



# LNG: Can it Work for California?

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LNG 2004: Supply, Demand, Market Change and Financing*

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# Today's Talk

- California's future natural gas needs
- Potential value of LNG
- Potential risks of LNG
- Issues needing resolution
- Actions underway



# California's Future Natural Gas Needs

- Integrated Energy Policy Report
- Electricity and Natural Gas Assessment Report
- Natural Gas Market Assessment Report

CEC Reports available at [www.energy.ca.gov](http://www.energy.ca.gov)



# California's Future Natural Gas Needs

## General Observations

- Current supply/infrastructure is adequate
- Prices are higher than desired
- Demand for natural gas is growing
  - In spite of aggressive EE and renewables activity
- Additional import capacity is needed
- Prices will continue to increase
- Prices will become more volatile





# Potential Value of LNG

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



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



# Potential Value of LNG

- Terminals in Baja and California
- California energy policy endorses both
- Value to Baja
  - Supply diversity for Baja
  - Balanced with pipes
- Value to California
  - Reduces risk of supply disruptions
  - Least-cost access to LNG

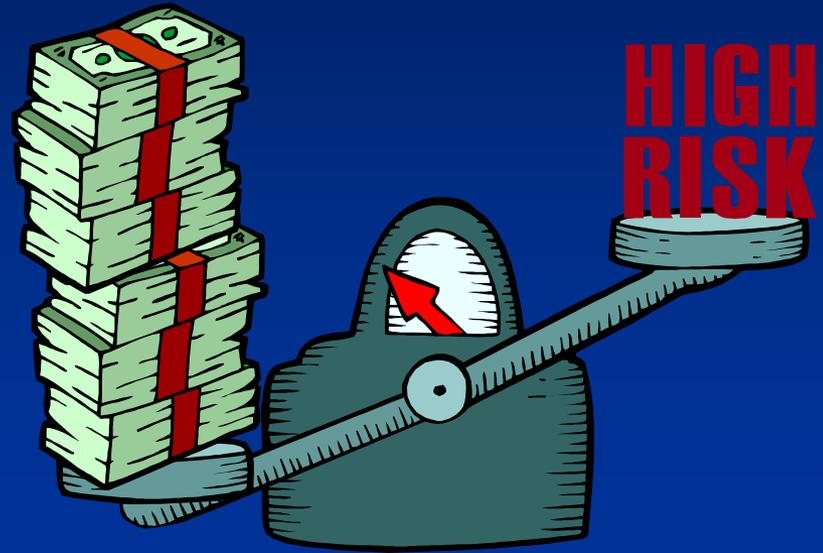


Elba Island Import Terminal, Georgia  
Photo Courtesy of CH-IV International, <http://ch-iv.com>



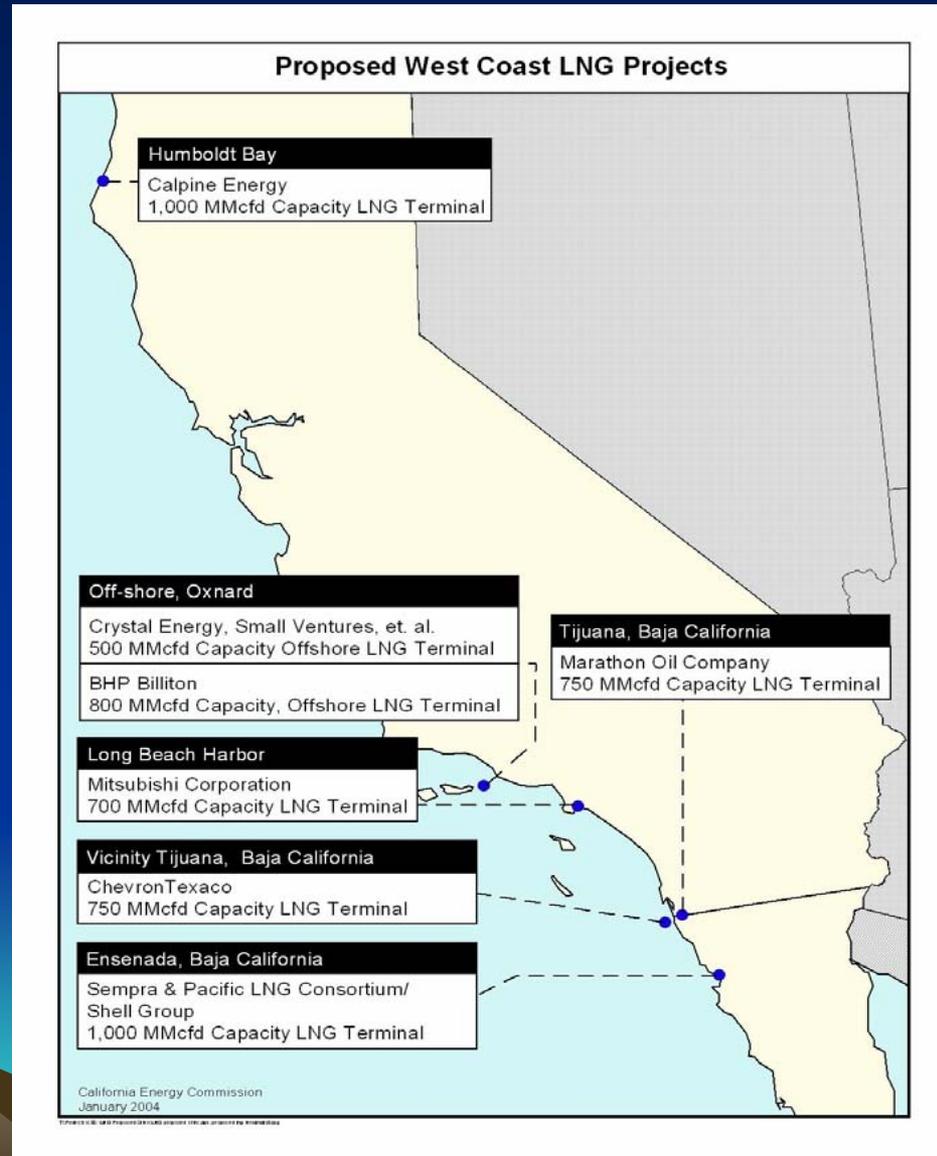
# Potential Risks of LNG

- Terminals:
  - Safety risks
  - Environmental risks
- Supplies:
  - Reduced control over supply source
  - Supply disruption could have significant impacts
  - Potential for market power abuse



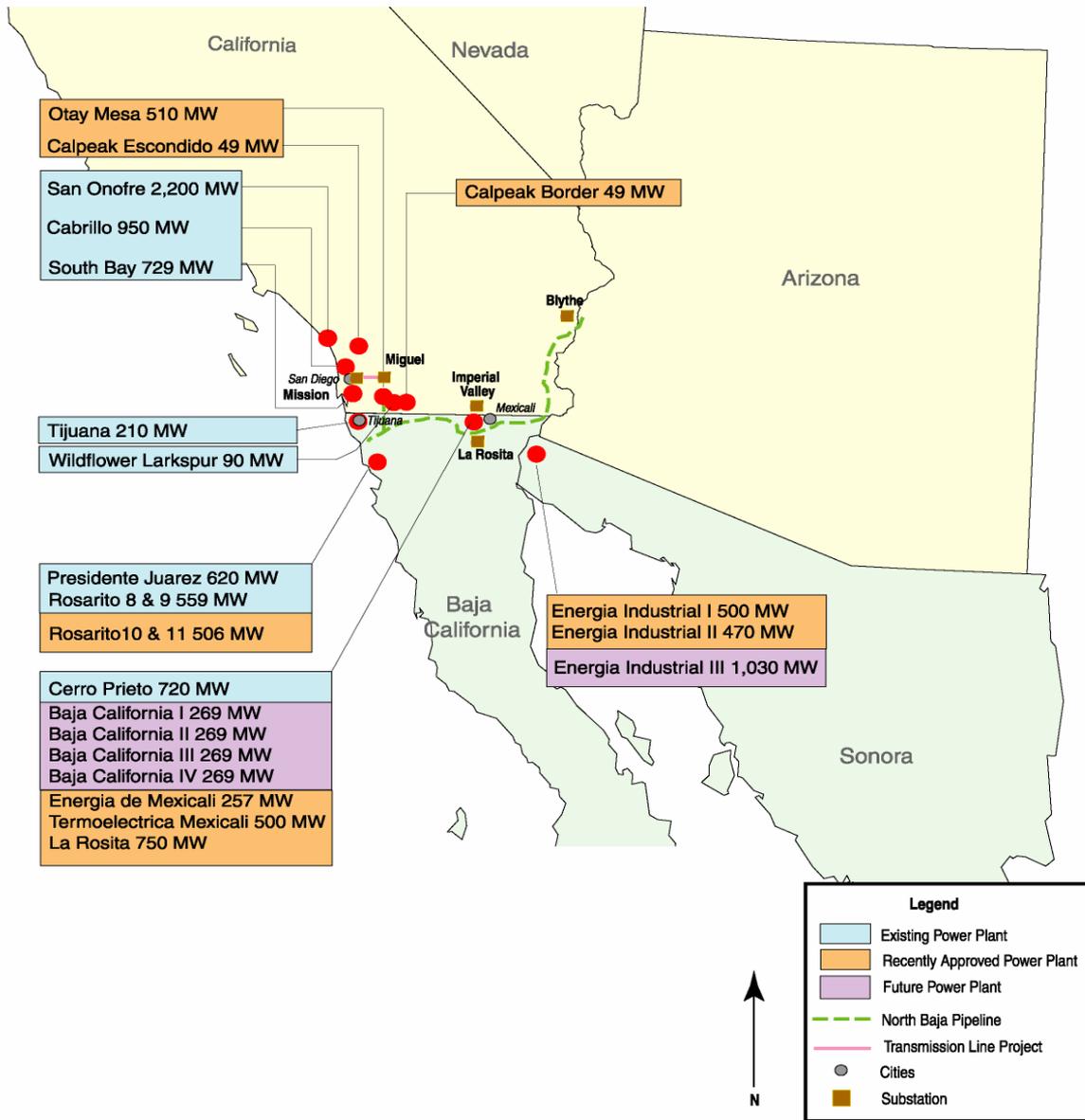


# West Coast LNG Proposals





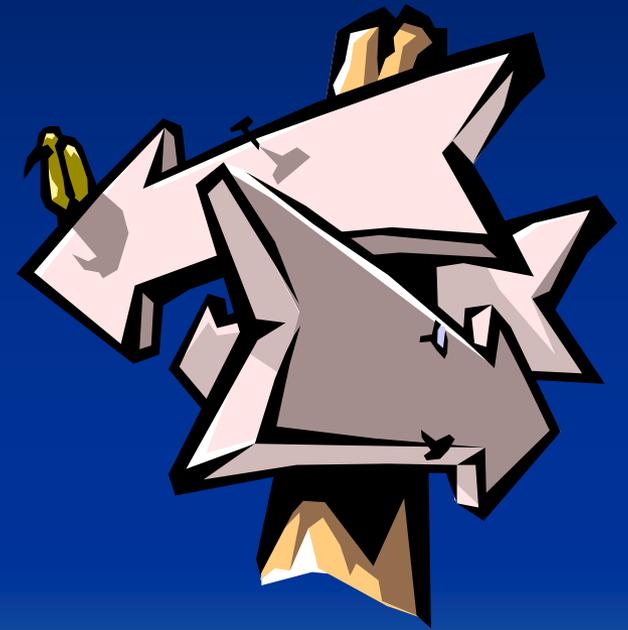
# Energy Projects In the California-Mexico Border Region





# Issues Needing Resolution

- Clarify natural gas quality standards
- Provide equal access to markets in California
- Define role of longer term purchase contracts
- Clarify potential pipeline upgrades
- Reduce risk of market power abuses
- Reduce uncertainty in terminal permitting
- Clarify international trade issues





# Natural Gas Quality Standards

- State gas quality standards
  - Pipeline Quality (CPUC)
  - CNG Vehicles (CARB)
- Differing standards in other states
- Worldwide LNG Btu content too hot
  - NOx emissions too high
- Little flexibility in standard





# Equal Access to Markets

- In-state pipe network designed to receive gas from East and North.
- Regulatory rules originally designed for pipelines and domestic supply sources.
- Delivery points and acceptance rules need reexamination.



# Longer Term Purchase Contracts

- LNG terminals are capital intensive.
- Investors need longer term assurance.
- California has a mixed history on long term contracts.
  - Risks of overpaying
  - Risks of buying too much
- Can ratepayer protection be balanced with investors' needs?



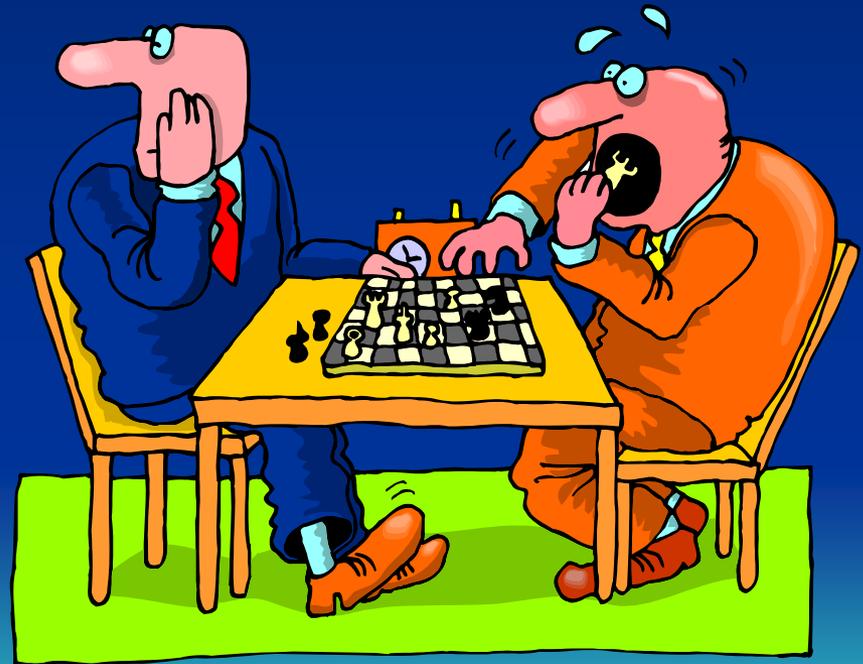
# Potential Pipeline Upgrades

- In-state pipe system not designed for significant flows from West or South
- Flows from Baja
  - Can use existing pipe/Ehrenberg hub
  - Limited new capacity
  - Significant flows require pipe upgrades
- Flows from California coast
  - Require downstream pipe upgrades



# Risk of Market Power Abuses

- Single supplier controls significant quantities
- Current FERC policy allows LNG terminal operator to control access to terminal.





# Uncertainty in Terminal Permitting

- No single stop permitting agency
- Many agencies involved
- Local communities very concerned about safety risks
- LNG is “new” to California





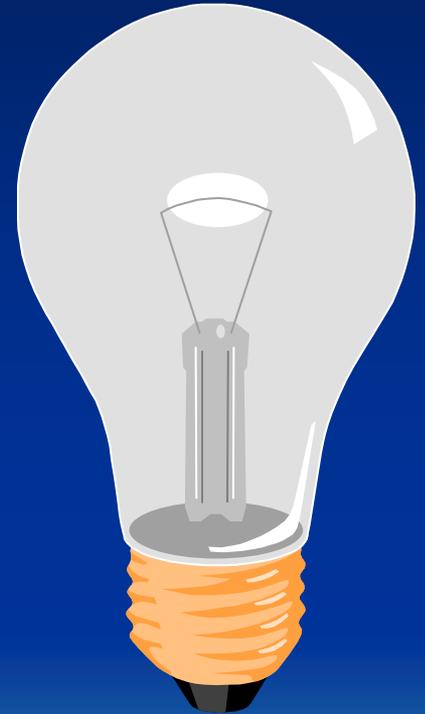
# Clarify International Trade

- NAFTA addressed US exports of NG to Mexico, not imports
- Need symmetry in trade
- Need certainty in long term trade policies



# Actions Underway

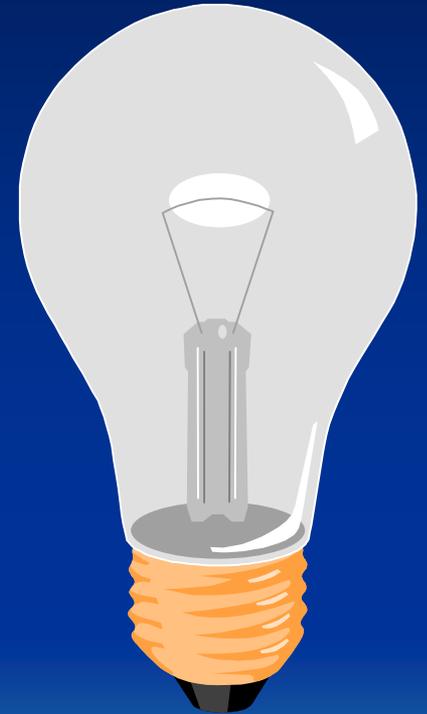
- Natural gas quality standards
  - Joint research study on emissions—  
SoCalGas
  - ARB reconsidering standard
  - LNG developer commitment
    - LNG gas conditioning at import terminal
    - LNG gas conditioning at export terminal
  - Natural Gas Working Group
  - FERC Technical Conference
  - ARB resolution expected by end of this year





# Actions Underway

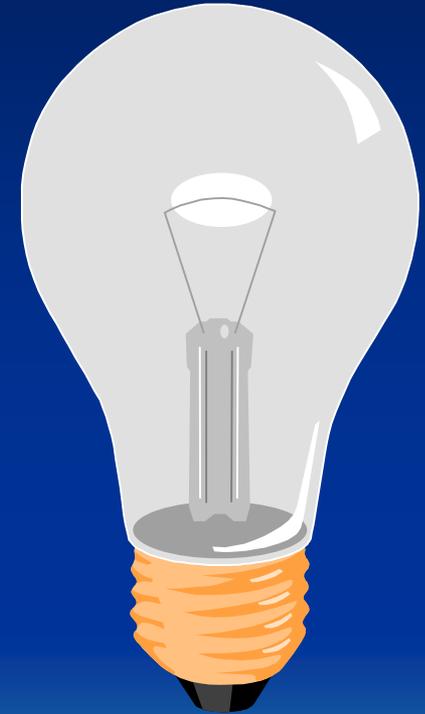
- Equal Access to Markets
  - NG Infrastructure Workshop last December
  - CPUC Natural Gas OIR
    - Specifically addressing LNG access
    - Expect preliminary ruling later this year





# Actions Underway

- Longer term purchase contracts
  - Integrated Energy Policy Report
  - Energy Action Plan
  - CPUC NG OIR
  - Long term vs. longer term
  - Portfolio approach to contracts
  - Preliminary guidance later this year





# Actions Underway

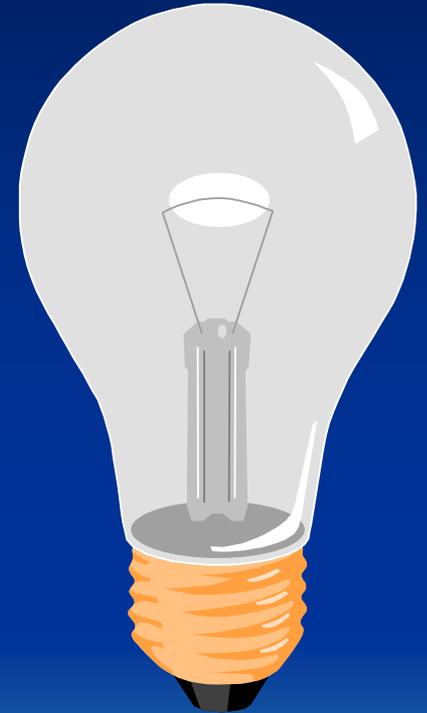
- Potential pipeline upgrades
  - CPUC proceeding last year
    - Defined options
    - Defined preliminary costs
  - NG Infrastructure Workshop last December
  - CPUC NG OIR addressing issue
  - California LNG developers have committed to pay for upgrade costs





# Actions Underway

- Risk of market power abuses
  - FERC established Office of Market Oversight and Investigation
  - CPUC has established oversight authority to protect Core ratepayers
  - Energy Commission closely monitors markets
  - FERC/CPUC/Energy Commission working closely together





# Actions Underway

- Uncertainty in terminal permitting
  - California established the LNG Interagency Permitting Working Group
  - Agency review is now coordinated
  - FERC/USCG and State working closely together

Public information available at  
[www.energy.ca.gov/lng](http://www.energy.ca.gov/lng)



# Actions Underway

- Clarify international trade
  - Border Governor's Conference will soon address issue
  - Stanford University conducting research
  - Energy Commission very interested in meeting with our Mexican colleagues



# LNG: Can it Work for California?

- LNG offers significant potential benefits
- LNG also poses significant risks
- California has successfully dealt with controversial projects in the past
- California is taking action to allow LNG to be fully considered
  - Baja terminals
  - California terminals
- California is very interested in working with our southern colleagues to resolve all issues



# Questions?