

Clearwater Port

**California State Senate
Energy, Utilities and Communications Committee**

LNG Permitting Process Informational Hearing

Sacramento, CA – October 27, 2005

Crystal Energy

PROJECT DESCRIPTION



Crystal Energy, proponents of the Clearwater Port project, shares the Committee's goal of ensuring that LNG projects are safe, environmentally sound and the best option to provide affordable, reliable, clean burning natural gas to California



Clearwater Port is the environmentally superior solution for meeting the state's natural gas needs, and its open access type "tolling arrangement" provides incentives to maximize throughput rather than withhold capacity, increasing gas supply diversity and reliability for California consumers.

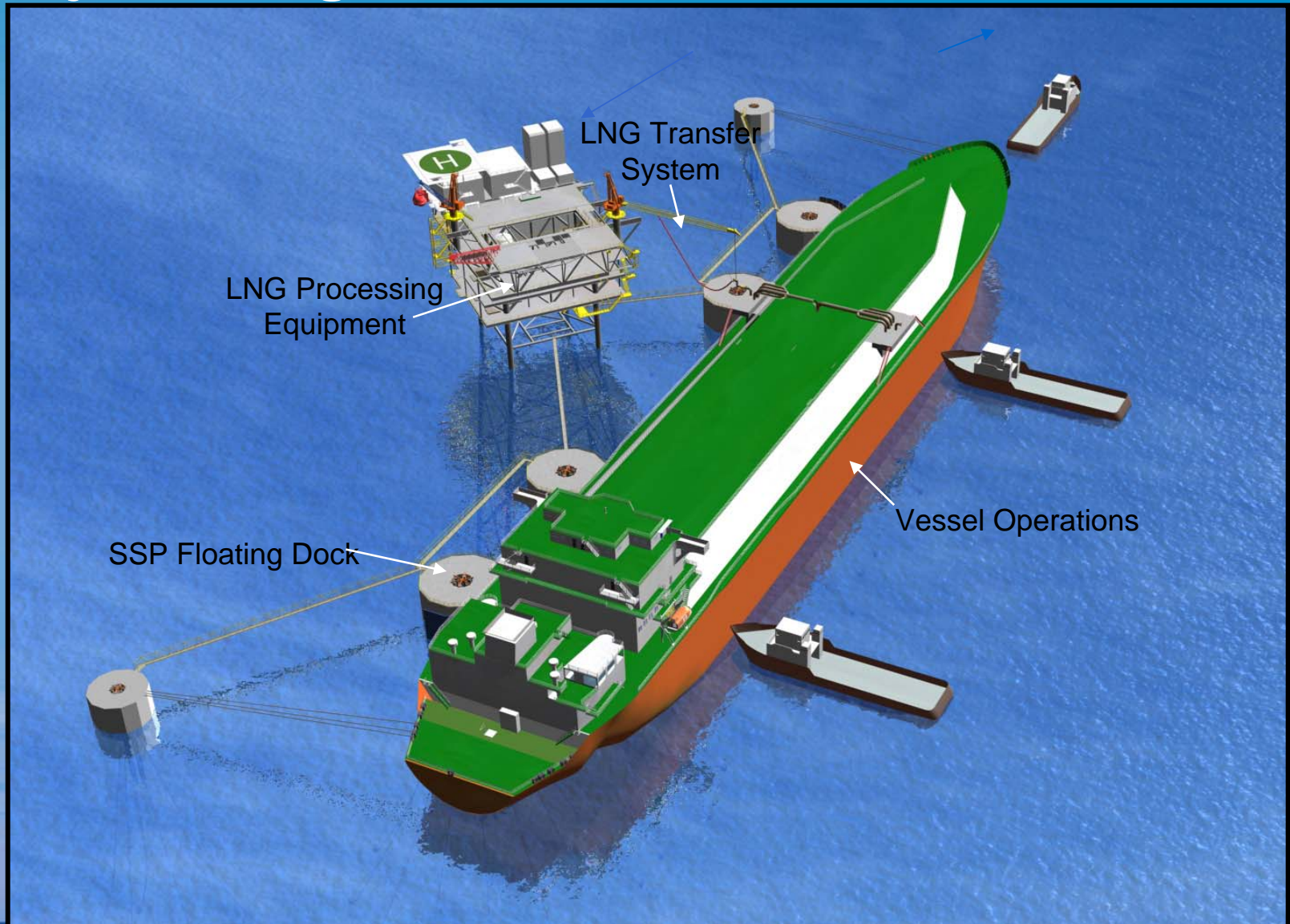


Clearwater Port - Project Description

- ❑ Conversion of existing Platform Grace to a State of the Art LNG Receiving and Regasification Facility
 - Used exclusively as an LNG facility
- ❑ Design capacity of up to 1.4 Bcf/day
- ❑ SSP Floating Dock Adjacent to Platform to safely moor LNG Vessels
- ❑ Transfer of LNG from the Vessel to the Platform Using Cryogenic Hose or Unloading Arm System
- ❑ Regasification of LNG on Platform using Forced Air Vaporizers
- ❑ State of the Art 36 inch Offshore and Onshore Gas Pipeline
- ❑ Interconnect with Existing SoCal Trunkline System
- ❑ Direct offloading and delivery into SoCal pipeline system; no offshore storage



Project Design



Project Safety

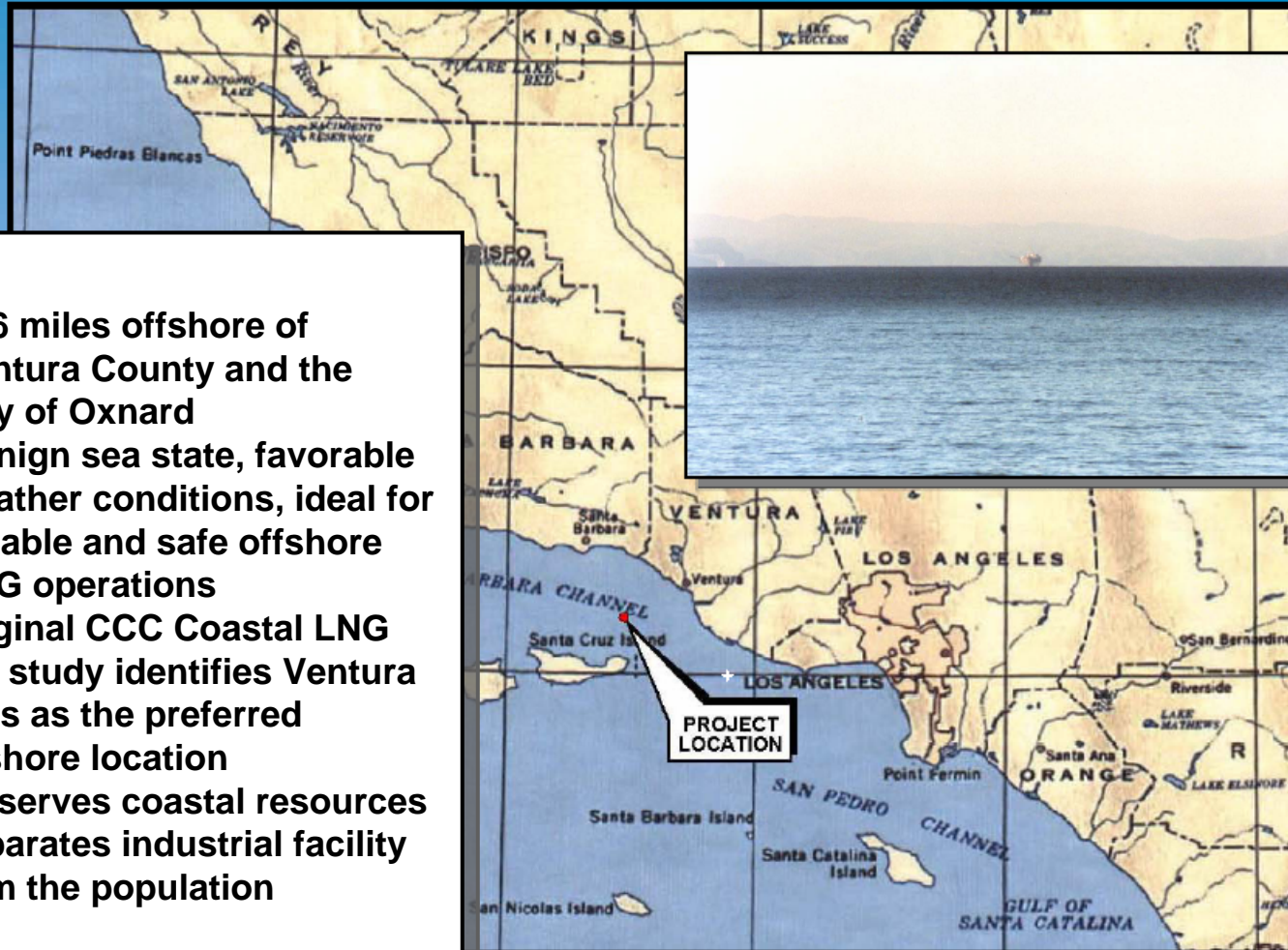
Clearwater Port is the environmentally superior solution for meeting the state's natural gas needs

- **Remotely located**
- **Maximizes use of existing infrastructure**
- **Minimizes environmental impact**
- **No LNG storage included in Project**



Clearwater Port – Remote Offshore Location

- 12.6 miles offshore of Ventura County and the City of Oxnard
- Benign sea state, favorable weather conditions, ideal for reliable and safe offshore LNG operations
- Original CCC Coastal LNG site study identifies Ventura Flats as the preferred offshore location
- Preserves coastal resources
- Separates industrial facility from the population



Project Safety

- **Maximizes use of existing infrastructure**
 - Located on an existing platform – Platform Grace
 - Gas pipeline comes onshore at an existing industrial facility



Onshore Pipeline System



Platform
Grace

Offshore Pipeline

- New 36 inch gas pipeline located adjacent to an existing offshore pipeline corridor.
- Minimizes impacts to other user groups (i.e. commercial fishermen).
- Soft bottom area with no significant hard bottom or sensitive biological areas.
- Directional Bore crossing of beach into existing industrial facility.
 - Minimizes impacts to sensitive biological resources
 - Minimizes potential impacts to recreational users.

Onshore Pipeline

- New 36 inch gas pipeline located within an existing public right of ways or agricultural areas.
- Originates and terminates within existing industrial sites.
- To be owned and operated by SoCal Gas.
- Four alternative routes included in application.
- Freshwater pipeline tie-in to City system.

PORT
HUENEME

OXNARD

CAMARILLO

VENTURA

SANTA
PAULA

SoCal Gas
Company

101

33

126

232

1

Gonzalez Rd.

Harbor Blvd.

N. Ventura Rd.

Santa Clara Ave

Project Safety

- **Minimizes environmental impact**
 - **Regasification does not involve seawater circulation**
 - **Ambient air vaporizers minimize air emissions**
 - **Uses existing offshore pipeline corridor**

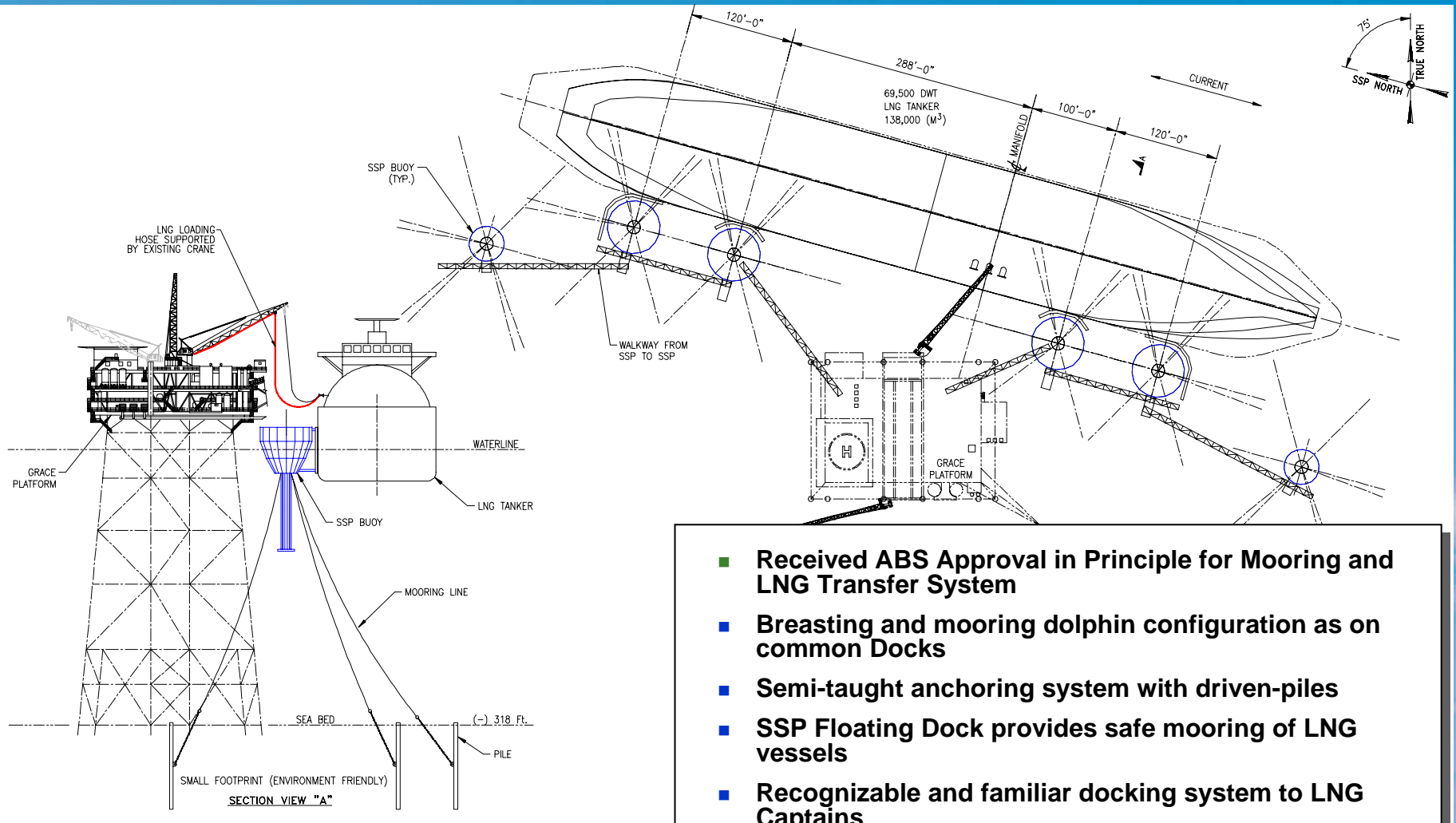


Clearwater Port – Limited Impacts to Marine Resources

- No seawater intake
- Facilities are located away from sensitive onshore and offshore resources areas
- Project will utilize established and proven mitigation programs for marine resources and other commercial and recreational users



Satellite Service Platforms (SSP) Floating Dock



- Received ABS Approval in Principle for Mooring and LNG Transfer System
- Breasting and mooring dolphin configuration as on common Docks
- Semi-taught anchoring system with driven-piles
- SSP Floating Dock provides safe mooring of LNG vessels
- Recognizable and familiar docking system to LNG Captains
- Tug assist and power capstan mooring hooks



Clearwater Port – Reduced Air Emissions

- Project air emissions are lower than typical LNG projects
 - Designed to use **Selective Catalytic Reduction Equipment and Forced Air Vaporizers**
 - Overall emissions reduced with project enhancements
 - Minimal air emissions



Project Safety

- **No LNG “Inventory” included in Project**
 - **Direct delivery into the existing and extensive SoCal gas transmission and storage infrastructure**



Clearwater Port – Unique Attributes

- **Clearwater Port has a number of unique attributes that ensure that California receives the lowest cost and most competitive and reliable supply of natural gas**
 - **Open Access type ‘tolling model’**
 - **Low Capital Cost**
 - **Fast Track to Operations**



Clearwater Port – Open Access

- Clearwater Port provides terminal services and access to California market to ANY and ALL LNG suppliers who satisfy regulatory requirements
 - Not captive to its own supply source
 - Contract with price competitive and reliable suppliers
 - “Tolling” type model – Clearwater Port will be a terminal service provider and will not take title to LNG or natural gas processed through the facility
 - Open access type “tolling arrangement” provides incentives to maximize throughput – not withhold capacity. This arrangement is in the best interest of the state and consumers
 - Prefers the most competitive gas supply source
 - ie. Suppliers other than suppliers who are developing captive LNG terminals will have access to market
 - Increases Gas on Gas competition
 - Increases natural gas supply security



Clearwater Port – Low Capital Cost

- **Clearwater Port's low capital cost increases project flexibility**
 - Capital cost of less than \$350 MM
 - Low cost option for consumers



Clearwater Port – Fast Track to Operations

- **Clearwater Port is on the fastest track to operations**
 - 18-20 month construction period versus 48 months for alternative offshore applications
 - Allows Clearwater Port to provide California with lower cost gas sooner to help meet California's growing energy demand



Additional Benefits to Oxnard & Ventura County

- Crystal Energy believes strongly that the host city and county, Oxnard and Ventura County, should receive additional benefits.



Benefits to Oxnard & Ventura County

**A Fuel Cell
Donated for
City and
County Use**



**Clean, Fresh
Water Provided at
No Cost to Oxnard
City Council**



**Clean-Burning
Natural Gas at
Advantageous
Pricing**



**Scholarships
for Local
Students up to
\$800,000 per
annum**



Clearwater Port – Project Status

- In response to agency comments, Crystal is working actively to enhance and refine the Clearwater Port project.
- Identified project enhancements are undergoing an extensive and rigorous environmental, safety and engineering peer review
- Expending resources to expedite our response to agency comments
- Anticipate filing a supplement to our pending application in the first quarter of 2006



Permitting Process



Clearwater Port is presently working through the Local, State and Federal permitting process for LNG terminals





Permitting Process

- **Existing Process Rigorous and Appropriate**
 - The existing environmental review process is rigorous, exhaustive and adequate to determine project viability and appropriateness
 - Input and comments received by agency have improved the design of Clearwater port







Comprehensive Review Process



STATE ENVIRONMENTAL AND SAFETY REVIEW

-  California State Lands Commission review and approval of EIR and pipeline lease
-  Preparation of Environmental Impact Report (EIR) to comply with California Environmental Quality Act
-  California Coastal Commission review and approval of Coastal Development Permit and federal consistency determination
-  Governor's Review and decision pursuant to the Deepwater Act

FEDERAL ENVIRONMENTAL AND SAFETY REVIEW

-  United States Coast Guard review and approval of vessel safety and mooring design under the Deep Water Port Act
-  Preparation of Environmental Impact Statement (EIS) to comply with National Environmental Policy Act
-  Federal Minerals Management Service review and approval of EIS, DDP amendment and line lease
-  Federal Environmental Protection Agency review and approval of air and discharge permits

LOCAL ENVIRONMENTAL AND SAFETY REVIEW

-  City of Oxnard review and approval of EIR and Coastal Development Permit
-  County of Ventura review and approval of EIR and Encroachment Permit
-  Ventura County Air Pollution Control District Review of Air Permit

These are key permits. There are numerous other agency approvals and permits required.



Permitting Process

- **State Currently has Extensive Role**
 - The state's role in the permitting process is extensive, especially for offshore proposals
 - **California State Lands Commission: Lead agency under CEQA**
 - Charged with ensuring that the project's potential impacts are identified and mitigated
 - CSLC is a recognized expert agency with a tremendous command of the requirements of CEQA
 - Significant force in the permitting process



Permitting Process

- **California Coastal Commission: Responsible agency**
 - While not the lead agency, the CCC will participate in the environmental review
 - The CCC will also have direct and indirect permitting authority over any project
 - Has federally delegated authority under the federal Coastal Zone Management Act (CZMA) to ensure that the projects will be consistent with federal coastal zone management policies



Permitting Process

- Numerous other state agencies will participate in the joint CEQA/NEPA environmental review process and many of these agencies will have to issue permits or other approvals for the project
 - For example, the California Department of Fish and Game, the local air quality management districts, the local Regional Water Quality Control Board, the State Fire Marshall, and the State Historic Preservation Officer will actively participate and protect the interest of California's citizens and the environment
 - Governor: Significant role in licensing an offshore deepwater port AND must approve Project application



Energy Climate/Need Established

- The case has already been made that there is a proven need for additional natural gas supplies in California
- CEC have studied the issue and confirmed California needs additional supplies of natural gas
- California imports 87% of its natural gas and is at the end of the western United States pipeline
- Hurricanes Rita and Katrina demonstrated the fragility of US energy delivery infrastructure
 - Significant portion of the nation's gas production was disrupted
 - Demonstrated the need for diversification of energy delivery systems and the need for states like California, at the end of long interstate pipelines, to have direct access to gas supply
- Prices at historic high – exceed price levels during energy crisis – Market is confirming results of CEC study, that gas supply is inadequate to meet demand
 - California Consumers likely to see a 50% increase in natural gas prices this winter
 - Issue of availability supply, not pipeline capacity
 - LNG provides California with direct access to abundant supply of Pacific Basin LNG



- Clearwater Port can deliver up to 1.4 billion cubic feet of natural gas each day, providing about 25% of the state's residential demand for natural gas.

Platform Grace
12.6 - Mile Undersea Pipeline

Provides 25% of California's Residential Demand



Crystal Energy

Open Access Type “Tolling Model”



Clearwater Port - Long Term Reliable Gas Supply for California

- **Offshore LNG terminals are the best solution for California**
 - Preserves coastal resources
 - Remotely located – separates industrial facility from the population
 - California weather and sea conditions are well suited for offshore operations, especially in the Ventura Flats area



Clearwater Port - Project Access Attributes

- **Low capital cost increases project flexibility**
 - Capital cost of less than \$350MM
 - Lowest cost project on West Coast
 - Allows Project to be flexible with the market
 - Low cost option for consumers
- **Fast track to operations**
 - 18-20 month construction period versus 48 months for alternative offshore applications
- **Independent terminal service provider**
 - Crystal Energy is not captive to its own supply source
 - Contract with price competitive and reliable suppliers
 - “Tolling” type model – Clearwater Port will be a terminal service provider and will not take title to LNG or natural gas processed through the facility



Important Considerations

- **Natural Gas industry values certainty and stability**
 - Firm and reliable access to SoCal gas system
 - Fair and reasonable system rights
 - Gas balancing and access to storage
 - System upgrades based upon displacement capacity
- **LNG supply for California will need to be specifically developed to meet California gas quality specifications**
 - Massive upstream investment, compared to cost of receiving terminal
 - Cost of supply reduces with infrastructure efficiency – volume business and time commitments
- **LNG will be a dedicated gas supply to California**
 - Captive to SoCal system (limited off-system transportation rights)
 - Additional supply alternatives stabilize California consumer gas prices
- **California gas supply security is enhanced by delivery of LNG directly to California**
 - Particularly if LNG is delivered through LNG terminals that are available to accept LNG cargoes from multiple suppliers - ie. Not captive to terminal owners' dedicated supply
 - Eliminates conflict of interest between integrated LNG supplier/terminal owner and consumers



Clearwater Port Approach – Tolling Model

- **Non-discriminatory terminal service provider**
 - Allow customers to contract directly with LNG suppliers

- **Contract with “foundation customer” to underpin project financing**
 - Long term capacity commitment to project will result in a lower overall infrastructure cost (supply infrastructure and terminal receipt infrastructure) and hence a lower cost of supply
 - Greater than 60% of terminal capacity
 - 20 to 25 year time commitment
 - Increases supply security for California
 - Prefer an LNG supplier who has necessary reserves to supply California to be foundation customer
 - Understand business and business time horizons
 - Developing competitive supply purposely for and committed to California
 - Financial wherewithal to underpin LNG value chain investment

- **Reserve remaining terminal capacity for use by gas market participants or other LNG suppliers**
 - Capacity release provisions – use it or loose it
 - Any unused capacity will be available for use by other third parties who can meet terminal service use requirements
 - Consistent with successfully developed terminals in Gulf Coast (Freeport, Sabine) and Baja (Shell/Sempra with BP as supplier)

- **Crystal Energy is economically motivated to ensure facility capacity is fully utilized and incentivized to attract most competitive and reliable source of LNG**



Clearwater Port - Benefits of Tolling Model

- **Increases gas-on-gas competition**
 - Low cost terminal, lower cost of gas supply
- **Increases gas supply security and prefers most competitive LNG supply projects**
 - All potential suppliers will have access to the market, not just those who develop/own LNG receiving terminals
- **Allows gas customers to contract directly with LNG suppliers**
 - Enhances contract flexibility, eliminates “middle men”
- **Infrastructure owner does not take title to LNG or gas, minimizing market power concerns**
- **Infrastructure owner is incentivised to ensure terminal capacity is fully utilized**
 - Use it or lose it approach
- **Ensures most competitive supply and terminal projects are developed**



Clearwater Port

Clean, Safe Energy

Crystal Energy