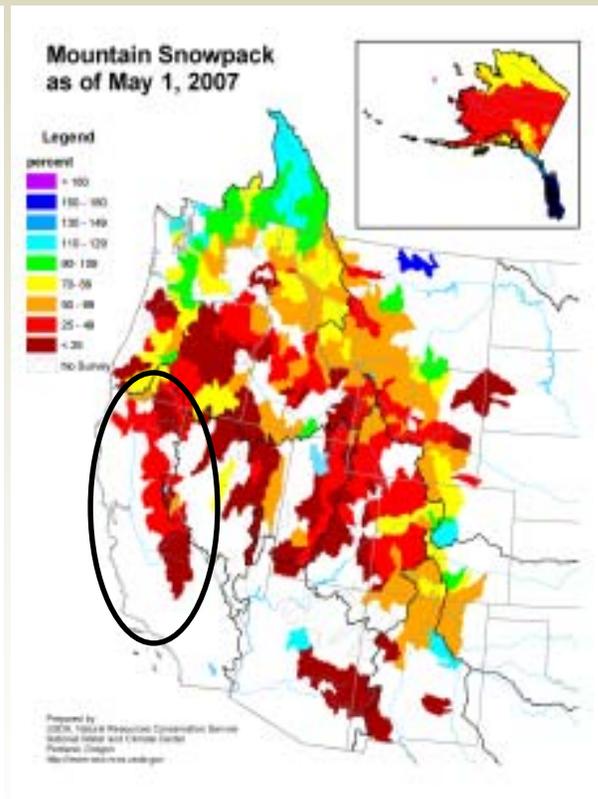
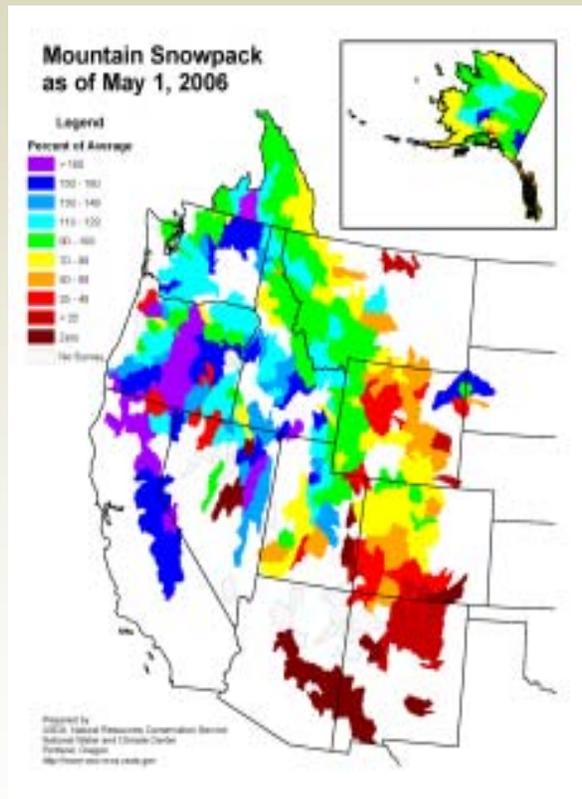


# Two consecutive years of below normal California snowpacks limited hydroelectric supplies.

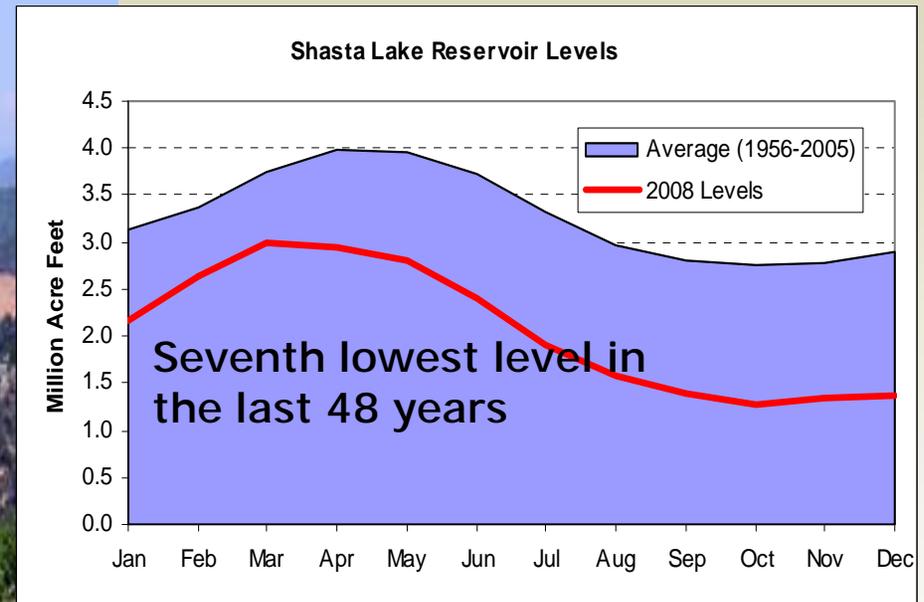
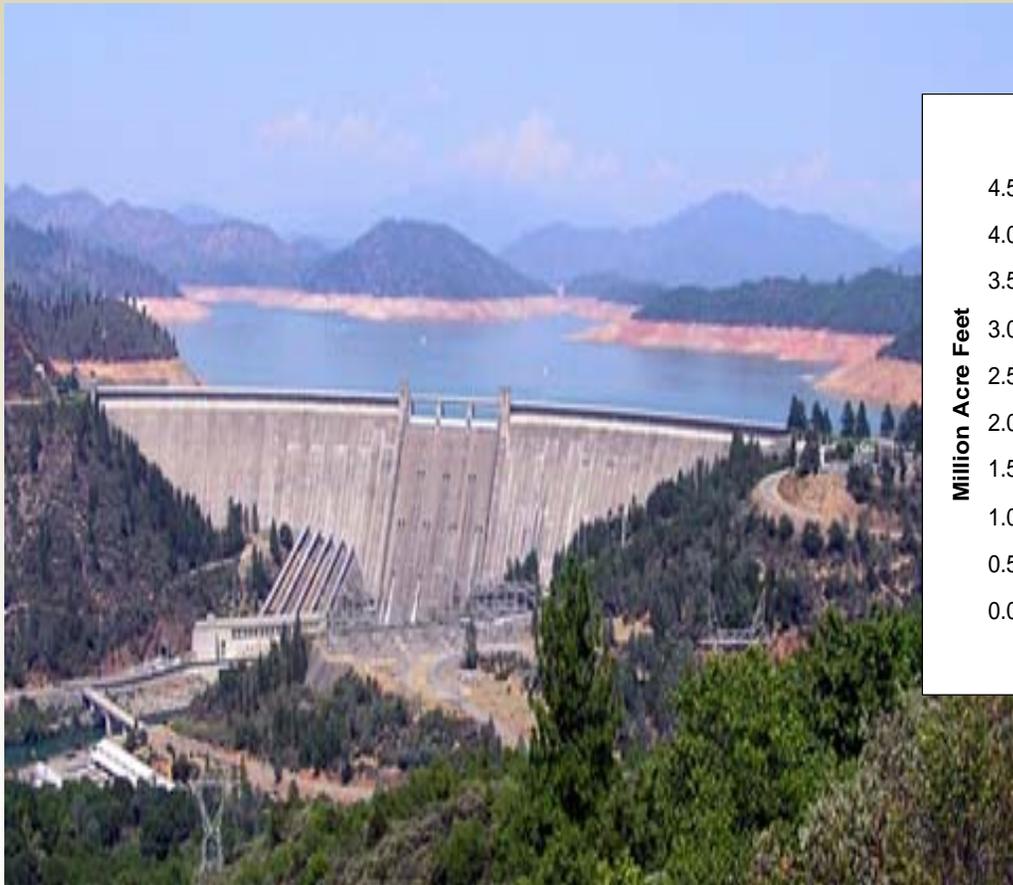
2006

2007

2008



# Low Reservoirs = Limited Hydro Power



Shasta Reservoir – August 12, 2008

# ISO hydroelectric production in 2008 was the lowest in the past eight years.

