



# **“Let There be Light”**

Presentation to:

The Harvard Electricity Policy Group

May 30, 2002

**Jan Smutny-Jones, Executive Director  
Independent Energy Producers Association**

# How We Got Here...



- Despite the rhetoric, there are three foundational elements that led to the crisis:
  - Supply and Demand Problem
  - Flawed Market Design
  - Political and Regulatory meltdown

# How We Got Here

## *Supply and Demand*



- Supply and Demand Problem
  - Prior to the crisis, no significant new supply had been added in California within the last 10 years.
  - Average age of power plants at the time was over 37 years old- increased operation also drove up the cost of emission credit
  - From 1990-1999 while demand grew by 11% in California the generation capability decreased by 2%.
  - The entire WSCC demand also increased in 2000 at an unprecedented rate- 4.2% over 1999 and 7% over 1997
- Drought (limited imports)
  - Normally California relies upon 15-20% of its demand to be met through imports from the Pacific Northwest only half of this import energy was available in 2000.
- Natural Gas Cost Increase throughout the U.S.
  - Additional constraints on CA Gas due to El Paso pipeline explosion

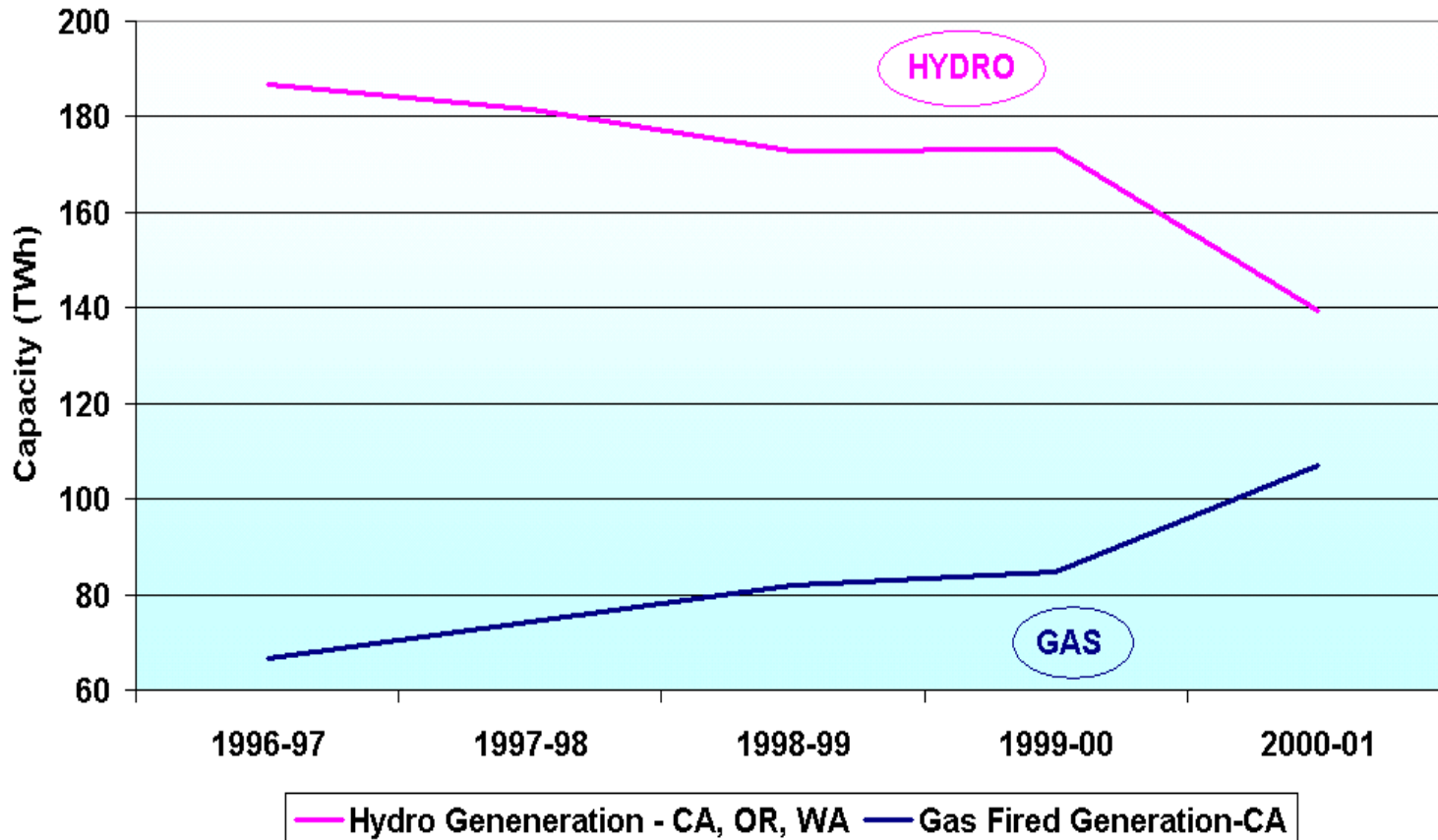
# The Perfect Storm:

*The convergence of adverse supply & demand conditions*



- California has historically relied upon its neighbors for power
- During the Summer of 2000 California was only able to import half of what it did (from the entire WSCC) during 1999.
- Reserve margins are heavily influenced by hydro conditions in conjunction with transmission transfer capability into California.
- Increased electric consumption throughout the WSCC has eaten into the historic “surplus”.

# Low Hydro Impact on Natural Gas



# The Collapse

- The aging fossil fleet ran at historically high levels throughout 2000.

“These facilities ran at unheard –of levels to service California and the Grid during the crisis. From what we could see they were running almost into the ground”. –Deputy Executive Officer, Carol Coy, SCAQMD referencing 1/1/00-6/30/00

- The Fleet averaged 60% more production in 2000 over 1999 and the oldest units, over 45 years old, averaged a 108% increase
- Plants operate at high heat rates on a strict air-quality regimen
- This resulted in an increased number of outages in the Winter of 2000.
  - (coupled with SCR installation requirements and delays)



# How We Got Here

## *Flawed Market Design*



- Utilities limited on forward procurement
  - The Investor Owned Utilities (IOU's) were regulatory restricted from entering into any short or long-term hedging contracts. (no prudence guidelines for procurement)
  - Generating units were sold without any “buyback” provisions
  - Reliability Must Run (RMR) contracts were actively cancelled
- Utilities were required to buy/sell energy through the Power Exchange only
  - Purchases made through the PX were per se reasonable

# How We Got Here

## *Flawed Market Design*



- ISO Real Time markets had a Price Cap
  - Designed for 3-5% of the load only
  - Utilities often under-scheduled up to 30% (12,000-15,000 MW per hour) in the real-time markets
- Resulting in an over-reliance on short-term markets
- No Retail Competition
  - Wholesale rates were market-based while the CPUC kept a 'rate-freeze' in effect.



# How We Got Here

## *Political and Regulatory Instabilities*



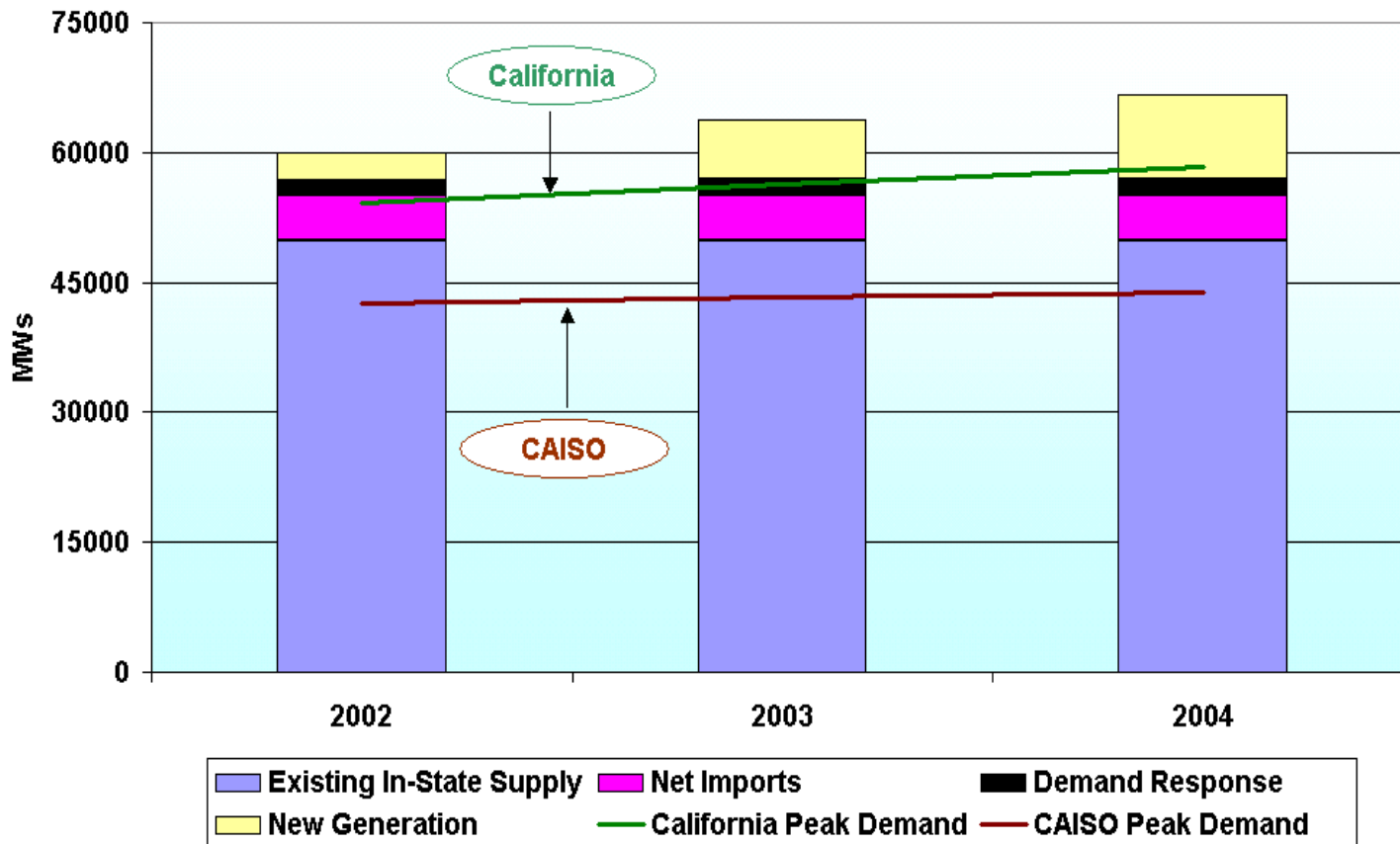
- Market expectations hardwired into AB1890
- Rates determined by Legislative action, CPUC inaction
- California seeks to protect its structure while blaming FERC for its shortcomings
- State/Federal jurisdiction fight = lots of heat but no light
- Politics and physics don't mix. California market structure has regional implications

# Déjà vu all over again...



- The Recession is over.
  - California economy is recovering at an expedited pace resulting in increased demand
- El Niño is coming- NW Drought repeat
- Infrastructure investment stalled: political and regulatory uncertainties, Enron fallout
- Lack of real Market Reform in California

# CA Energy Commission Forecast

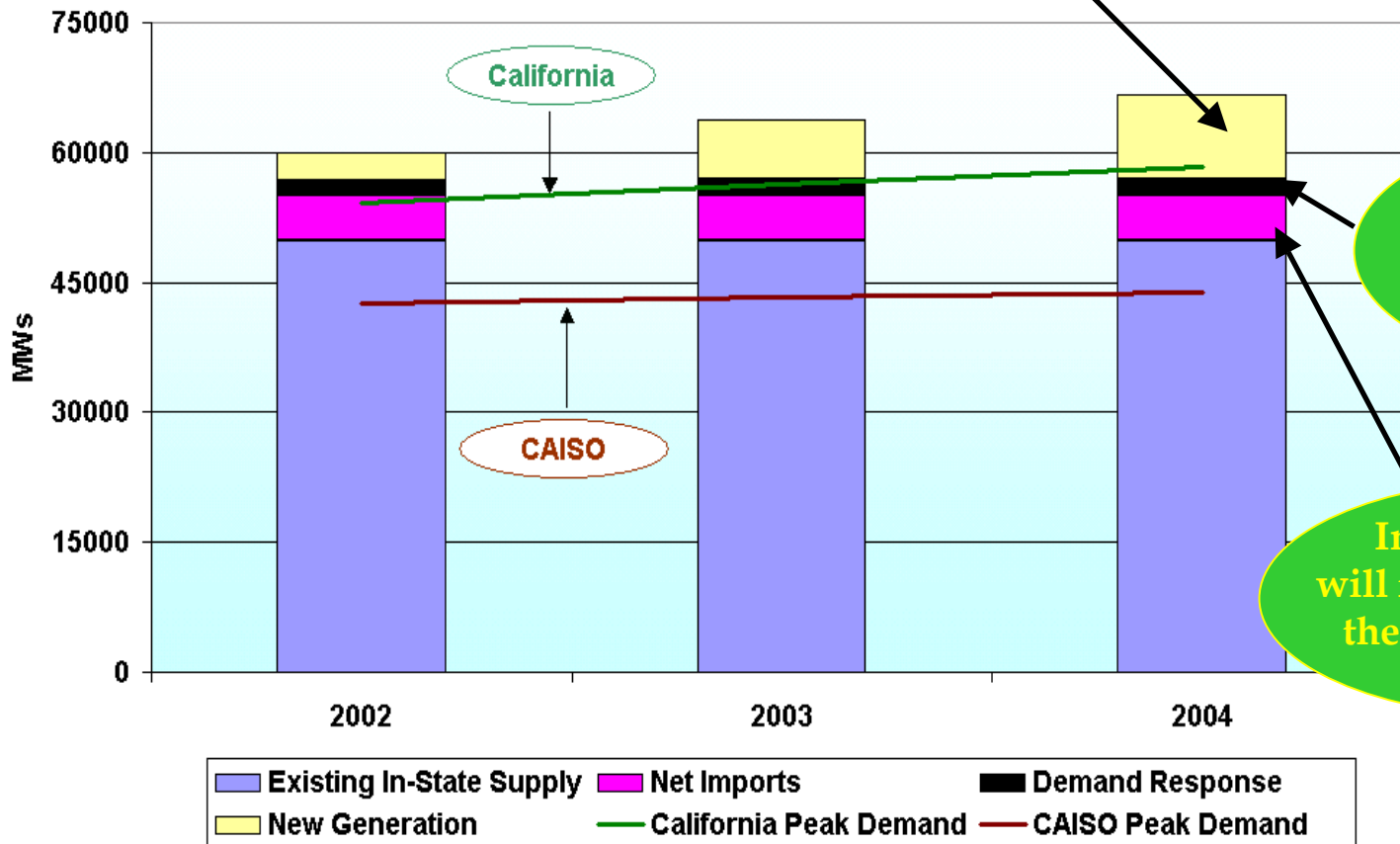


Supply/  
Demand  
Projection  
2002-2004

**Source:** CEC 2001-2012 Electricity Outlook Report (Dec 2001), California Summer Electricity Outlook 2002-2004, (Nov 2001) & CEC Staff.

# 2004- No Guarantees

This "New Generation" is in jeopardy



No guarantee That DSM will continue

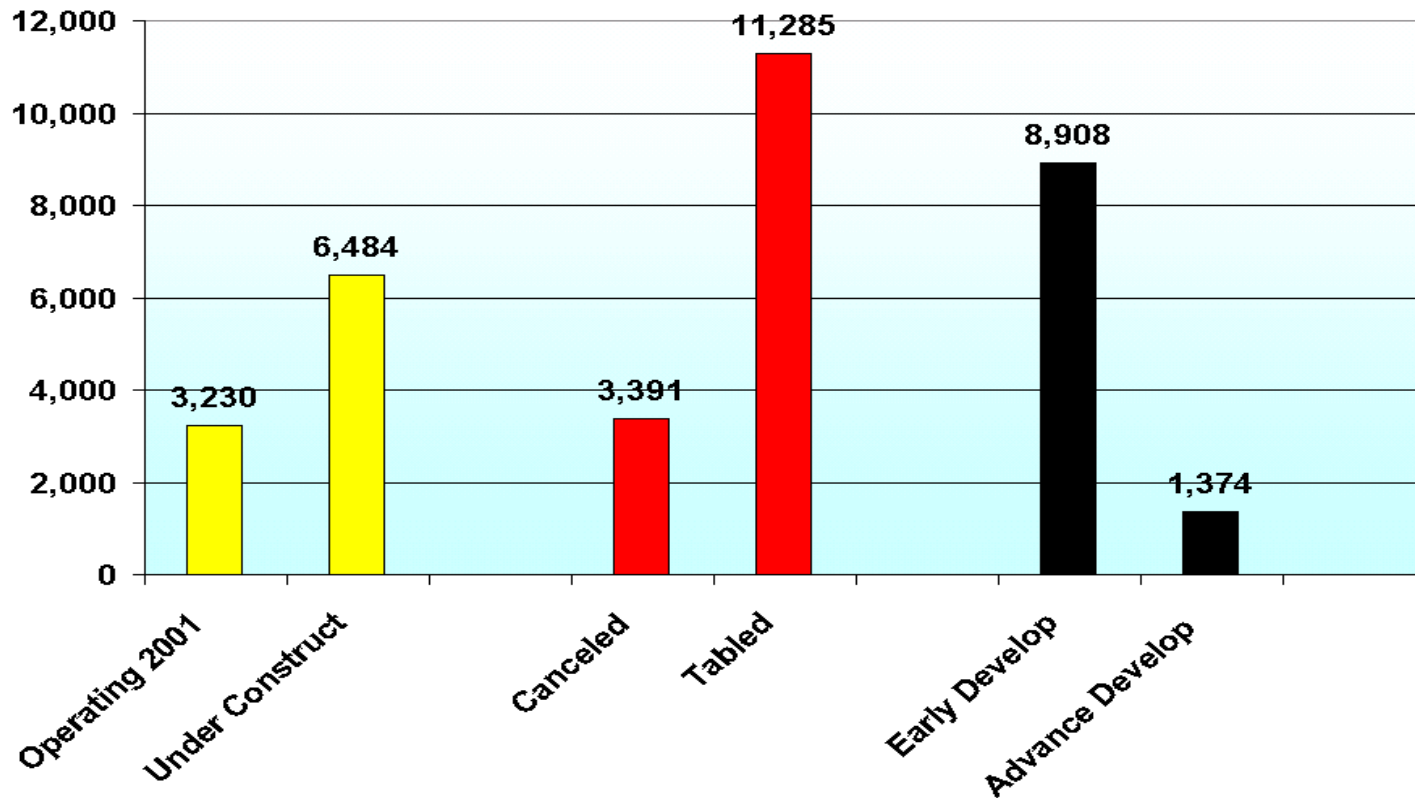
Imports into Cal. will fall if a drought in the PNW is repeated

Source: CEC 2001-2012 Electricity Outlook Report (Dec 2001), California Summer Electricity Outlook 2002-2004, (Nov 2001) & CEC Staff.

# California Generation 2001 - 2006



Megawatts

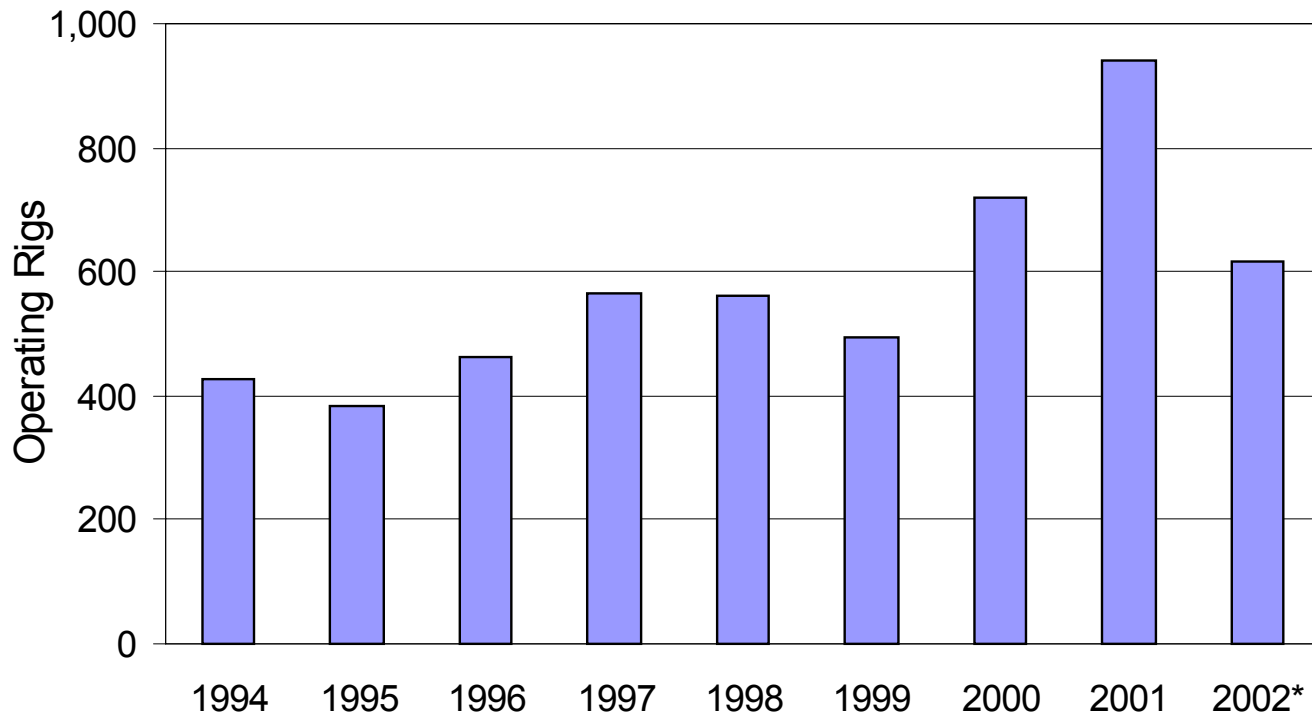


SOURCE: RDI PowerMap, NewGen, December 2001

# Natural Gas Rig Count



U.S. Average Natural Gas Rig Count



source: EIA

\* Through 1st quarter

# Crisis May Repeat- Natural Gas

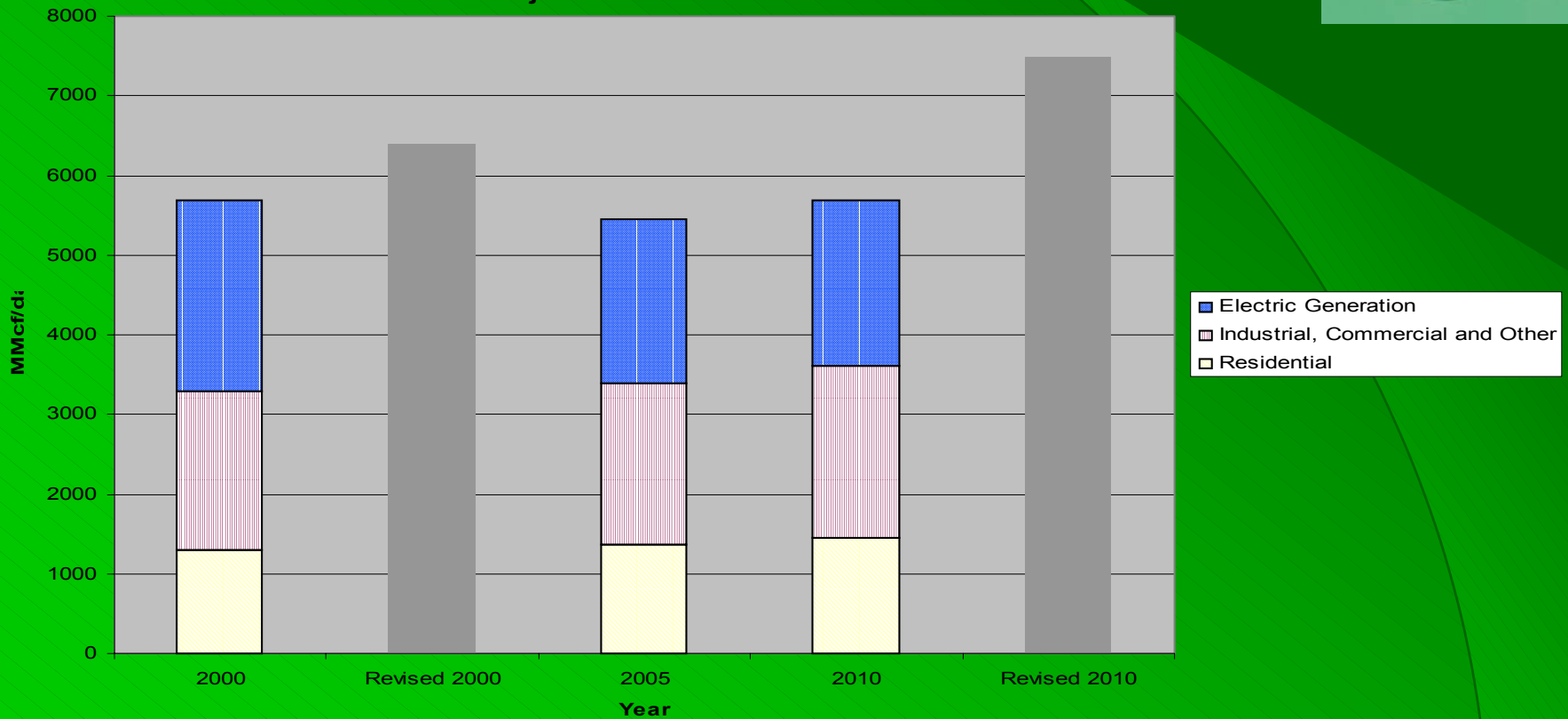


- Natural Gas Demand is increasing in California and throughout the WSCC
- There is a direct relationship between the decrease in hydro production and the increase in demand for Natural Gas

# Projected Natural Gas Demand in California



Figure I  
Projected Natural Gas Demand in California



Projected demand from California Gas Report, August 2000. Revised demand from California Energy Commission Fuels Office, Staff White Paper, "Natural Gas Issues That May Affect Siting New Power Plants In California," January 25, 2001.



# Concerns 2003-2005

- Demand will continue to grow. Voluntary reduction will diminish
- Lower Northwest snow pact due to El Niño
- Power-plant construction on hold
- Up to 2000 MW of instate generation at risk for air quality issues



# Concerns 2003-2005



- Market redesign is lagging
- Transmission upgrades at Path 15 (CPUC opposes this) and other infrastructure investments on hold
- Political and Regulatory rhetoric
- Repeat of 2000-2001?

# Out of Chaos Comes Opportunities



- California is the worlds 5<sup>th</sup> largest economy and will continue to grow
- WSCC is a growing robust market
- California ISO Market Reform 2002 is trending toward the proven eastern models.