

LNG's Role for Expanding Natural Gas Supplies and Update on West Coast Projects

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Presentation Topics

- California Economy-Energy Relationship
- State of California's Energy Policy
- Natural Gas and Supply Outlook
- Status of West Coast LNG Projects
- LNG Interagency Working Group
- LNG Permitting



The “Nation State” of California

- 6th largest economy of the world
- 5th 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



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.”



California's Natural Gas Situation

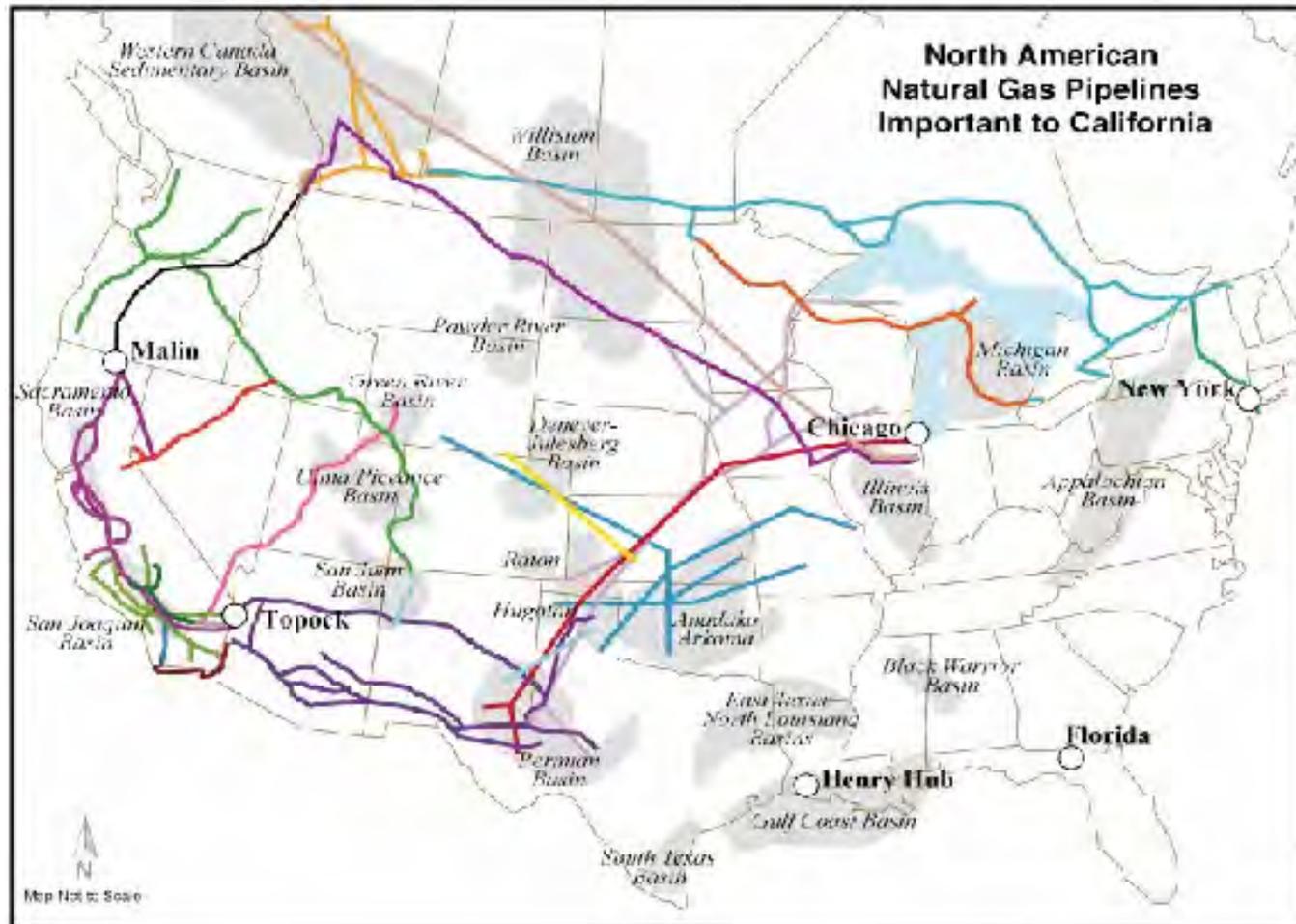
- California imports 87% of its natural gas
- U.S. and Canadian sources expected to decline in the future
- California demand expected to grow
- LNG provides another source of natural gas
- Delivery of gas from a West Coast terminal could hedge against supply/price problems in rest of country (e.g.,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



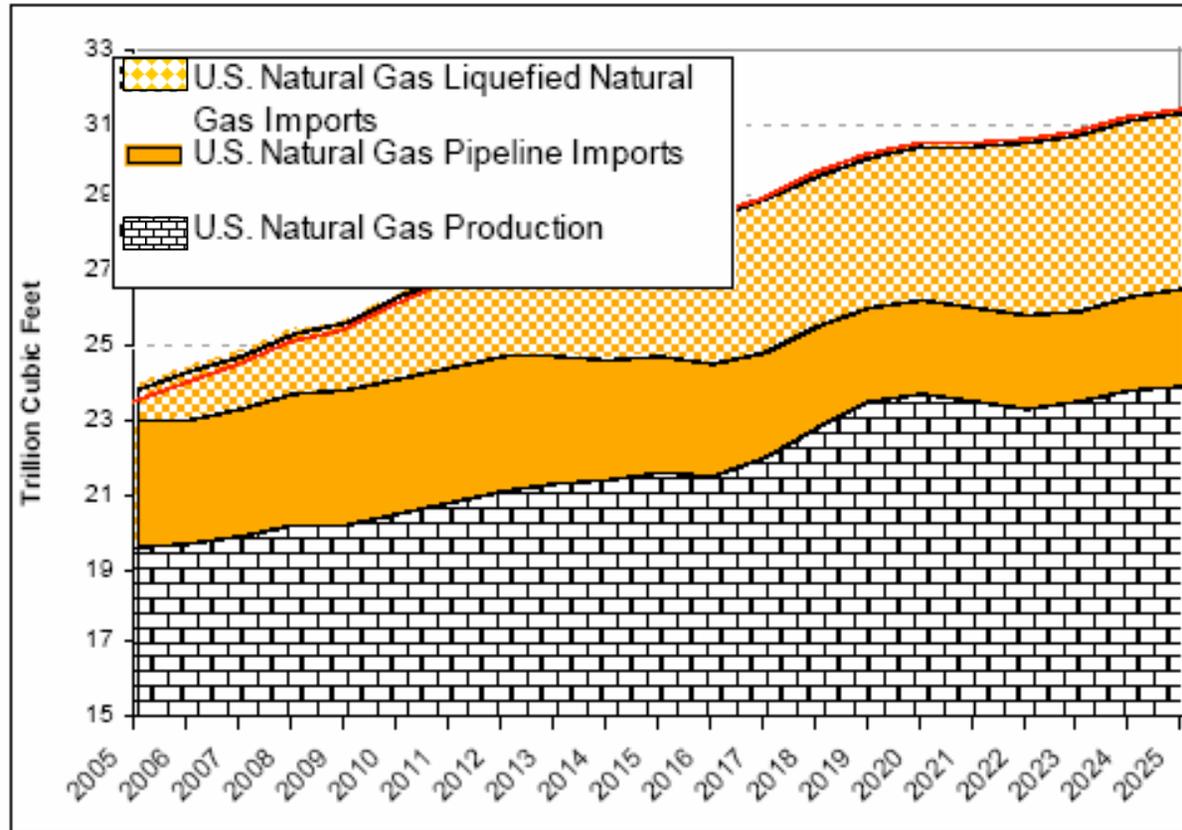
Interstate Pipelines Serving California



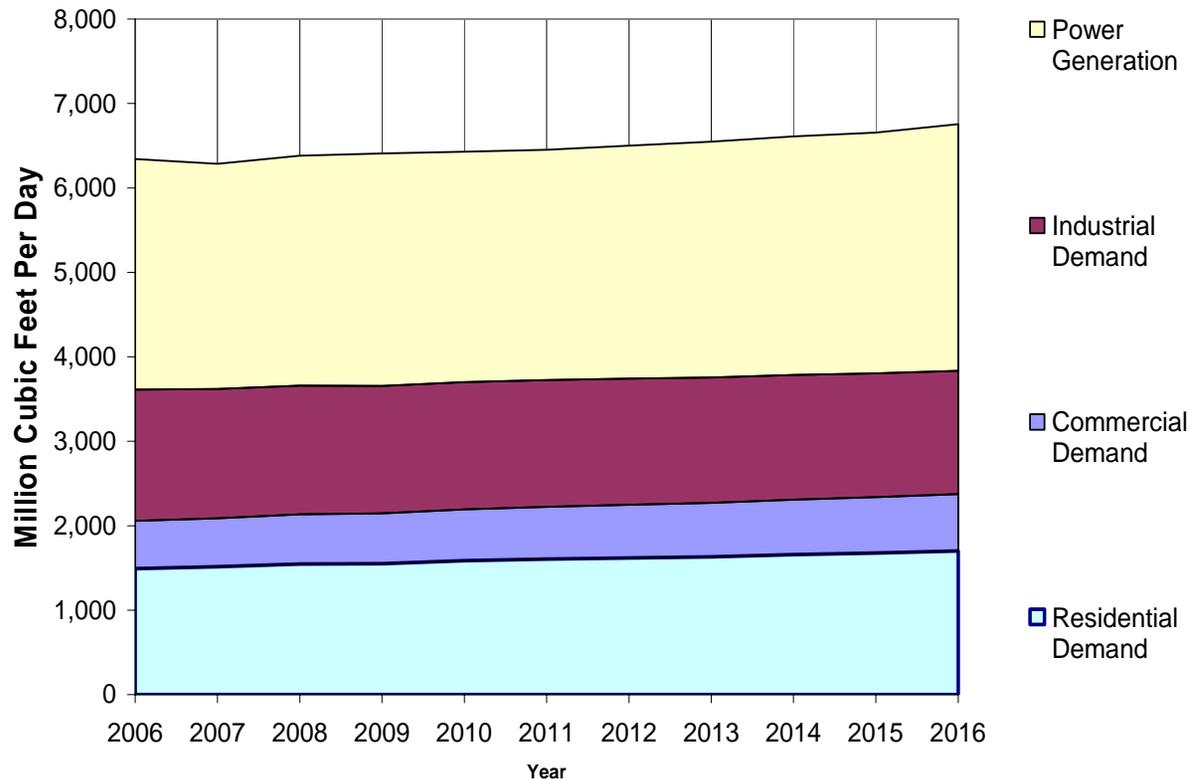
Natural Gas Pipelines



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



California's Projected Natural Gas Demand



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

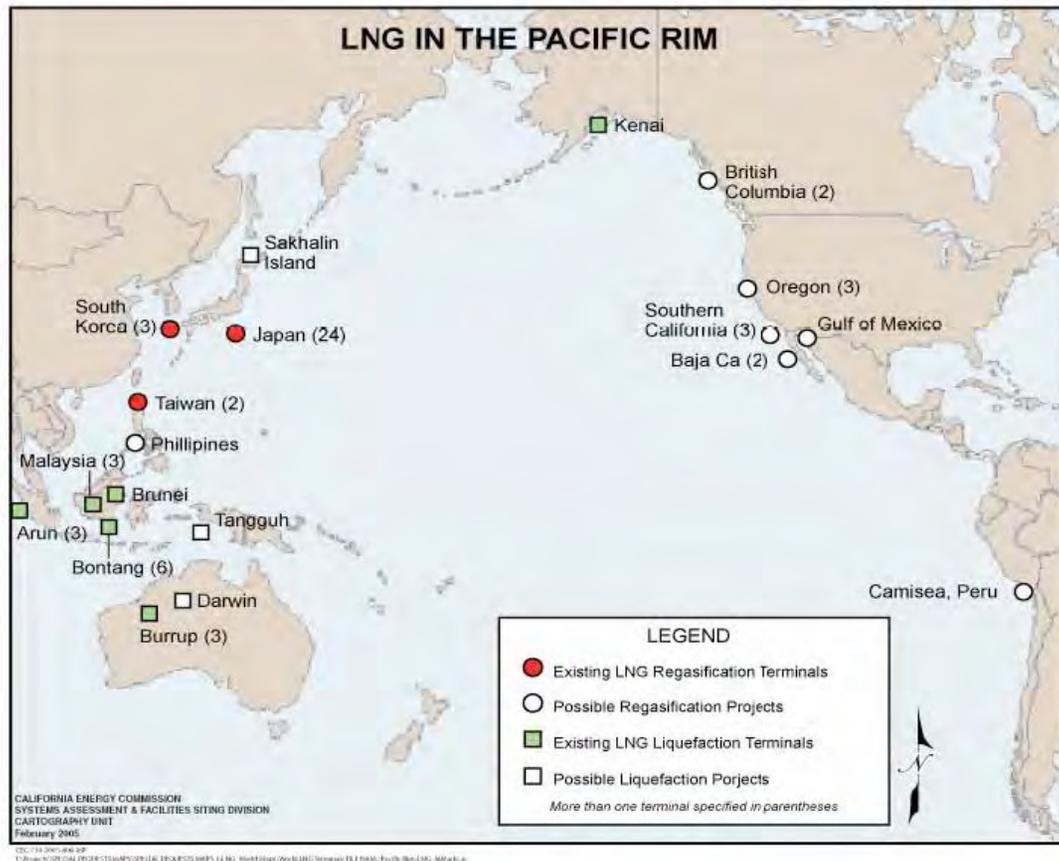


LNG Proposals on the West Coast (that would provide California with LNG)

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



A West Coast LNG Import Terminal would enable California to access Pacific Rim supplies



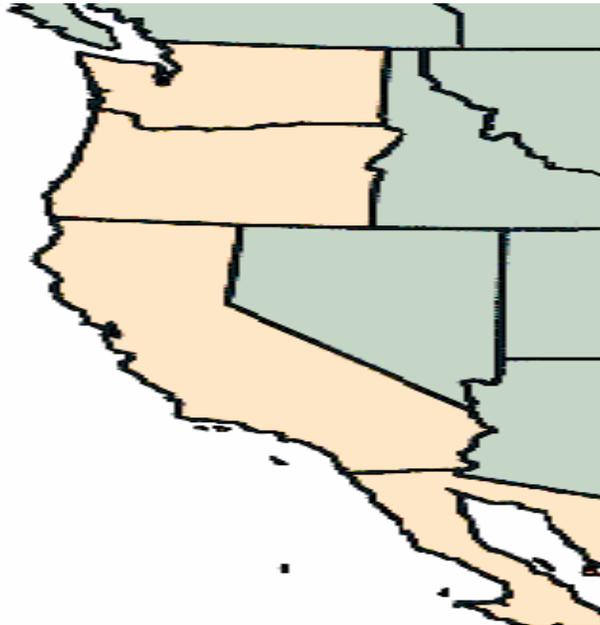
Potential Value to California

- 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>

West Coast LNG Projects



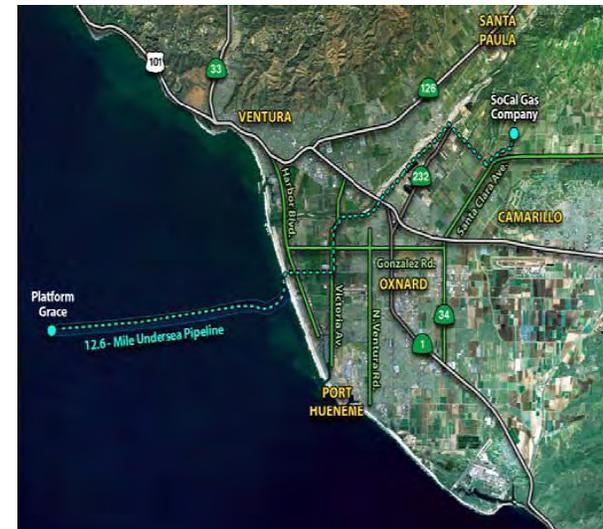
Cabrillo Deepwater Port LNG Facility

- California Location: 14 miles off the coast of Ventura County.
- Owner: BHP Biliton
- Capacity: 1.5 Bcfd
- Status: BHP Biliton is in the process of responding to comments made to the revised draft EIS/EIR. The final EIS/EIR is pending.



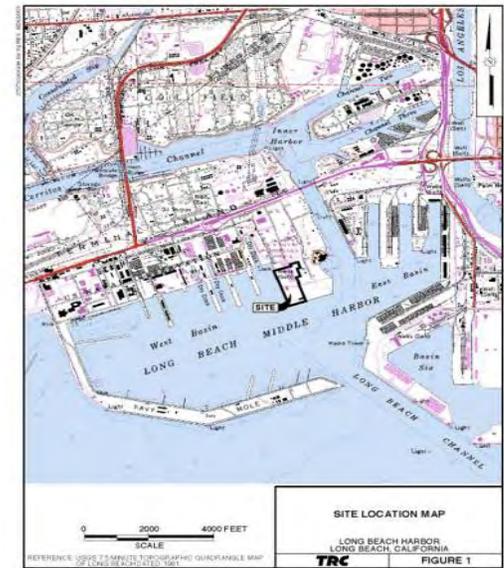
Clearwater Port LNG Project

- California Location: 12.6 miles offshore of the City of Oxnard, Ventura County in the Santa Barbara Channel.
- Owner: NorthernStar Natural Gas Inc.
- Capacity: 1.4 Bcfd
- Status: Clearwater Port filed the Updated Deepwater Port Application on 7/13/06.



Long Beach LNG Facility

- California Location: Pier T, Berth 126, on Terminal Island in the Port of Long Beach, Los Angeles County.
- Owner: Sound Energy Solutions (SES), a subsidiary of Mitsubishi Corporation
- Capacity: 1.0 Bcfd
- Status: A final EIS/EIR is expected to be released in November 2006.



Ocean Way LNG Terminal

- California Location: located in the Pacific Ocean about 22 miles south of Malibu, California.
- Owner: Woodside Energy, Inc.
- Capacity: 800 Mcfd
- Status: Woodside Natural Gas submitted the Deepwater Port Application to U.S. Coast Guard and City of Los Angeles on 08/18/06.



Terminal GNL Mar Aentro de Baja California

- Mexico Location: located 8 miles off the coast of Tijuana, Baja California.
- Owner: ChevronTexaco
- Capacity: 1.4 Bcfd
- Status: Front end engineering and design work begun in March 2004 is continuing and a final investment decision is expected in 2006 followed by a timetable on the first receipt of gas.



Moss-Maritime Project

- Mexico Location: Offshore facility 5.3 miles off the coast of Rosarito, Baja California.
- Owner: Moss-Maritime. Moss affiliate in Mexico is Terminales y Almacenes Maritimos de Mexico, S.A. de C.V. (TAMMSA).
- Capacity: 297 Mcfd
- Status: Mexico's environmental agency approved the project. Other permits are pending.



Energia Costa Azul LNG Facility



- Mexico Location: 14 miles north of Ensenada, on the Costa Azul plateau.
- Owner: Sempra Energy LNG Corporation
- Capacity: 1.3 Bcfd
- Status: Known court challenges have been resolved. This project has received all its permits and is under construction. Commercial operation is expected early 2008.

Kitimat LNG Facility

- Canada Location: Bish Cove near the Port of Kitimat, on Tidewater Douglas Channel.
- Owner: Galveston LNG Inc.
- Capacity: 1.0 Bcfd
- Status: Kitimat LNG Terminal received its Provincial Environmental Assessment Certificate on June 6, 2006 and a Federal Environmental Assessment permit is imminent.



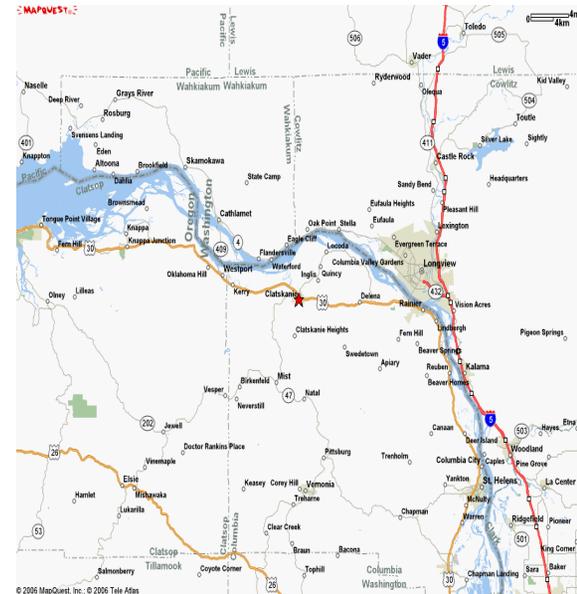
WestPac LNG Facility

- Canada Location: Ridley Island, British Columbia.
- Owner: WestPac Terminals, Inc.
- Capacity: 130 Mcfd
- Status: On June 6, 2006 Westpac filed its official Project Description with the Prince Rupert Port Authority, formally beginning the regulatory review and environmental assessment process for the project.



Port Westward LNG Facility

- Oregon Location: Adjacent to Port of St. Helens along the Columbia River about seven miles from Clatskanie, Oregon.
- Owner: Port Westward LNG LLC
- Capacity: 700 Mcfd
- Status: The port has approved a 99 year lease agreement. However the project still needs permits and financing.



Northern Star LNG Terminal

- Oregon Location: Bradwood, Oregon, on the southern shore of the Columbia River approximately 38 miles from the Pacific shoreline.
- Owner: Northern Star Natural Gas LLC
- Capacity: 1.3 Bfcd
- Status: Bradwood Landing LLC's application has been formally noticed by the FERC. FERC's official public notice now starts the "clock ticking" on FERC's comprehensive review process.



Skipanon LNG Facility

- Oregon Location: on 96 acres on Warrenton's Skipanon Peninsula, at the mouth of the Skipanon River.
- Owner: Calpine Corporation
- Capacity: 1.0 Bcfd
- Status: The Port of Astoria agrees to lease 96 acres to Calpine. However Calpine has not yet started the application process.



Jordan Cove Energy Project

- Oregon Location: on the bay side of the North Spit of Coos Bay, Oregon, about 6 miles north of the entrance of the bay.
- Owner: Energy Projects Development, LLC
- Capacity: 1.0 Bcfd
- Status: FERC and the US Coast Guard have scheduled a series of public meetings designed to provide the opportunity for public input on the scope of the agencies' environmental assessments.



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)
Federal Process	
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.
Governor's Decision	
Governor's Decision	Approve, Approve With Conditions, Deny, or No Action (presumed approved)
State/Local Process	
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)
Federal Process	
Federal Energy Regulatory Commission	Natural Gas Act Section 3 approval
Other Federal Agencies	Other federal permits (e.g. U.S. Army Corps of Engineers)
State/Local Process	
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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