

# LNG's Role for Expanding Natural Gas Supplies

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# Presentation Topics

- California Economy-Energy Relationship
- Pursuing Energy Efficiency & Renewables in Accordance with State of California's Energy Policy
- Overseas Natural gas as a New Natural Gas Source for California
- Domestic and Canadian Natural Gas Supply to California
- Efforts to Reduce Demand Will Still Fall Short
- Natural Gas Prices are Rising
- Diversifying Natural Gas Supply Sources for the Future
- LNG Interagency Working Group



# The “Nation State” of California

- 6<sup>th</sup> largest economy of the world
- 5<sup>th</sup> largest consumer of energy in the world
- Consumes 2% of the world’s natural gas production
- Average daily natural gas demand: 6 billion cubic feet (10 billion cubic feet per day in winter)
- Population expected to grow from 36 million now to 45 million by 2025



## 2005 Integrated Energy Policy Report

*“The health of California’s economy depends upon reliable, affordable, adequate, and environmentally-sound supplies of energy.”*

**November 2005**



# 2005 Energy Report Findings and Conclusions

- No liquefied natural gas terminals are located on the west coast.
- The *2003 Energy Report* endorsed the need to develop LNG facilities to better serve the natural gas needs of the western U.S.



## California Governor Schwarzenegger's Direction

*“California’s and the nation’s use of natural gas is growing beyond the ability of traditional natural gas resource areas to keep pace....*

*As options are explored, California must increase supply, increase in-state gas storage and enhance the State’s import capability to ensure reliable supply and stable prices.”*



In addition, the Governor supports:

*“Encouraging the construction of liquefied natural gas facilities and infrastructure and permit reviews coordinated with all entities to facilitate their development on the West Coast.”*

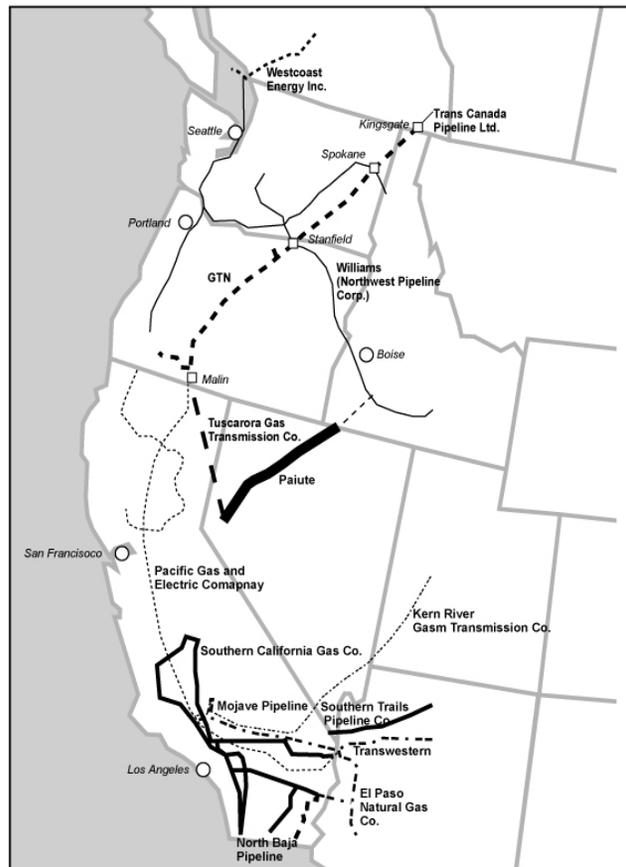


# California's Natural Gas Situation

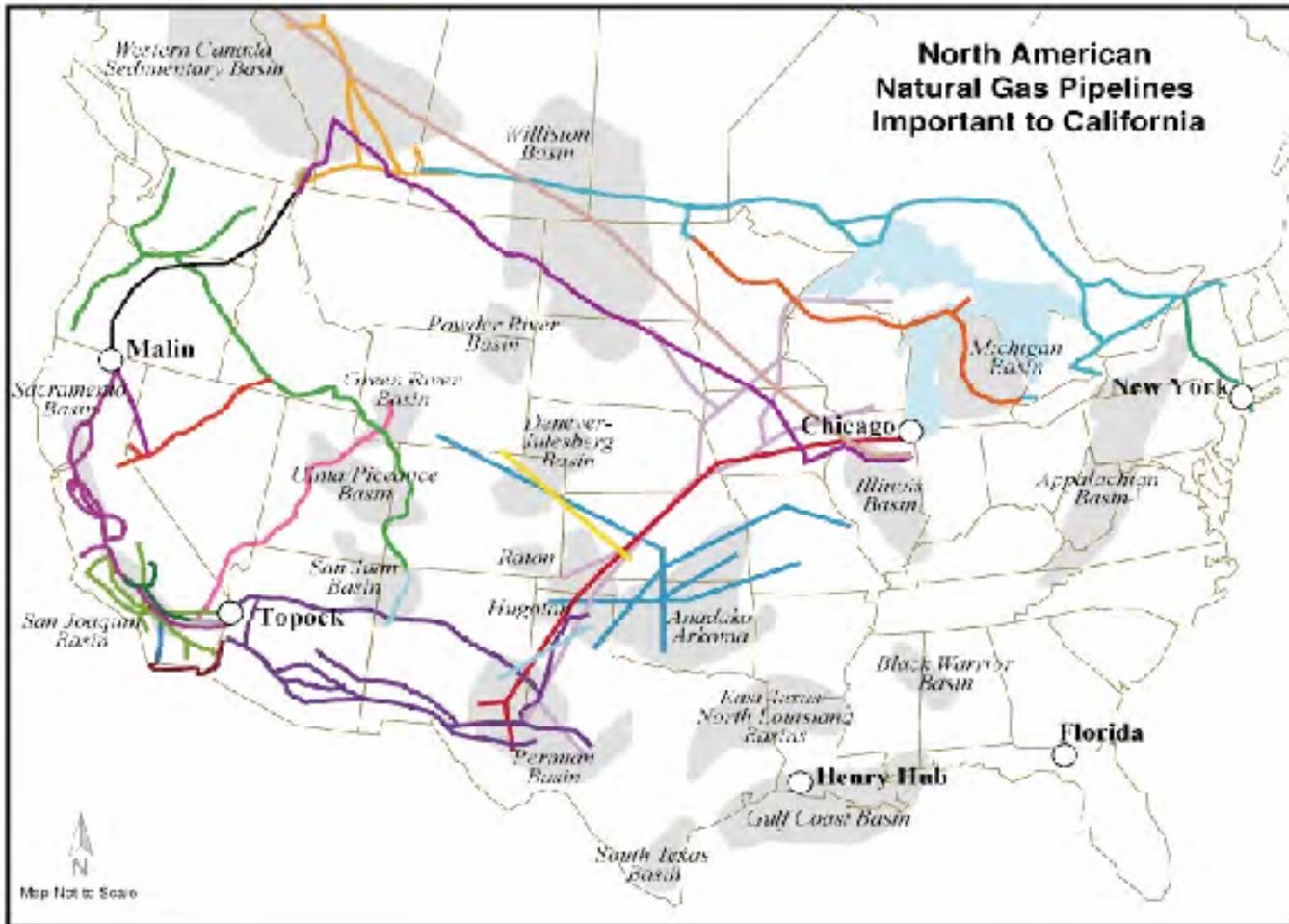
- California imports 87% of its natural gas
- U.S. and Canadian sources expected to decline in the future
- California demand expected to grow
- LNG provides another source of natural gas
- Delivery of gas from a West Coast terminal could hedge against supply/price problems in rest of country (e.g., hurricanes)



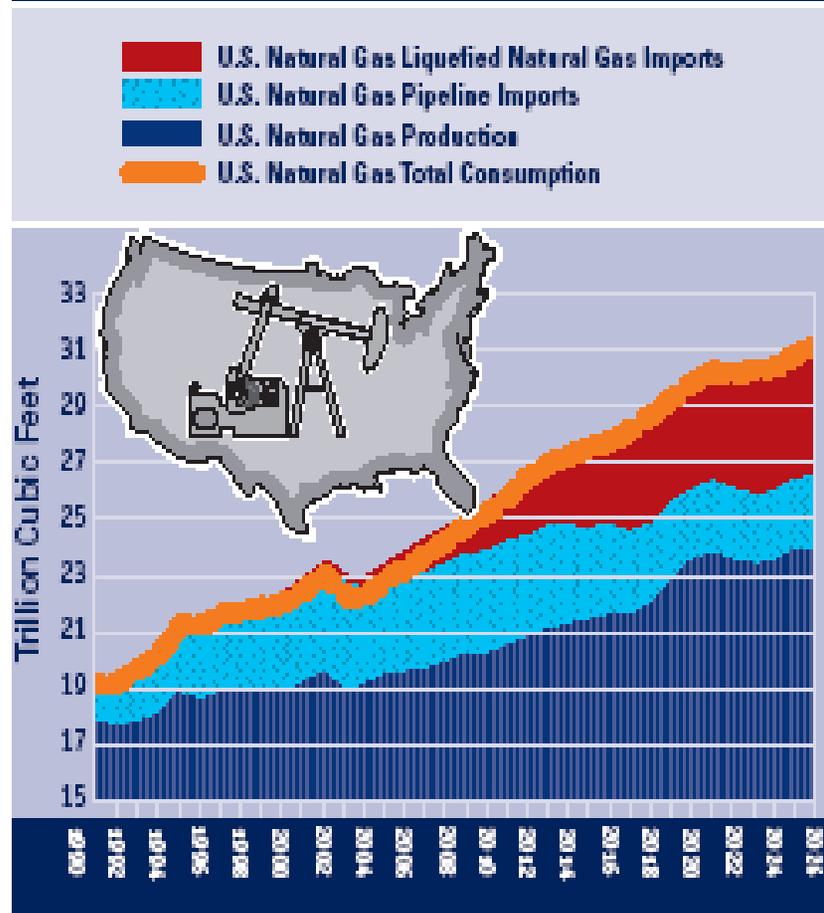
# Interstate Pipelines Serving California



# Natural Gas Pipelines



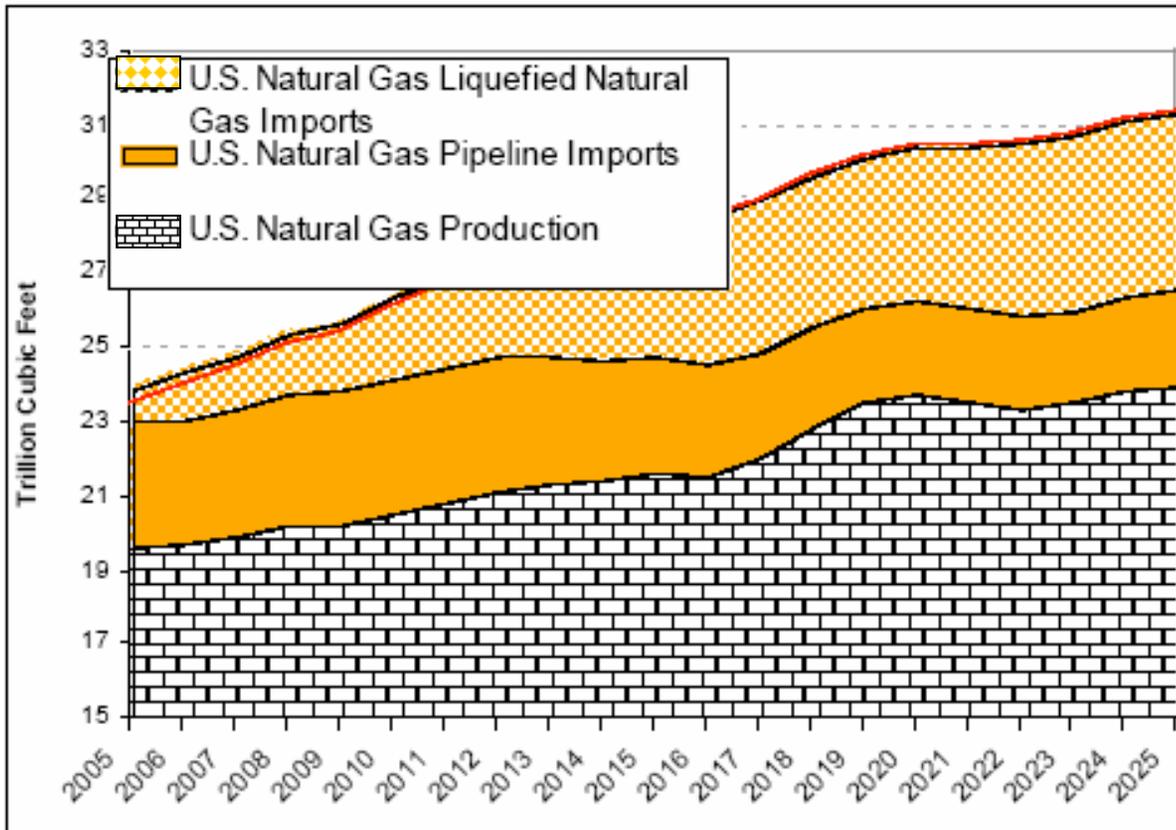
### Figure 18: Projected U.S. Natural Gas Supply and Demand



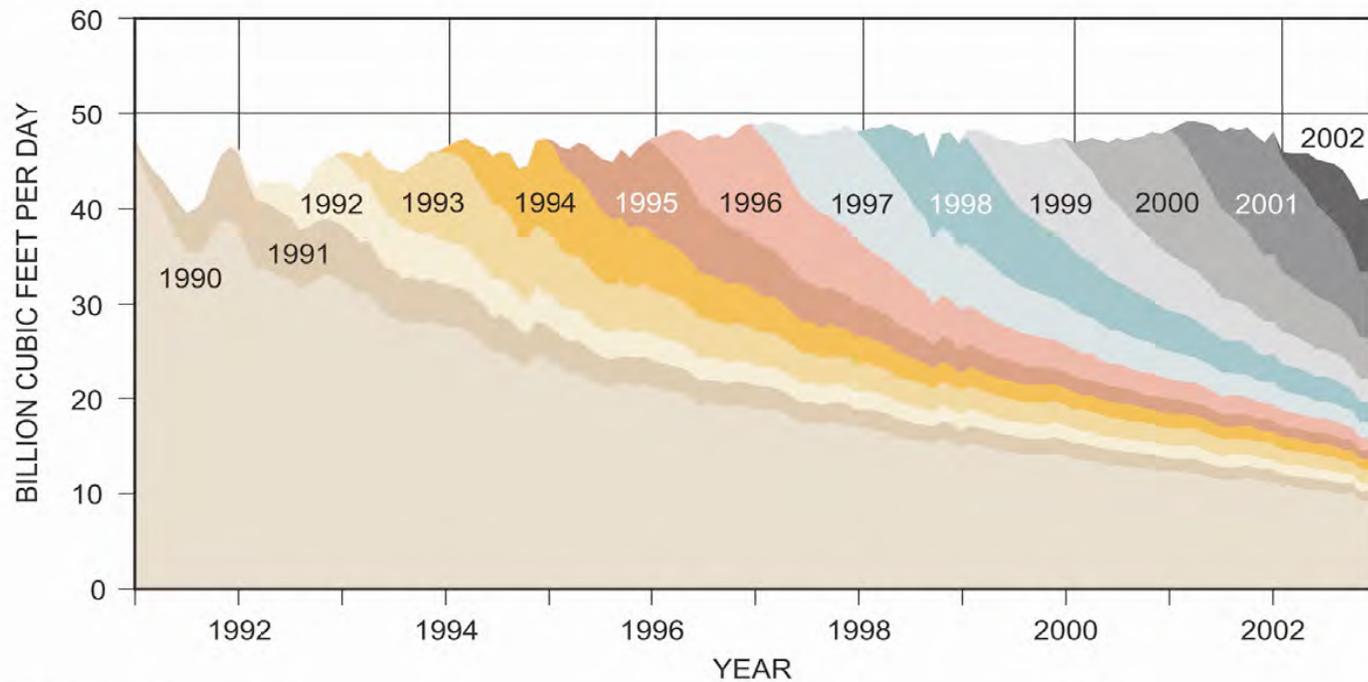
10 Source: U.S. Energy Information Administration



# U.S. Natural Gas Supply Forecast (by U.S. Department of Energy)



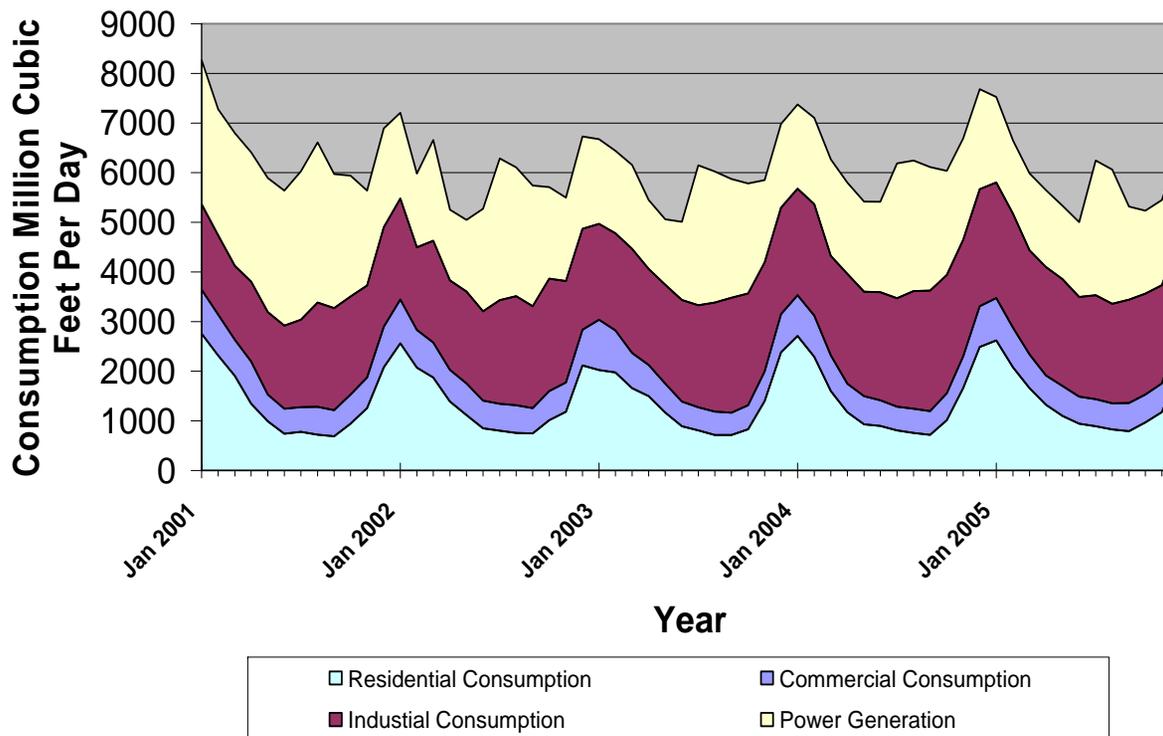
# Well Depletion Rates



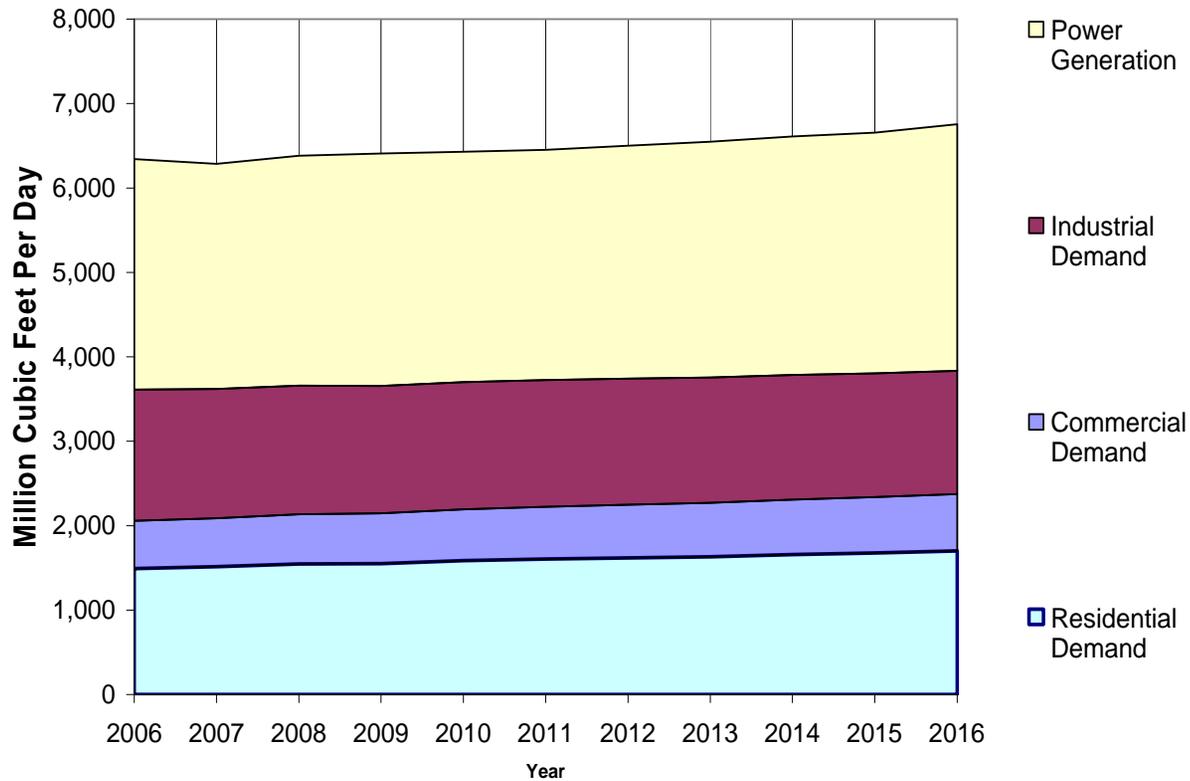
Source: IHS Energy Group.



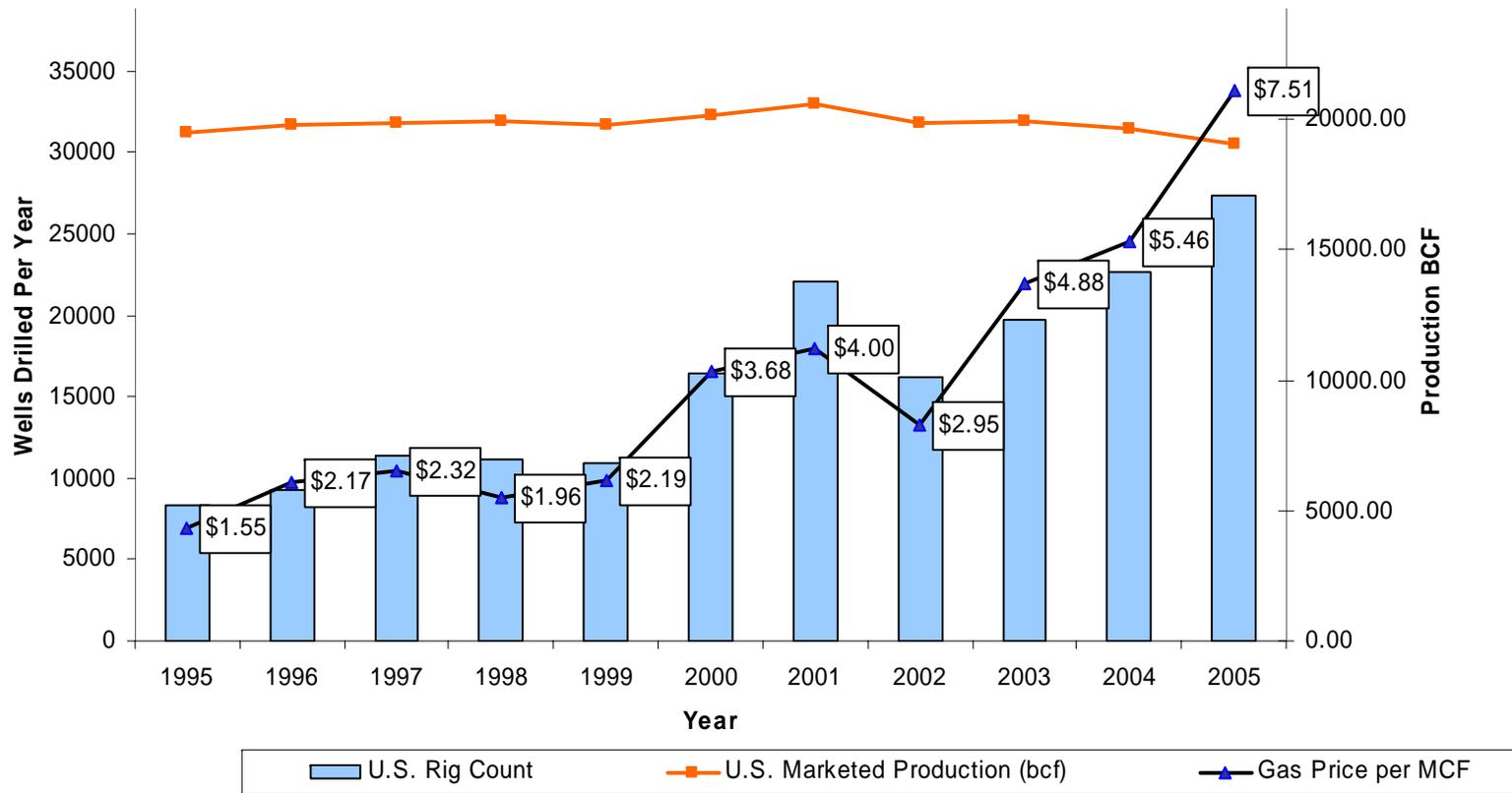
# California Natural Gas Consumption by Sector



# California's Projected Natural Gas Demand



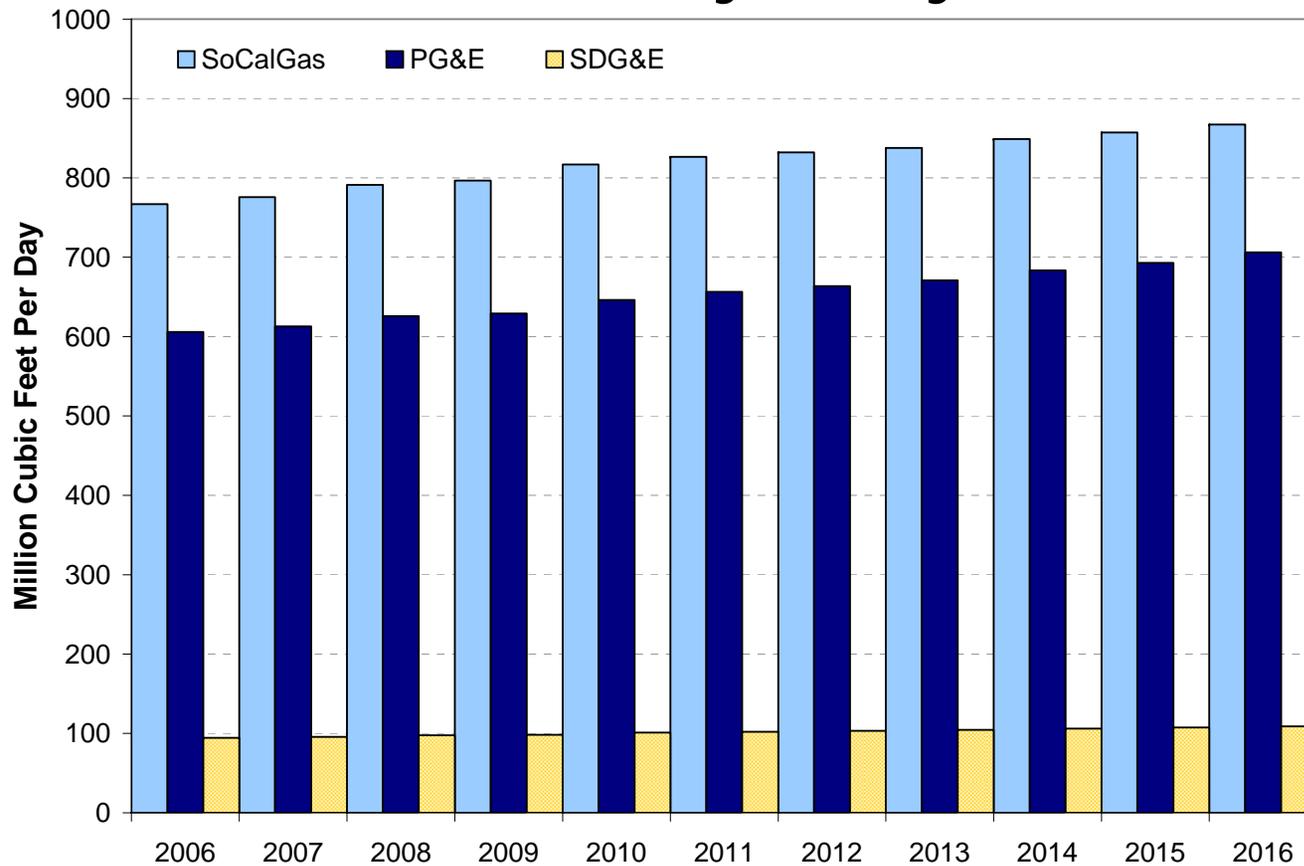
# U.S. Drilling Rig Counts vs. Well Head Price and Marketed Production



Source: U.S. Energy Information Agency



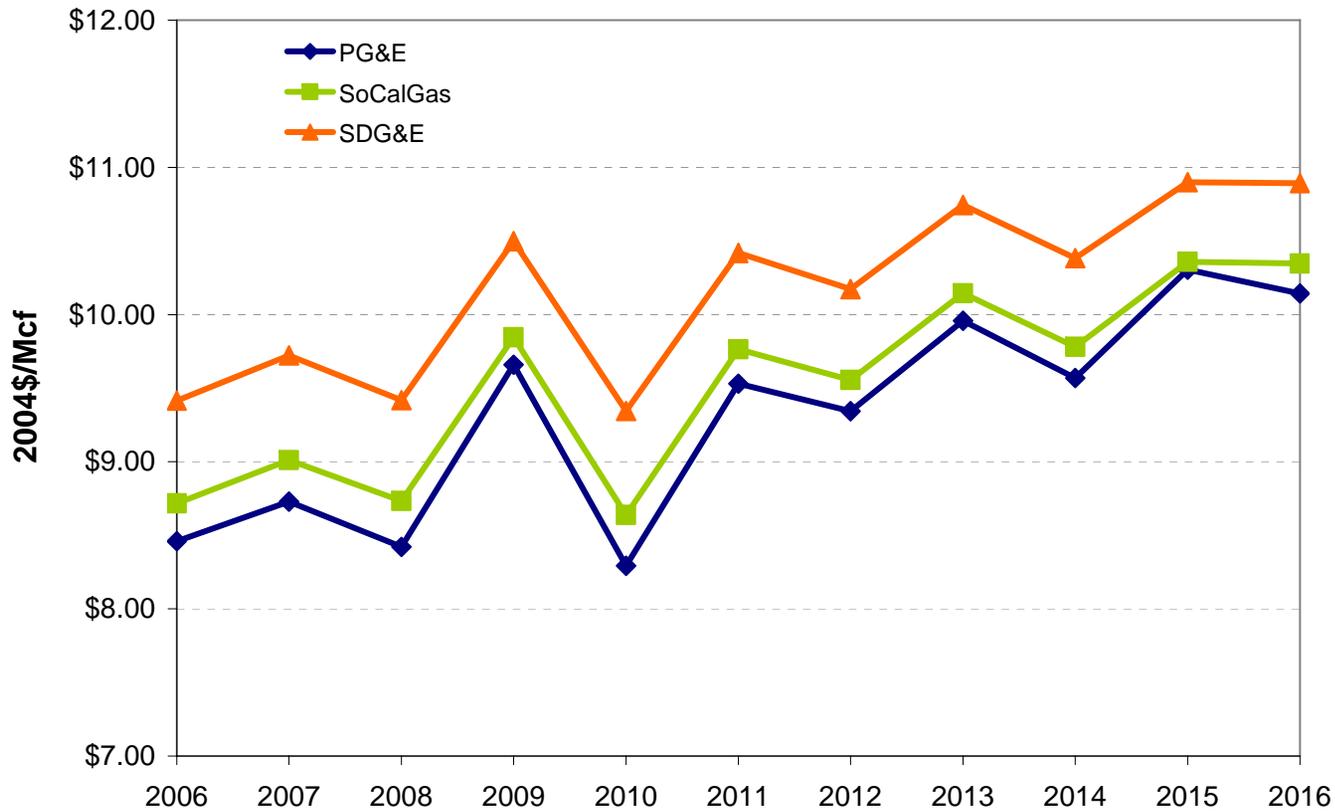
# Projected Natural Gas Consumption by Residential Customers in California, by Utility Service Territory



Source: California Energy Commission, Natural Gas Office



# Projected Residential Natural Gas Prices



Source: Pacific Gas and Electric Company and Southern California Gas Company



## Why Consider LNG?

- California is connected to U.S. NG market
- U.S. NG supply not keeping up with demand
- NG prices are rising very rapidly
- California imports 87% of its supply



# LNG Proposals on the West Coast (that would provide California with LNG)

- California
  - Pacific Gateway
  - Cabrillo Deepwater Port
  - Clearwater Port
  - Long Beach
  - Ocean Way Terminal (recently announced)
- Mexico
  - Terminal GNL Mar Adentro de Baja California
  - Moss-Maritime Project
  - Energia Costa Azul LNG Facility (under construction)



# Pipelines/Sempra Energy Costa Azul Facility





# Potential Value to California

- LNG identified as a supply option
  - ❖ New pipelines also identified
- LNG imports specifically analyzed
- LNG provides significant economic benefit to California
  - ❖ Potential overall price reduction
  - ❖ Supply diversity
  - ❖ Additional import capacity



CNG Vessel  
Photo courtesy of CH-IV International, <http://ch-iv.com>

# LNG Interagency Working Group

## Mission

- Establish close communication among and support for agencies potentially involved in the permitting process of any LNG facility in California.

Working group has met monthly since September 2003.



# LNG Interagency Working Group

## Goals:

- Identify permitting responsibilities for various aspects of an LNG project
- Identify potential resources available to the State that can be used to assist the lead and responsible agencies that review an LNG facility application
- Establish a support network to ensure all affected agencies can operate efficiently and complete their work in a timely manner
- Provide clear guidance to potential developers on the State's LNG permitting process
- Serve as an information resource on LNG by offering workshops to agencies or the public and maintaining a website on LNG (<http://www.energy.ca.gov/lng/index.html>)



# LNG Interagency Working Group

Members include federal, state and local agencies:

- **Federal**

- U.S. Air Force
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- U.S. Marine Corps
- U.S. Navy

- **State**

- Air Resources Board
- Coastal Commission
- Coastal Conservancy
- Department of Fish & Game/Office of Spill Prevention & Response

(continued)



# LNG Interagency Working Group

- **State (continued)**
  - Department of General Services
  - Electricity Oversight Board
  - Energy Commission
  - Governor's Office of Emergency Services
  - Governor's Office of Homeland Security
  - Office of Planning and Research
  - Public Utilities Commission
  - San Francisco Bay Conservation and Development Commission
  - State Lands Commission
- **Local**
  - City of Oxnard
  - County of Ventura
  - Port of Long Beach



## Different Review Processes for Offshore and Onshore Projects

- Different federal laws and standards
- Different federal agency leads
- Different state agency leads
- Different timelines for review
- Different role for Governor
- Different approaches for modeling risk



## Permitting Onshore vs. Offshore Different Federal Laws

### Onshore:

- Natural Gas Act
  - Federal Energy Regulatory Commission lead
- Exclusive federal authority to approve or deny application
- State/local air/water permits
- Land lease decisions by port/city

### Offshore:

- Deepwater Port Act
  - U.S. Maritime Administration & U.S. Coast Guard lead
- Governor's decision on issuance of license
- US EPA air/water permits
- Land lease decisions by State within state waters



# California Environmental Quality Act

- ❖ CEQA was adopted in 1970 and is intended to:
  - inform governmental decision-makers and the public about potential environmental effects of a project
  - identify ways to reduce adverse impacts
  - offer alternatives to the project
  - disclose to the public why a project was approved
  
- ❖ Under CEQA, state or local lead agency prepares a detailed statement known as an Environmental Impact Report (EIR)
  
- ❖ CEQA provides the primary mechanism in California for public review and comment on the environmental and safety impacts of proposed projects



# National Environmental Policy Act

- ❖ NEPA was adopted in 1969 and requires federal agencies to integrate environmental values into their decision making by:
  - Considering the environmental impacts of their proposed actions
  - Considering reasonable alternatives to those actions
  
- ❖ Under NEPA, lead federal agency prepares a detailed statement known as an Environmental Impact Statement (EIS)
  
- ❖ NEPA process includes opportunities for public review and comment



## Federal/ State Coordination

- ❖ For LNG projects in California, federal and state lead agencies have been working together to produce joint EIS/EIRs
- ❖ State and local agencies are working to meet the timelines in the federal process



## Decision Coordination: Offshore projects

Agency	Activity
U.S. Coast Guard and California State Lands Commission	Environmental review under National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) resulting in Joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR)
<b>Federal Process</b>	
U.S. Coast Guard and U.S. Maritime Administration	Federal Hearing/Decision on Deepwater Port License
Other Federal Agencies	U.S. Environmental Protection Agency air and water permits, etc.
<b>Governor's Decision</b>	
Governor's Decision	Approve, Approve With Conditions, Deny, or No Action (presumed approved)
<b>State/Local Process</b>	
California State Lands Commission	Certify Final EIR
	Consideration of lease application for rights-of-way for proposed pipelines
California Coastal Commission	Federal consistency certification
	Coastal Development Permit (CDP) and/or appeal of local government CDP (see below)
Local Government	CDP for onshore pipeline within coastal zone governed by approved Local Coastal Plan
State Coastal Conservancy	Lease, if applicable
Other state/local agencies	Other state/local permits (e.g. for onshore pipeline)



## Decision Coordination: Onshore projects

Agency	Activity
Federal Energy Regulatory Commission and CEQA lead agency (e.g. Port of Long Beach for SES)	Environmental review under National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) resulting in Joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR)
<b>Federal Process</b>	
Federal Energy Regulatory Commission	Natural Gas Act Section 3 approval
Other Federal Agencies	Other federal permits (e.g. U.S. Army Corps of Engineers)
<b>State/Local Process</b>	
Local Government (e.g. Port of Long Beach)	Certify Final EIR
	Coastal Development Permit and/or Harbor Development Permit Local land use permits (e.g. local lease)
California Coastal Commission	Federal consistency certification and Coastal Development Permit and/or appeal of local government CDP, if applicable
	Approval of Port Master Plan Amendment, if applicable
Other state agencies	Other state permits (e.g. air permits, water discharge permits)



# Safety Advisory Report

## A provision of the Federal Energy Policy Act of 2005:

- allows the Governor of a state with a proposed onshore LNG terminal to designate a state agency to consult with FERC regarding applications
- Governor Schwarzenegger designated the Energy Commission under this section
- directs FERC to consult with that state agency regarding state and local safety considerations
- allows the state agency to furnish an advisory report on State and local safety considerations to FERC



# Safety Advisory Report

- ❖ The Energy Commission prepared a Safety Advisory Report on the Long Beach terminal
  - Coordinated with other agencies in its preparation
  - Submitted September 2005
  
- ❖ FERC has not responded to the report



## Governor's Decision on Offshore Projects

- ❖ For offshore projects, federal law allows Governor to:
  - Approve, approve with conditions, or veto
  - No action taken within 45 days of final federal hearing is considered approval of the license
- ❖ LNG Interagency Working Group will provide information to facilitate Governor's consideration of the license application
- ❖ Governor's decision is independent of agency permitting decisions



# Thank you



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