Regulatory Overview of LNG

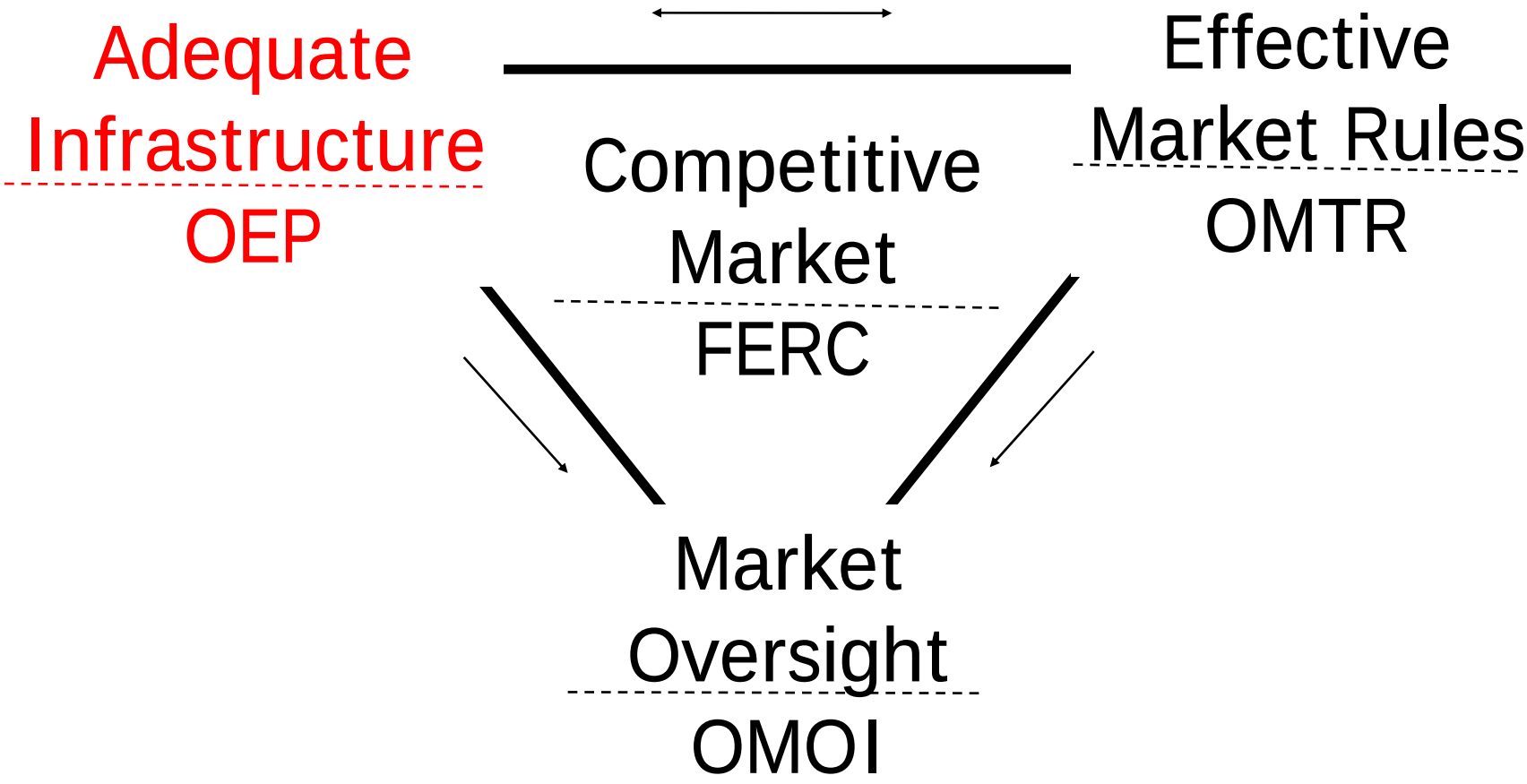
LSU Center for Energy Studies Energy Summit

Baton Rouge, Louisiana

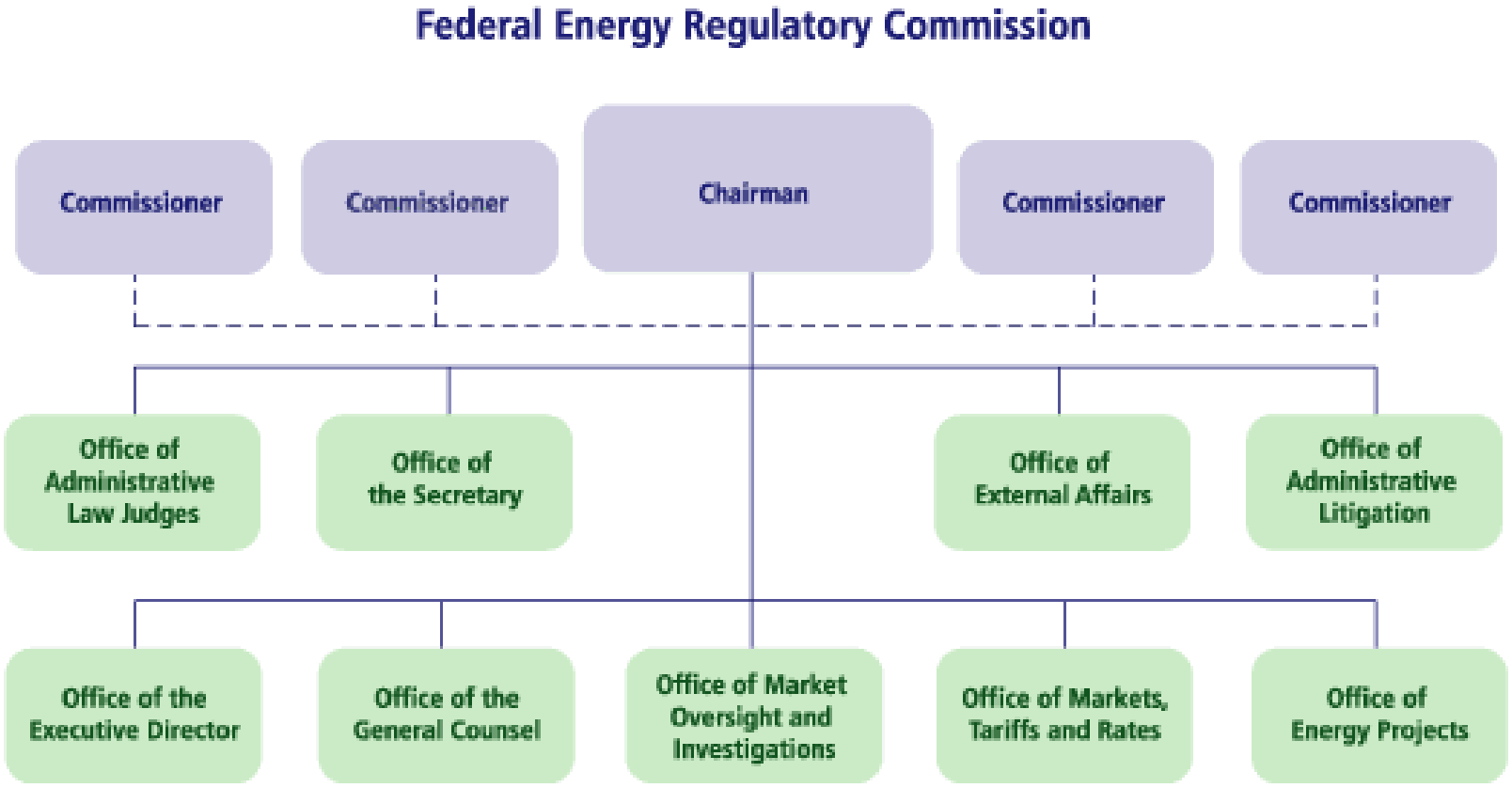
October 20, 2005

Robert Cupina, Deputy Director, Office of Energy Projects

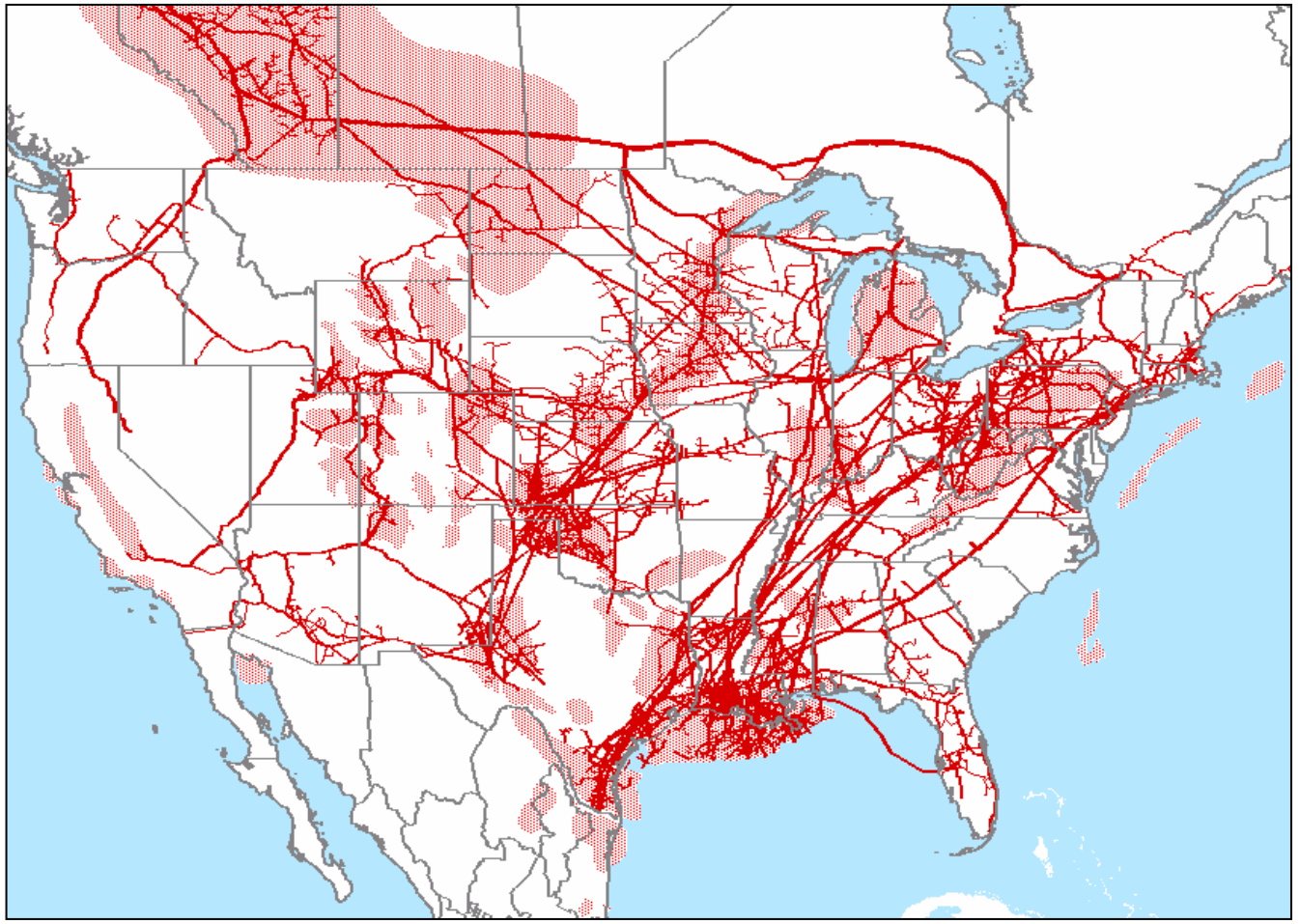
FERC
Helping Markets Work



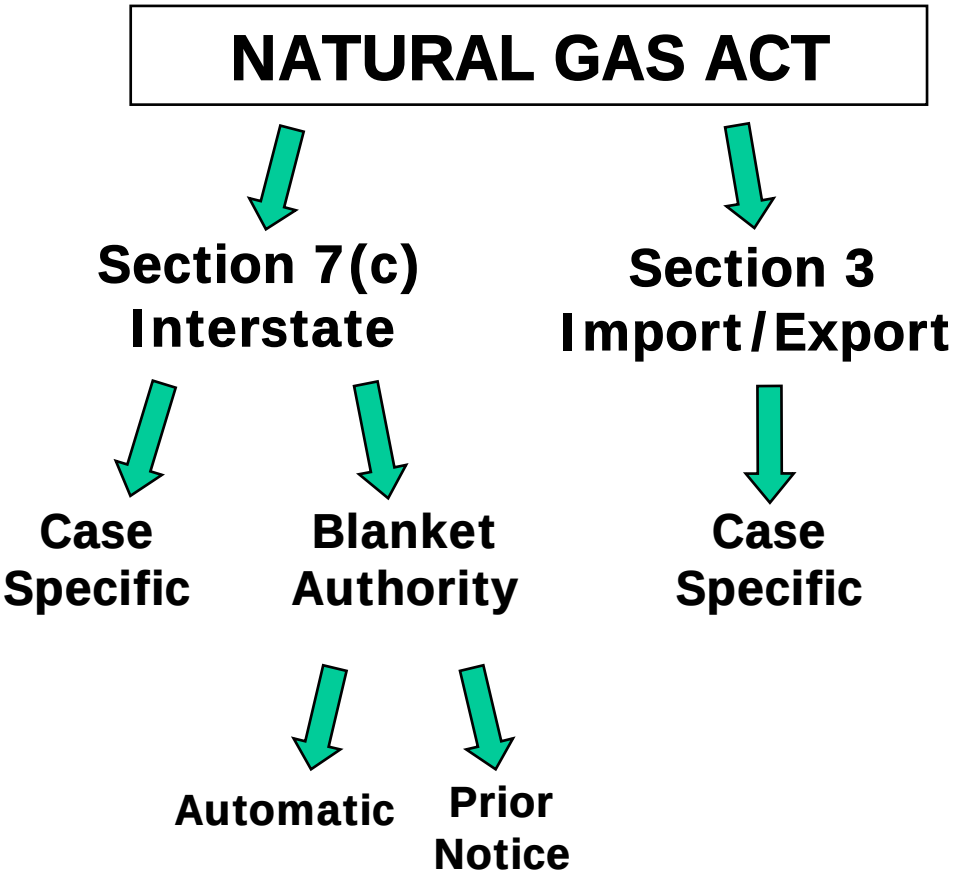
FERC Organizational Structure



Major Interstate and Canadian Pipelines and Gas Production Areas



Natural Gas Act

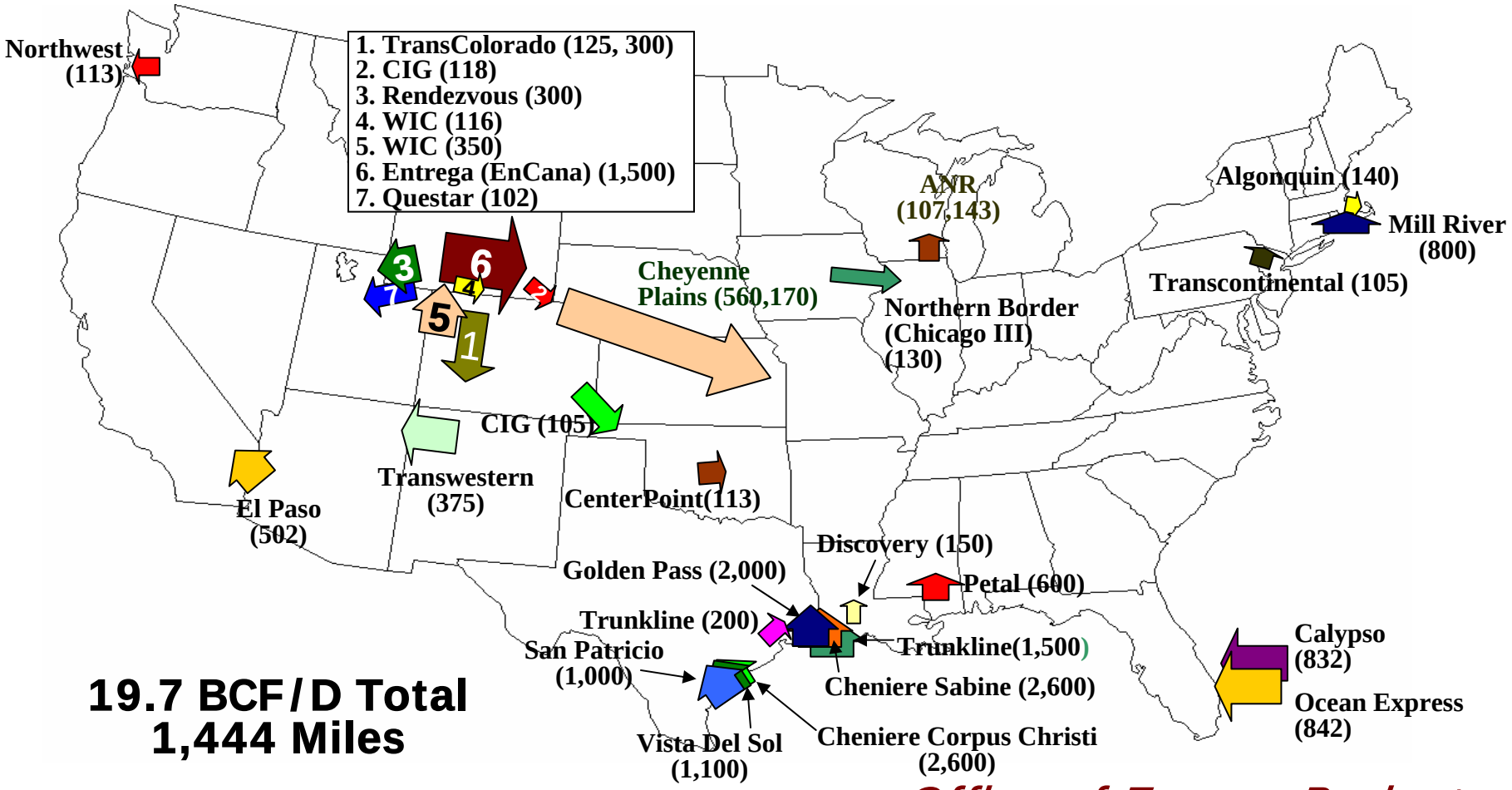


Natural Gas Act

- Case Specific Section 7(c) and 3
  - Conduct a full review of proposal including engineering, rate, accounting, and market analysis
  - Conduct an environmental review by preparing an Environmental Assessment or an Environmental Impact Statement

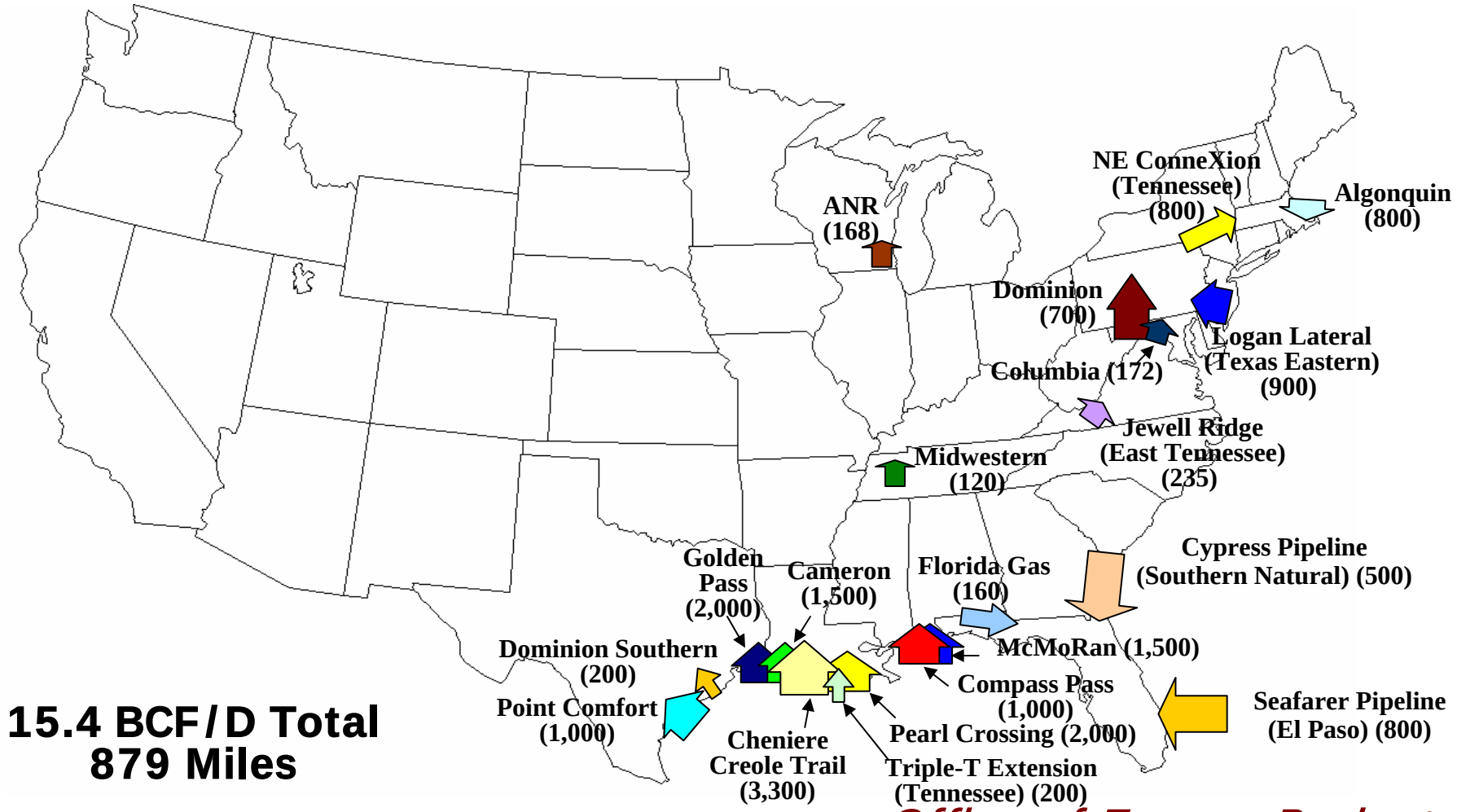
Major Pipeline Projects Certificated (MMcf/d)

January 2004 to October 2005



Major Pipeline Projects Pending (MMcf/d)

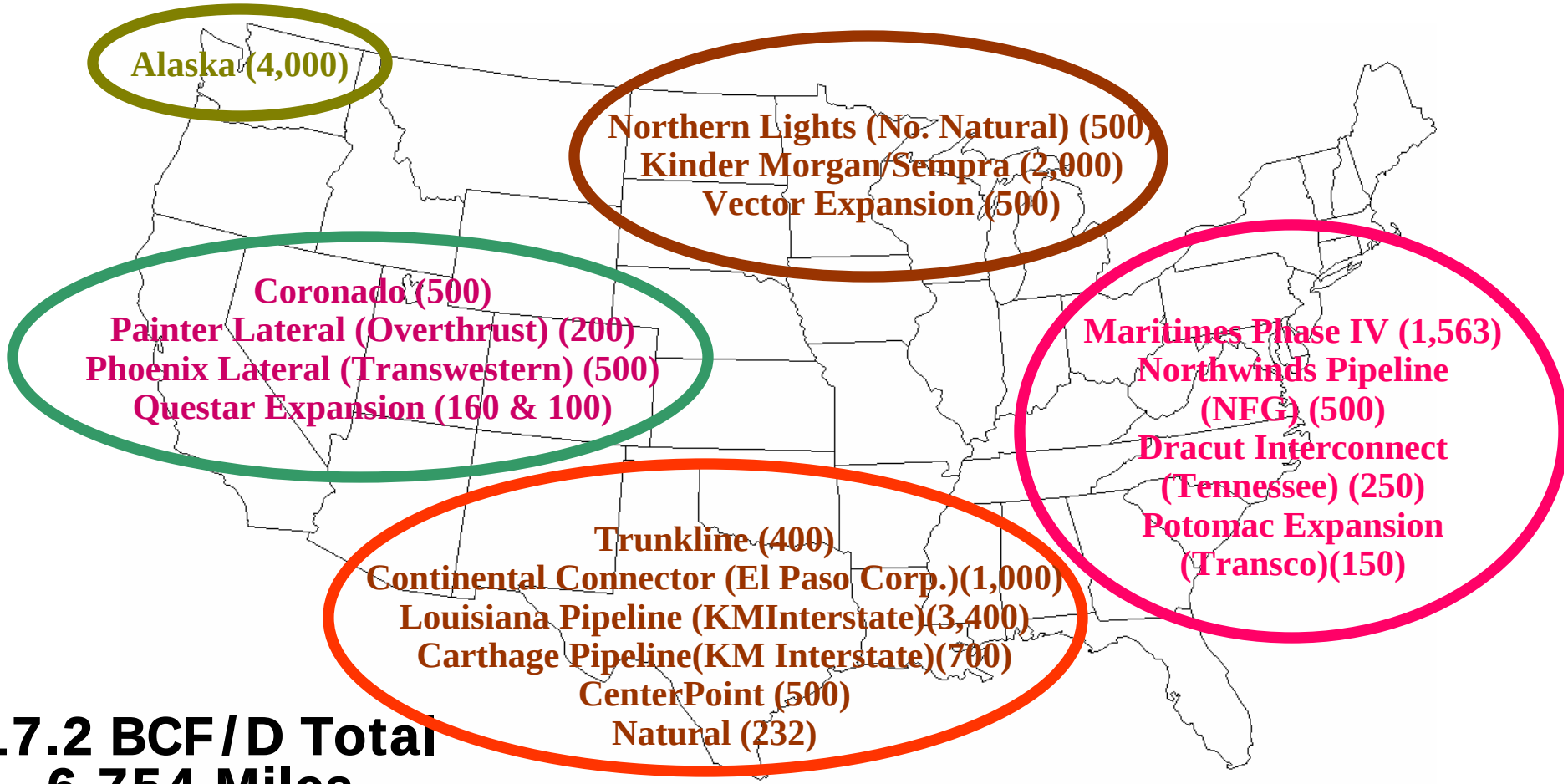
October 2005



15.4 BCF/D Total
879 Miles

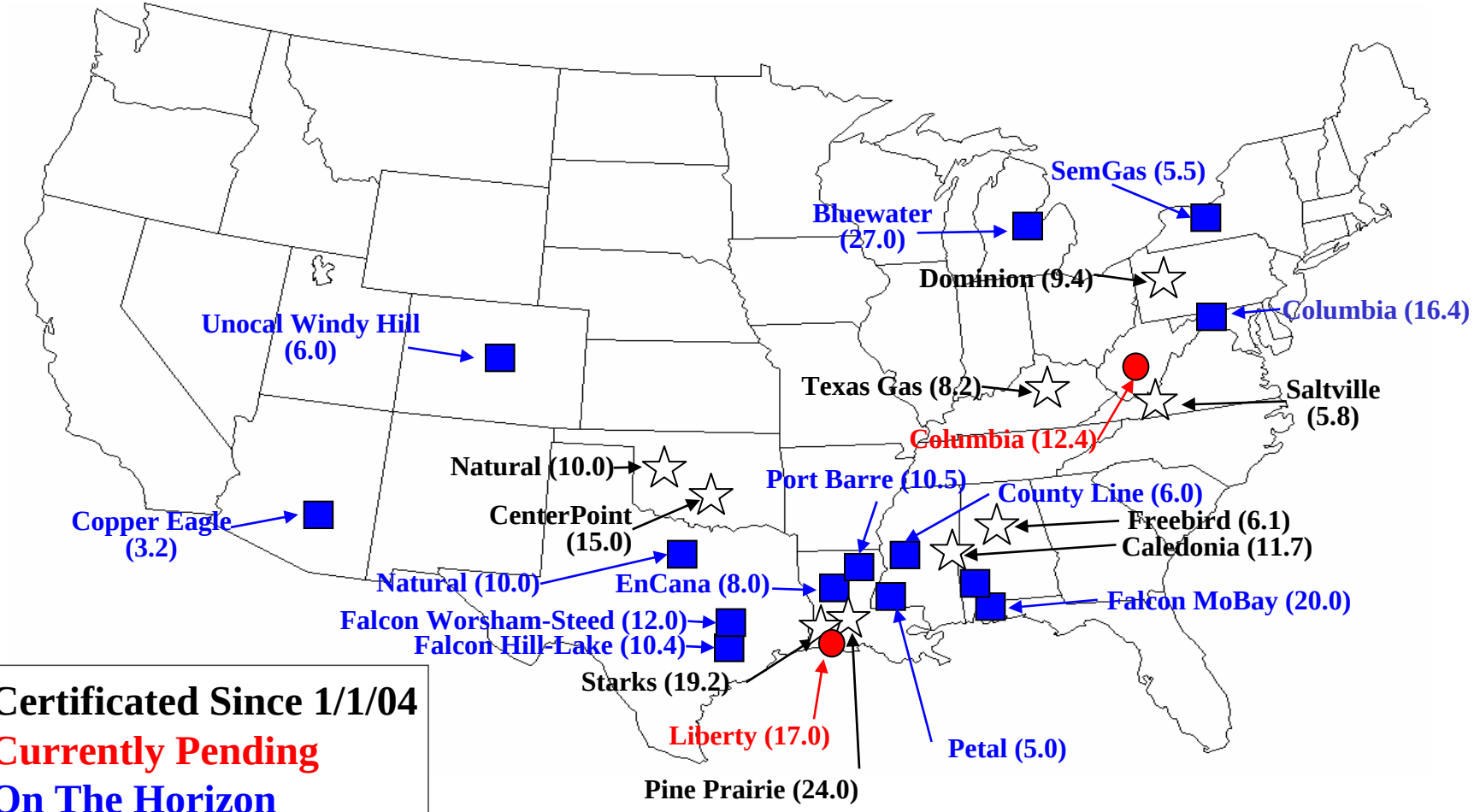
Major Pipeline Projects On The Horizon (MMcf/d)

October 2005



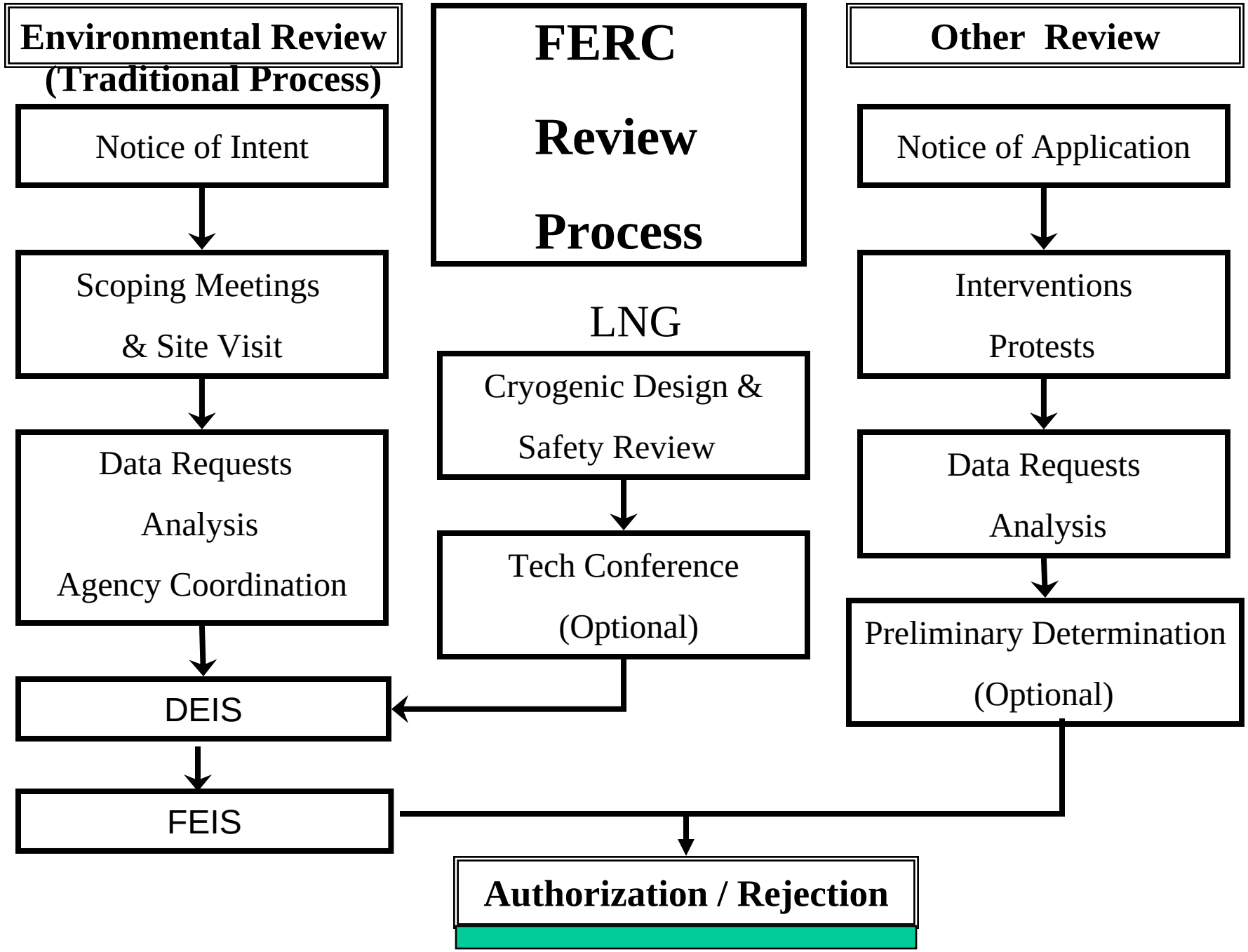
17.2 BCF/D Total
6,754 Miles

Storage Projects (Capacity in Bcf)

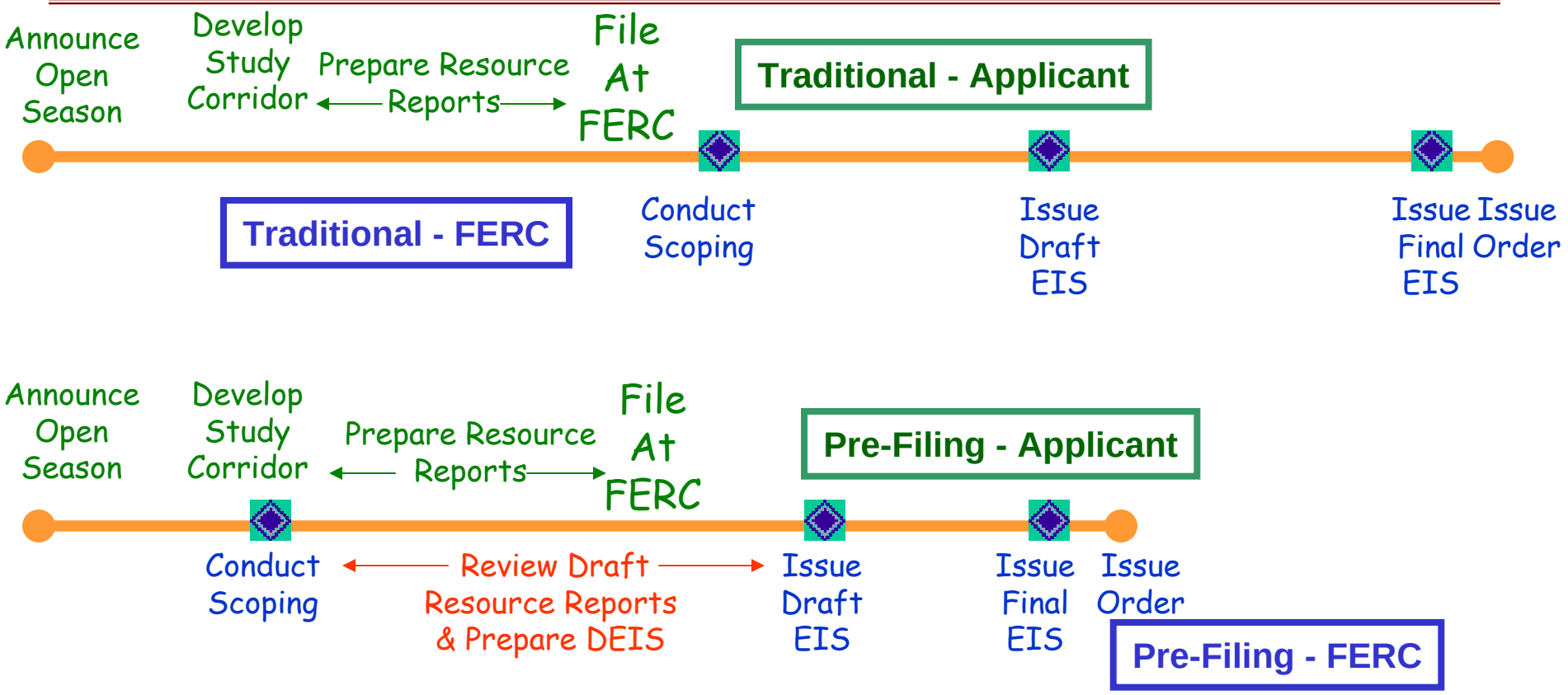


Balancing Interests

People Like...		But They Also Want...
Due Process	⟷	Expedited Process
Smaller Government	⟷	Effective Government
Less Regulation	⟷	Assurance of Fair Markets
Market-dictated Outcomes	⟷	Protection from Market Dysfunctions, Unexpected Risk, and Unjust Rates
Protection for the Environment and Property Interests	⟷	Ample Supplies of Low-cost Energy


Environmental Review
(Traditional Process)
Notice of Intent
Scoping Meetings
& Site Visit
Data Requests
Analysis
Agency Coordination
DEIS
FEIS
FERC
Review
Process
LNG
Cryogenic Design &
Safety Review
Tech Conference
(Optional)
Other Review
Notice of Application
Interventions
Protests
Data Requests
Analysis
Preliminary Determination
(Optional)
Authorization / Rejection

Traditional vs. Pre-Filing Process



NPC Study

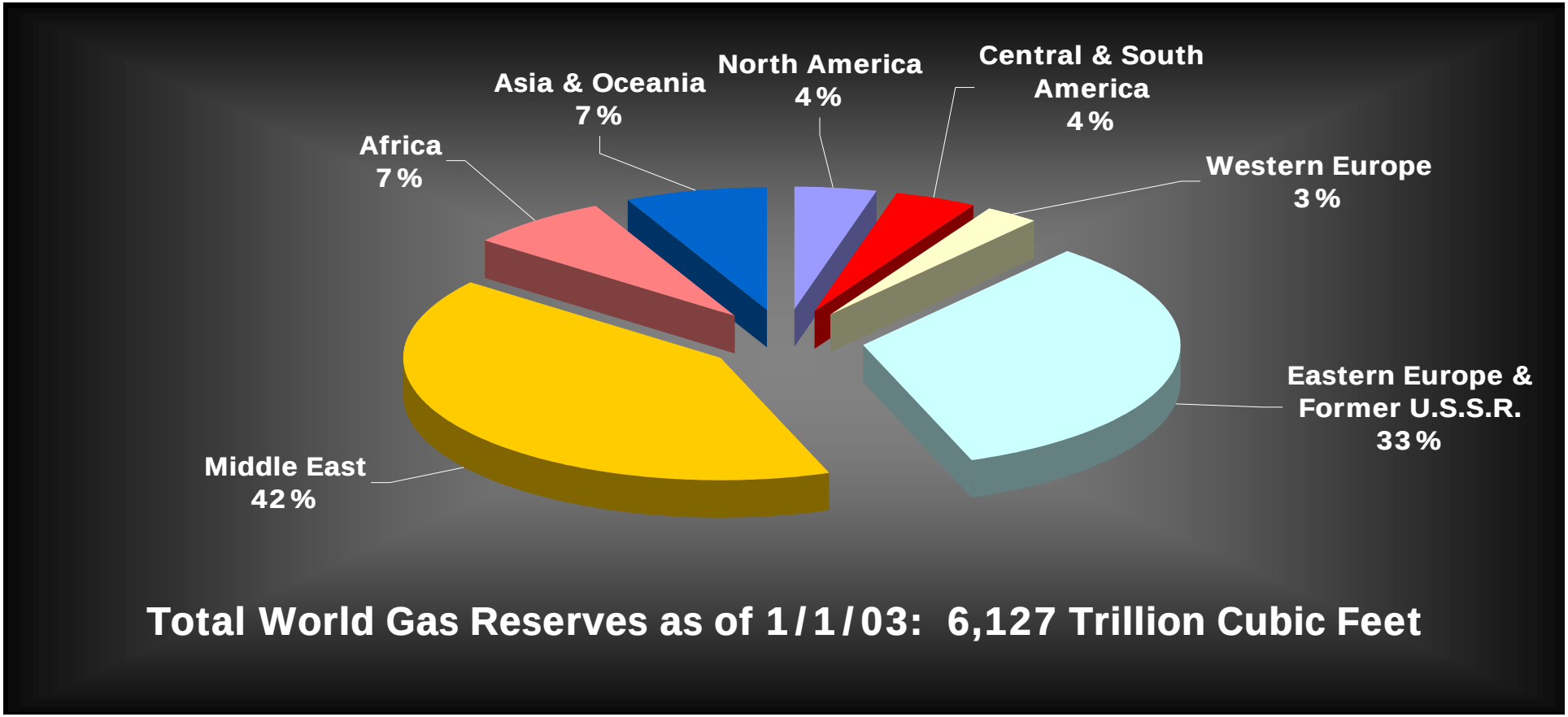
- Align the conflicting policies
  - -- Policies that encourage consumption
  - -- Policies that inhibit gas supply

LNG – Two Points

- **Natural gas is the economic/environmental fuel of choice.**

- **96% of natural gas reserves are outside North America.**

How Much Natural Gas Is Out There?

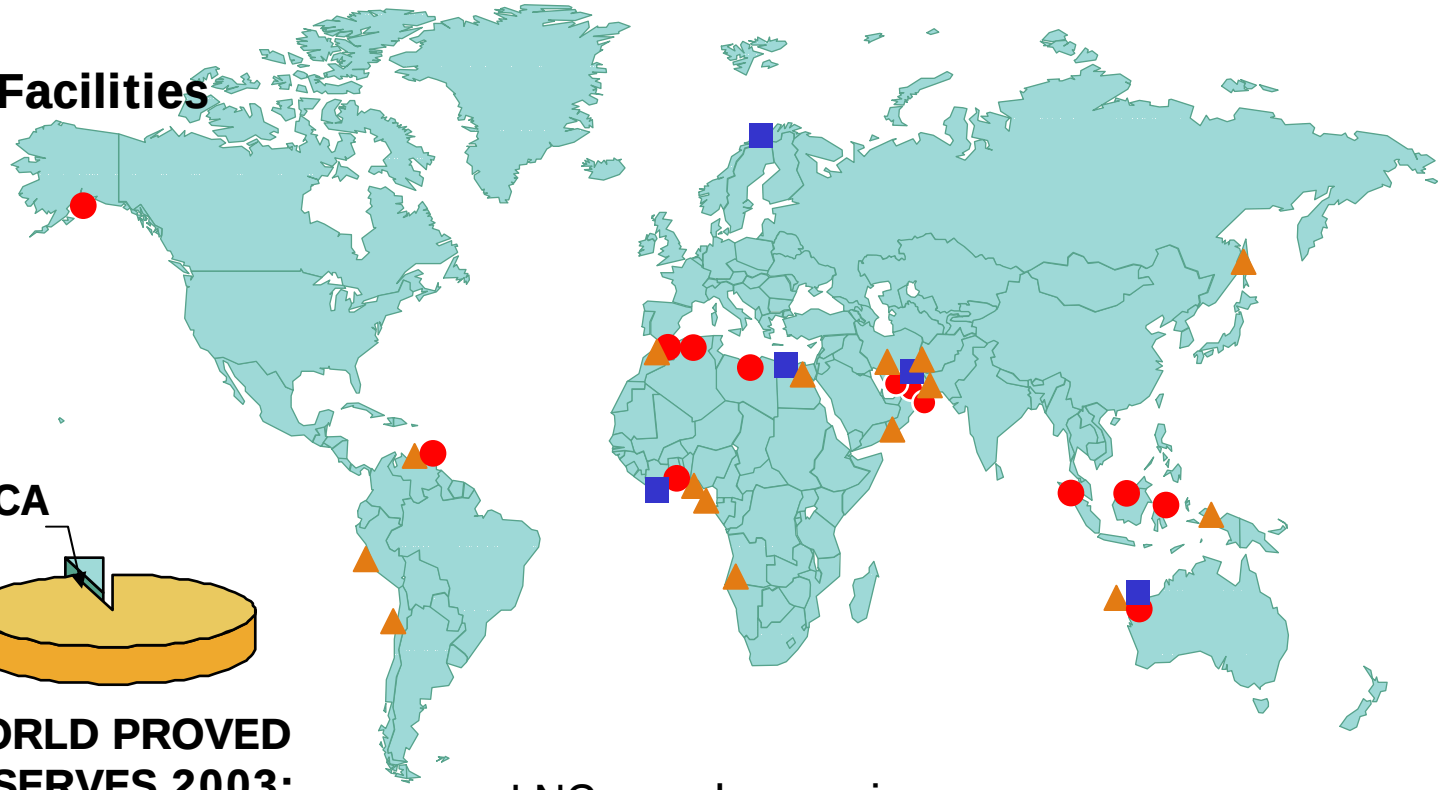


Source: EIA, World Oil

Where Are the Export Facilities?

Global LNG Supply Facilities

- **Existing**
- **Under Construction**
- **Proposed**



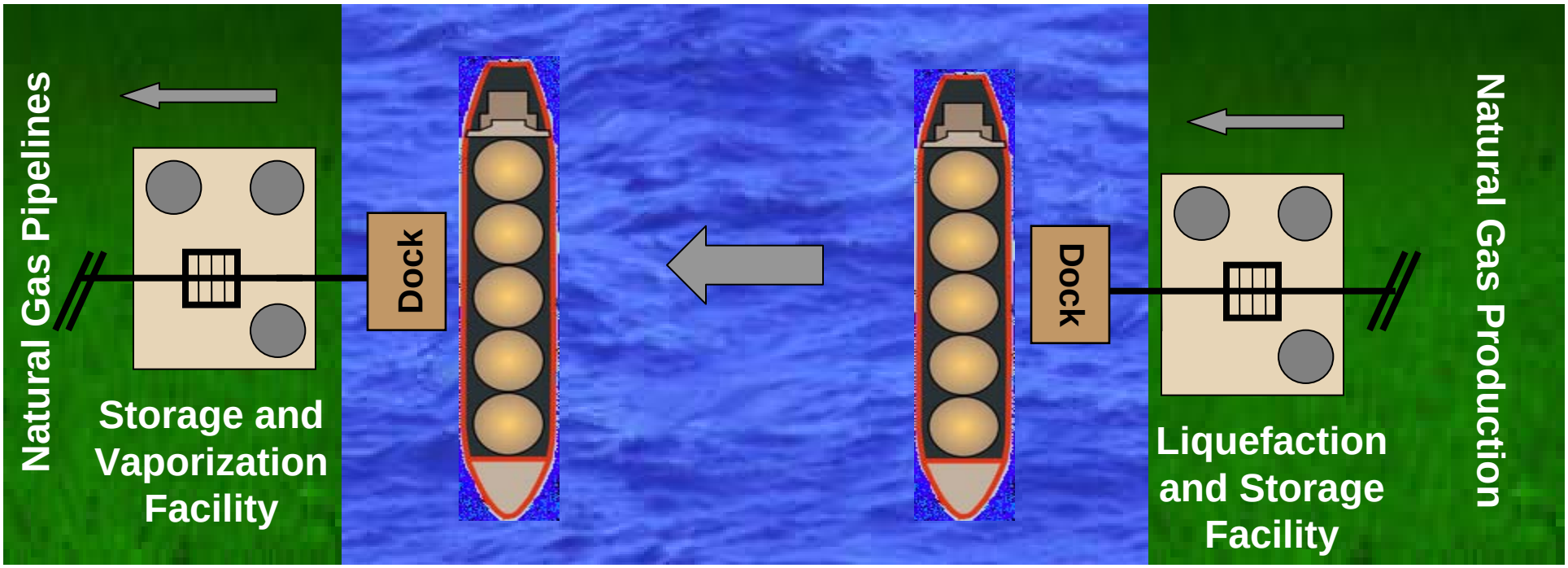
NORTH AMERICA RESERVES 4%

WORLD PROVED RESERVES 2003: 6,127 TCF

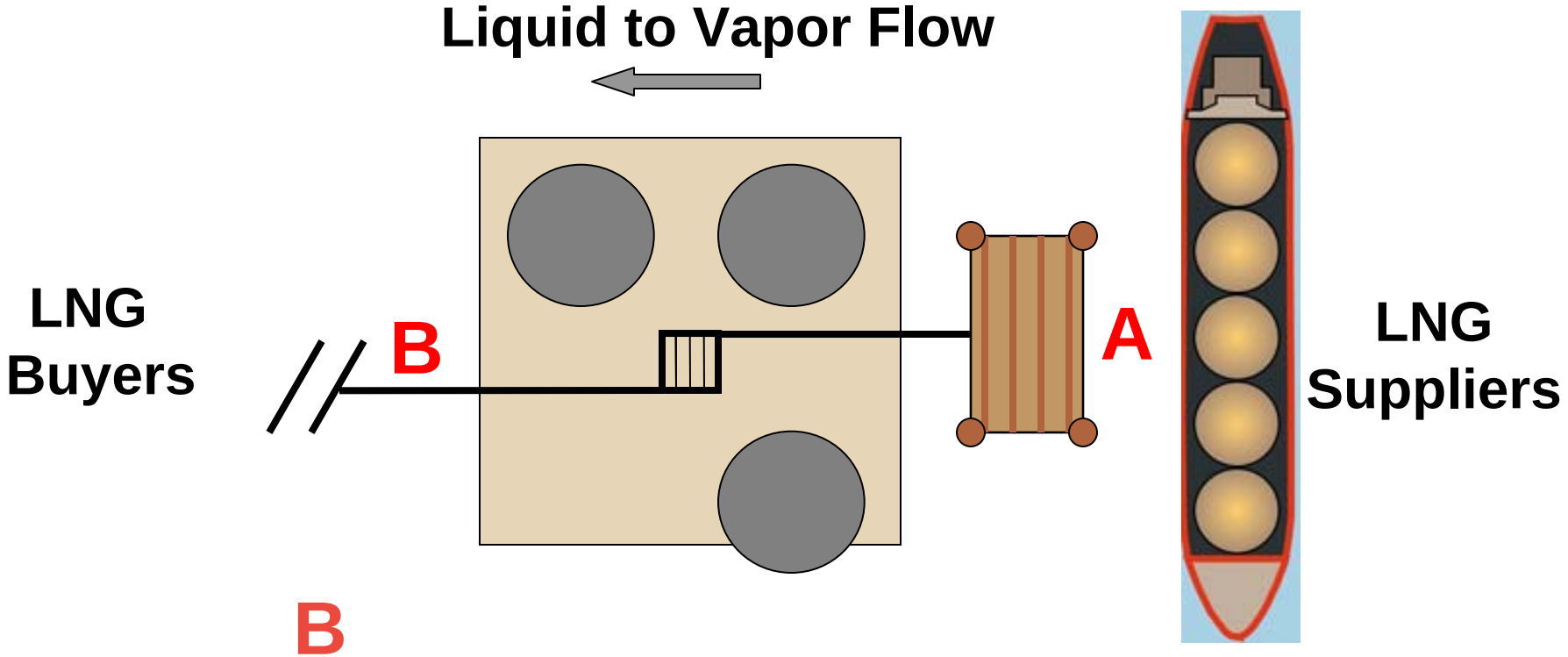
- LNG supply growing
- Multiple LNG supply proposals announced
- Long term LNG supply outlook robust

Source: Cedigaz, NPC

LNG Supply Stream -- From Production to Distribution



Economic Oversight – Access to LNG Terminal



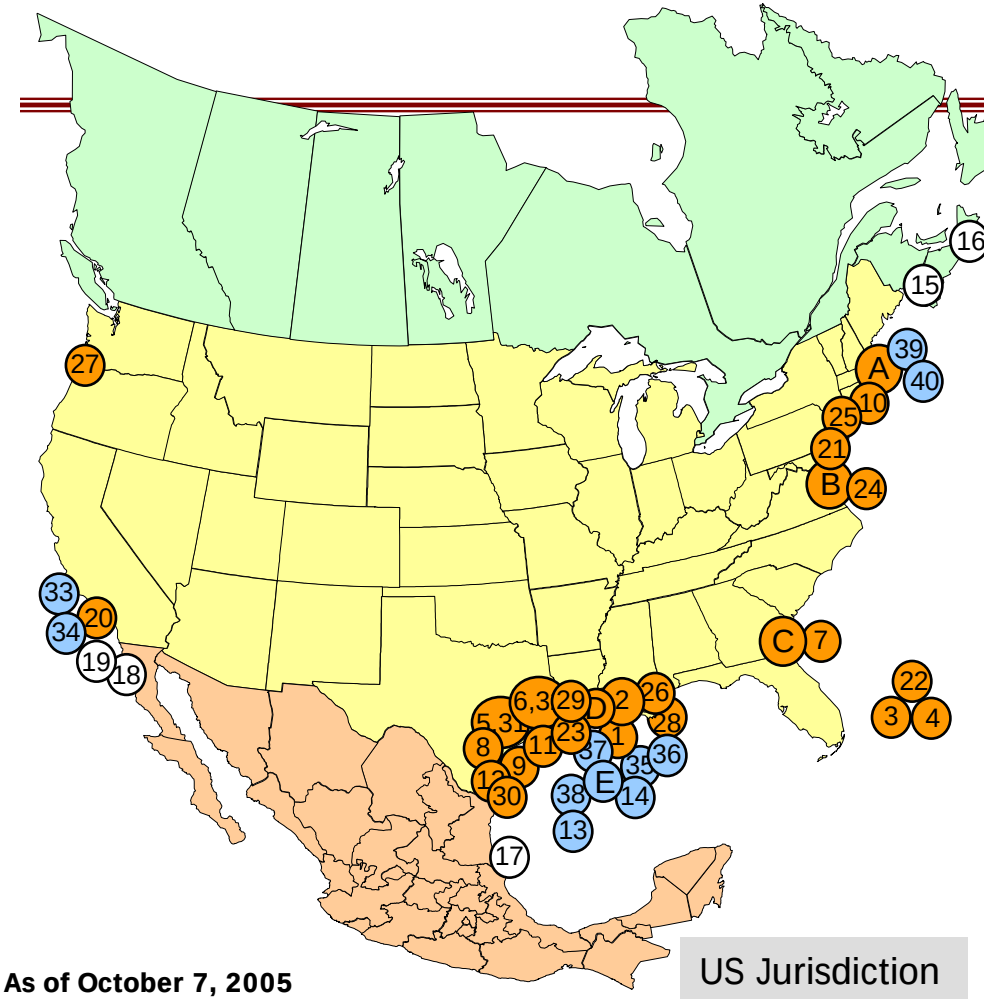
B

Open Access At Delivery of Vapor into Interstate Pipeline System

A

Open Access At Delivery of Liquid to Terminal

Existing and Proposed North American LNG Terminals



As of October 7, 2005

* *US pipeline approved; LNG terminal pending in Bahamas*

CONSTRUCTED

A. Everett, MA : 1.035 Bcfd (Tractebel - DOMAC)
B. Cove Point, MD : 1.0 Bcfd (Dominion - Cove Point LNG)
C. Elba Island, GA : 0.68 Bcfd (El Paso - Southern LNG)
D. Lake Charles, LA : 1.0 Bcfd (Southern Union - Trunkline LNG)
E. Gulf of Mexico: 0.5 Bcfd, (Gulf Gateway Energy Bridge - Excelerate Energy)

APPROVED BY FERC

1. Lake Charles, LA: 1.1 Bcfd (Southern Union - Trunkline LNG)
2. Hackberry, LA : 1.5 Bcfd, (Sempra Energy)
3. Bahamas : 0.84 Bcfd, (AES Ocean Express)*
4. Bahamas : 0.83 Bcfd, (Calypso Tractebel)*
5. Freeport, TX : 1.5 Bcfd, (Cheniere/Freeport LNG Dev.)
6. Sabine, LA : 2.6 Bcfd (Cheniere LNG)
7. Elba Island, GA: 0.54 Bcfd (El Paso - Southern LNG)
8. Corpus Christi, TX: 2.6 Bcfd, (Cheniere LNG)
9. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol - ExxonMobil)
10. Fall River, MA : 0.8 Bcfd, (Weaver's Cove Energy/Hess LNG)
11. Sabine, TX : 1.0 Bcfd (Golden Pass - ExxonMobil)
12. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)

APPROVED BY MARAD/COAST GUARD

13. Port Pelican: 1.6 Bcfd, (Chevron Texaco)
14. Louisiana Offshore : 1.0 Bcfd (Gulf Landing - Shell)

CANADIAN APPROVED TERMINALS

15. St. John, NB : 1.0 Bcfd, (Canaport - Irving Oil)
16. Point Tupper, NS 1.0 Bcf/d (Bear Head LNG - Anadarko)

MEXICAN APPROVED TERMINALS

17. Altamira, Tamulipas : 0.7 Bcfd, (Shell/Total/Mitsui)
18. Baja California, MX : 1.0 Bcfd, (Sempra)
19. Baja California - Offshore : 1.4 Bcfd, (Chevron Texaco)

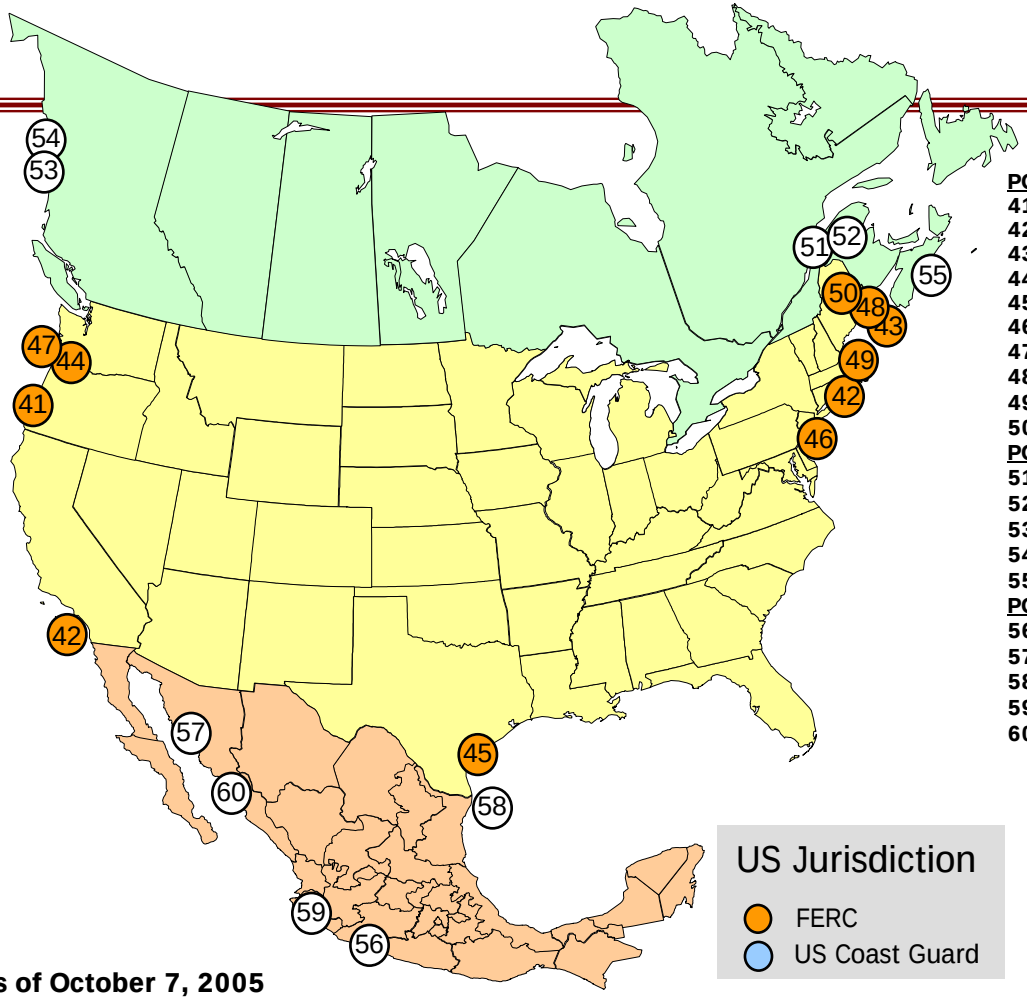
PROPOSED TO FERC

20. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
21. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
22. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/FPL)
23. Port Arthur, TX: 1.5 Bcfd (Sempra)
24. Cove Point, MD : 0.8 Bcfd (Dominion)
25. LI Sound, NY: 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
26. Pascagoula, MS: 1.0 Bcfd (Gulf LNG Energy LLC)
27. Bradwood, OR: 1.0 Bcfd (Northern Star LNG - Northern Star Natural Gas LLC)
28. Pascagoula, MS: 1.3 Bcfd (Casotte Landing - ChevronTexaco)
29. Cameron, LA: 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
30. Port Lavaca, TX: 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
31. Freeport, TX: 2.5 Bcfd (Cheniere/Freeport LNG Dev. - Expansion)
32. Sabine, LA: 1.4 Bcfd (Cheniere LNG - Expansion)

PROPOSED TO MARAD/COAST GUARD

33. California Offshore: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
34. So. California Offshore : 0.5 Bcfd, (Crystal Energy)
35. Louisiana Offshore : 1.0 Bcfd (Main Pass McMoRan Exp.)
36. Gulf of Mexico: 1.0 Bcfd (Compass Port - ConocoPhillips)
37. Gulf of Mexico: 2.8 Bcfd (Pearl Crossing - ExxonMobil)
38. Gulf of Mexico: 1.5 Bcfd (Beacon Port Clean Energy Terminal **-** ConocoPhillips)
39. Offshore Boston, MA: 0.4 Bcfd (Neptune LNG - Tractebel)
40. Offshore Boston, MA: 0.8 Bcfd (Northeast Gateway - Excelerate Energy)

Potential North American LNG Terminals



As of October 7, 2005

POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS

41. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
42. California - Offshore: 0.75 Bcfd, (Chevron Texaco)
43. Pleasant Point, ME : 0.5 Bcfd (Quoddy Bay, LLC)
44. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
45. Galveston, TX: 1.2 Bcfd (Pelican Island - BP)
46. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
47. Astoria, OR: 1.0 Bcfd (Skipanon LNG - Calpine)
48. Robbinston, ME: 0.5 Bcfd (Downeast LNG - Kestrel Energy/Dean Girdis)
49. Boston, MA: 0.8 Bcfd (AES Battery Rock LLC **-** AES Corp.)
50. Calais, ME: ? Bcfd (BP Consulting LLC)

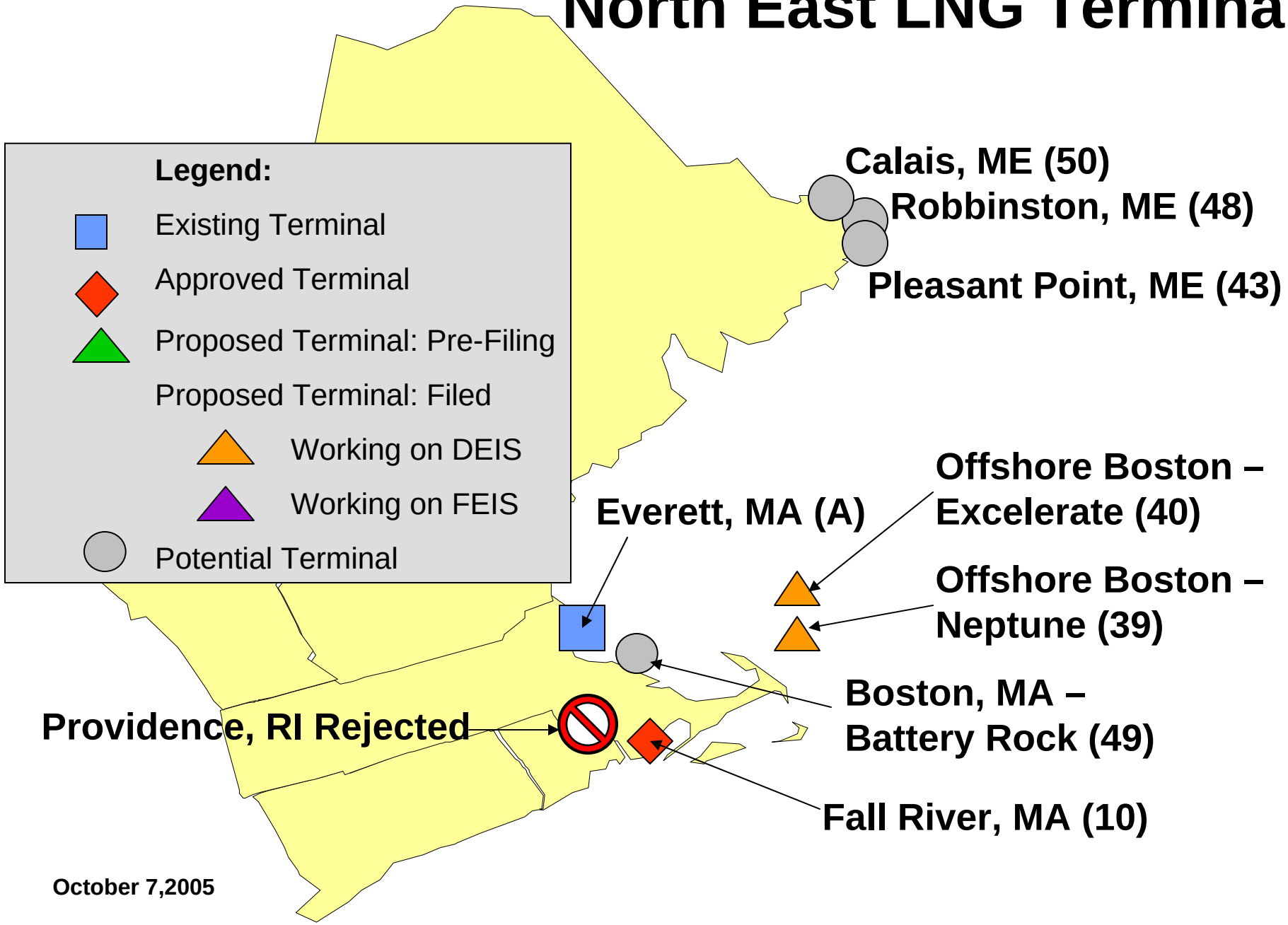
POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS

51. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
52. Rivière-du- Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
53. Kitimat, BC: 0.61 Bcfd (Galveston LNG)
54. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
55. Goldboro, NS 1.0 Bcfd (Keltic Petrochemicals)

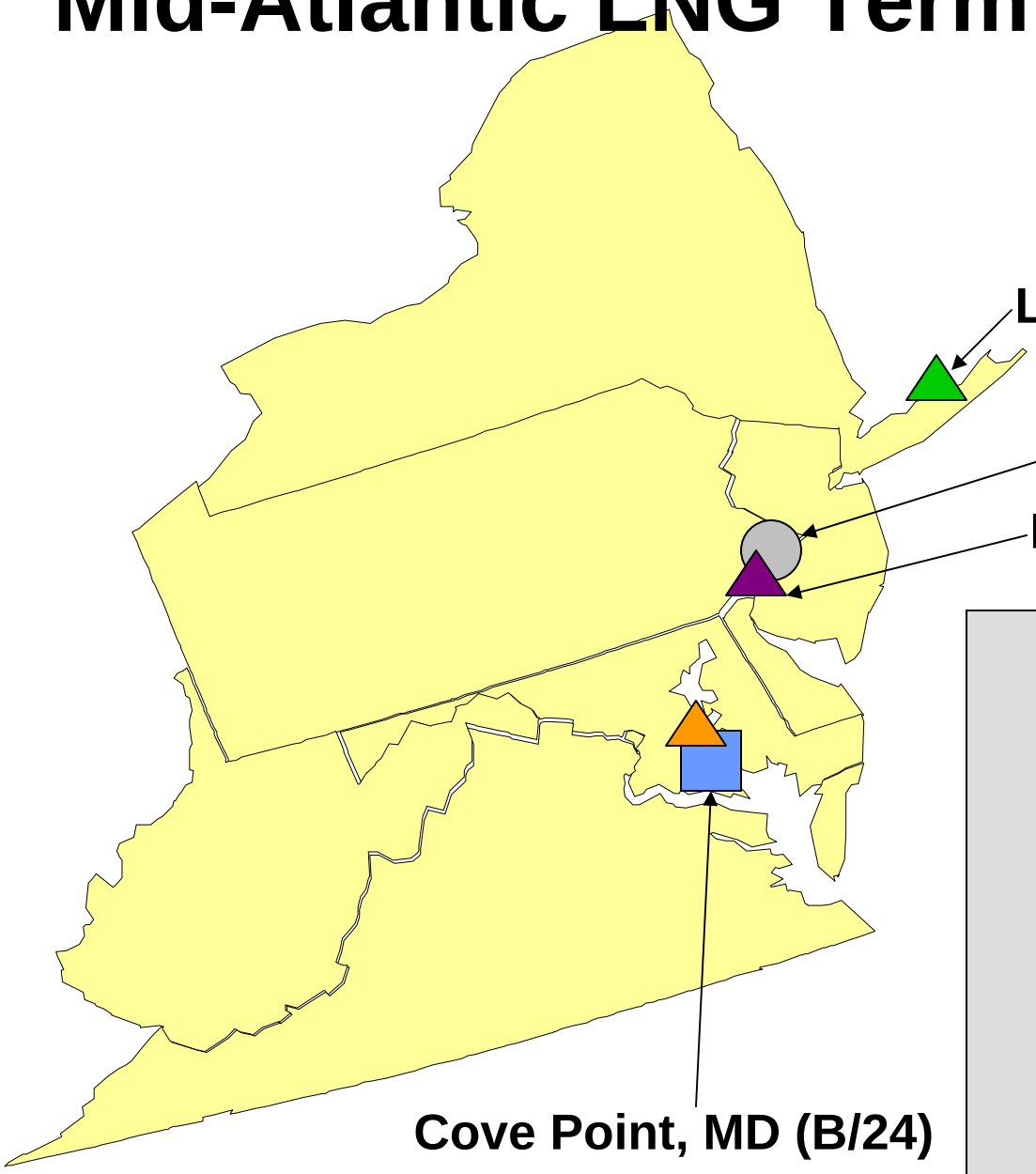
POTENTIAL MEXICAN SITES IDENTIFIED BY PROJECT SPONSORS

56. Lázaro Cárdenas, MX : 0.5 Bcfd (Tractebel/Repsol)
57. Puerto Libertad, MX: 1.3 Bcfd (Sonora Pacific LNG)
58. Offshore Gulf, MX: 1.0 Bcfd (Dorado - Tidelands)
59. Manzanillo, MX: 0.5 Bcfd
60. Topolobampo, MX: 0.5 Bcfd

North East LNG Terminals



Mid-Atlantic LNG Terminals



Long Island Sound, NY (25)

Philadelphia, PA (46)

Logan Township, NJ (21)

Cove Point, MD (B/24)

Legend:

- Existing Terminal
- Approved Terminal
- Proposed Terminal: Pre-Filing
- Proposed Terminal: Filed
  - Working on DEIS
  - Working on FEIS
- Potential Terminal

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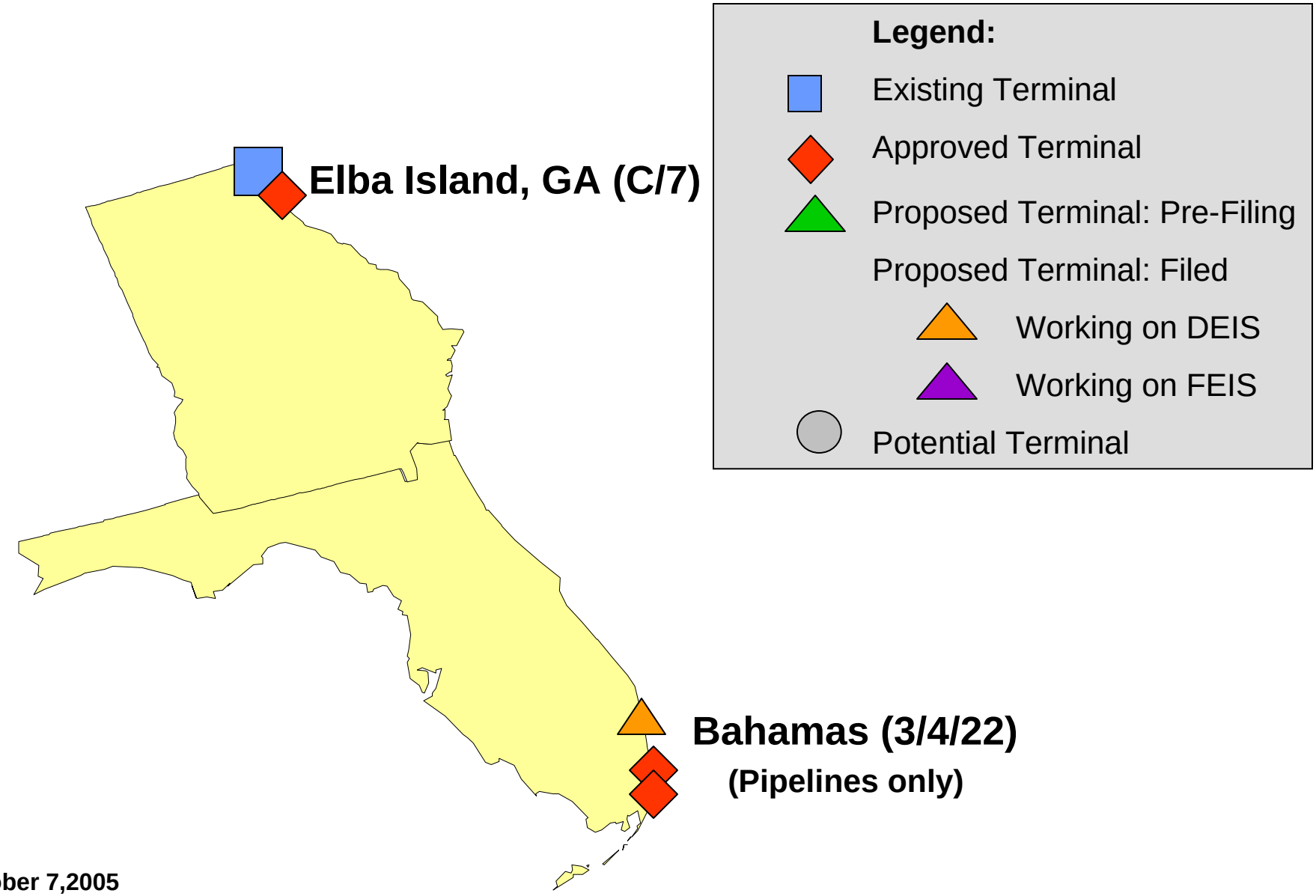
South East LNG Terminals



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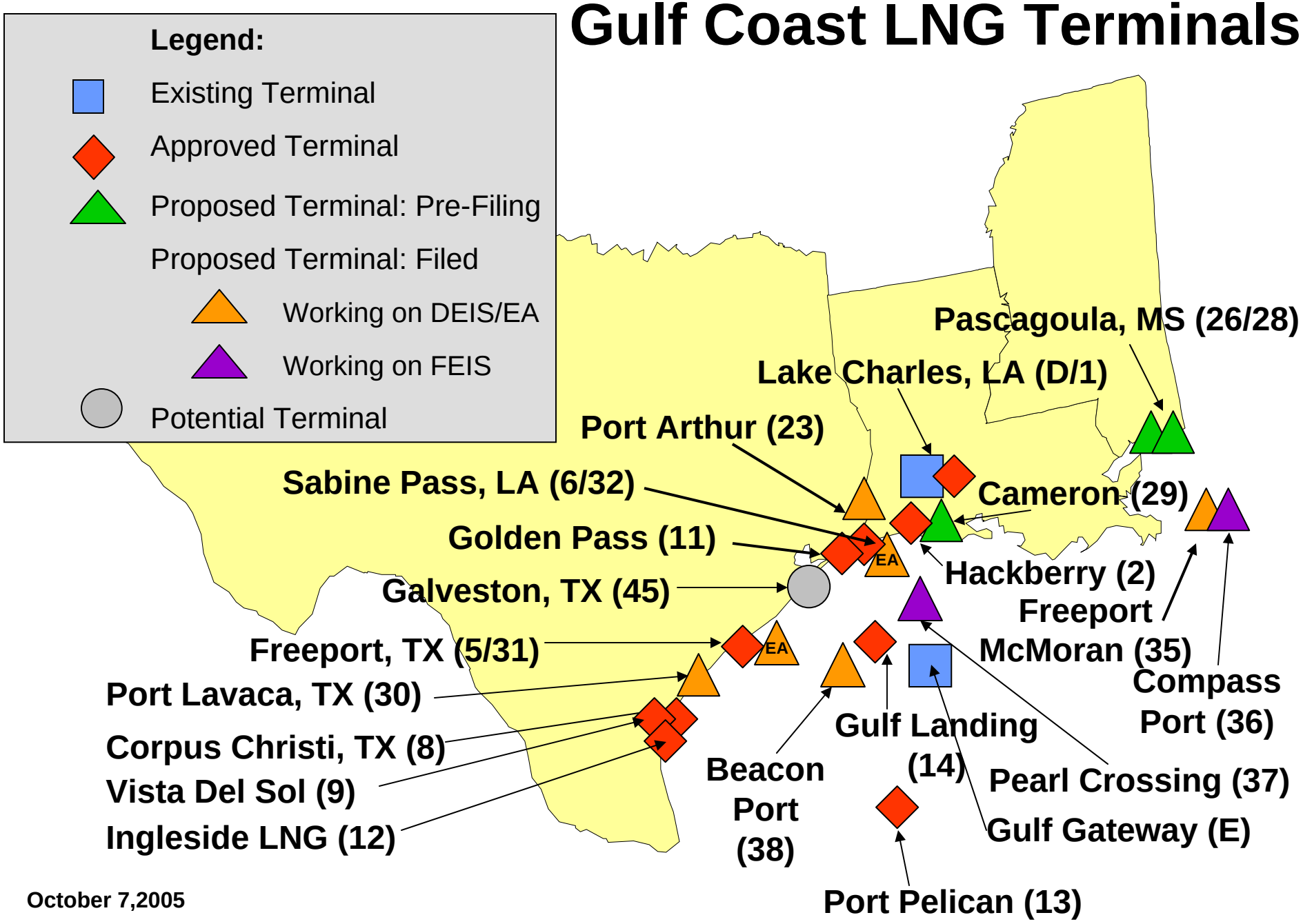
Gulf Coast LNG Terminals



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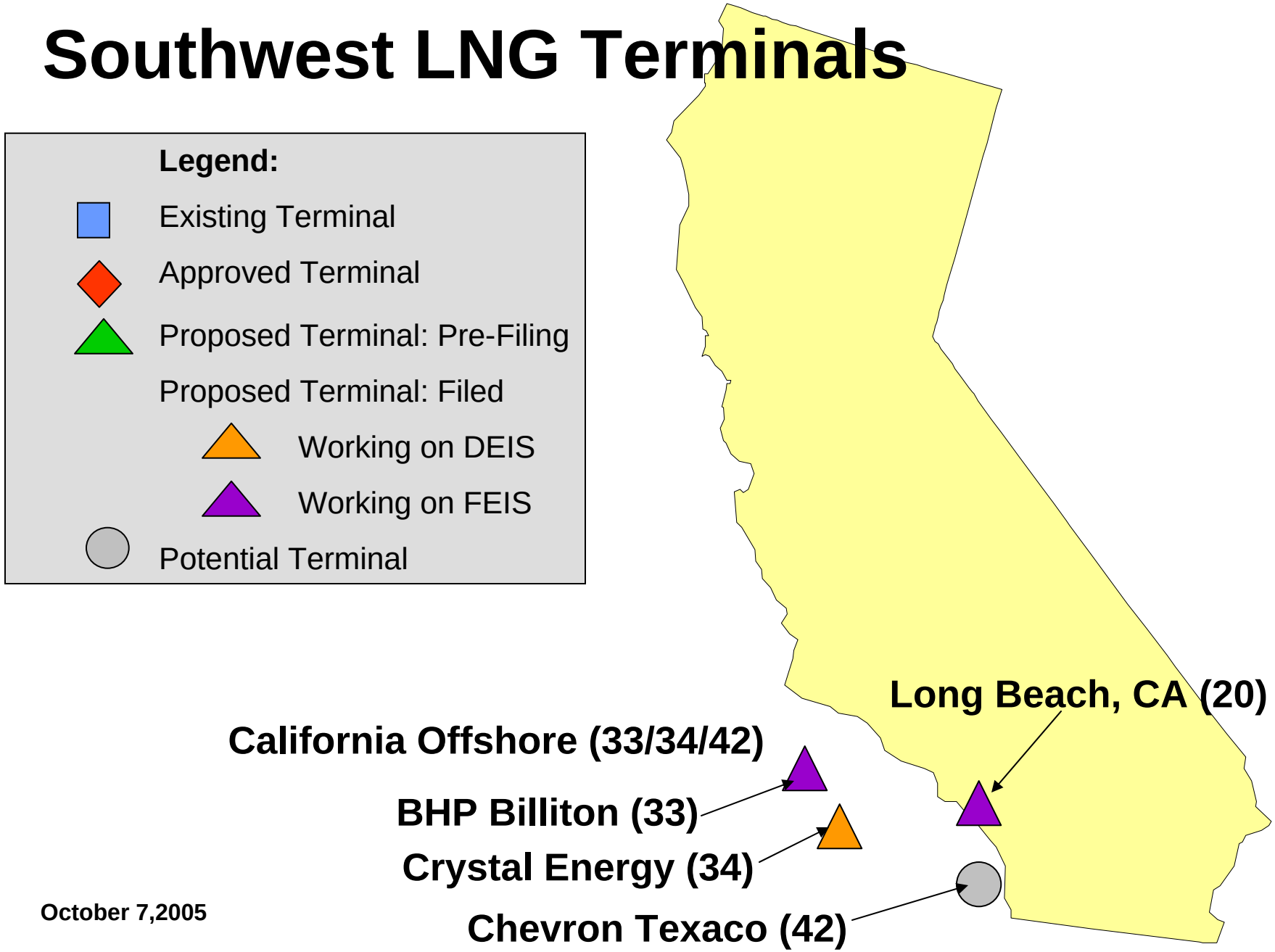
Southwest LNG Terminals



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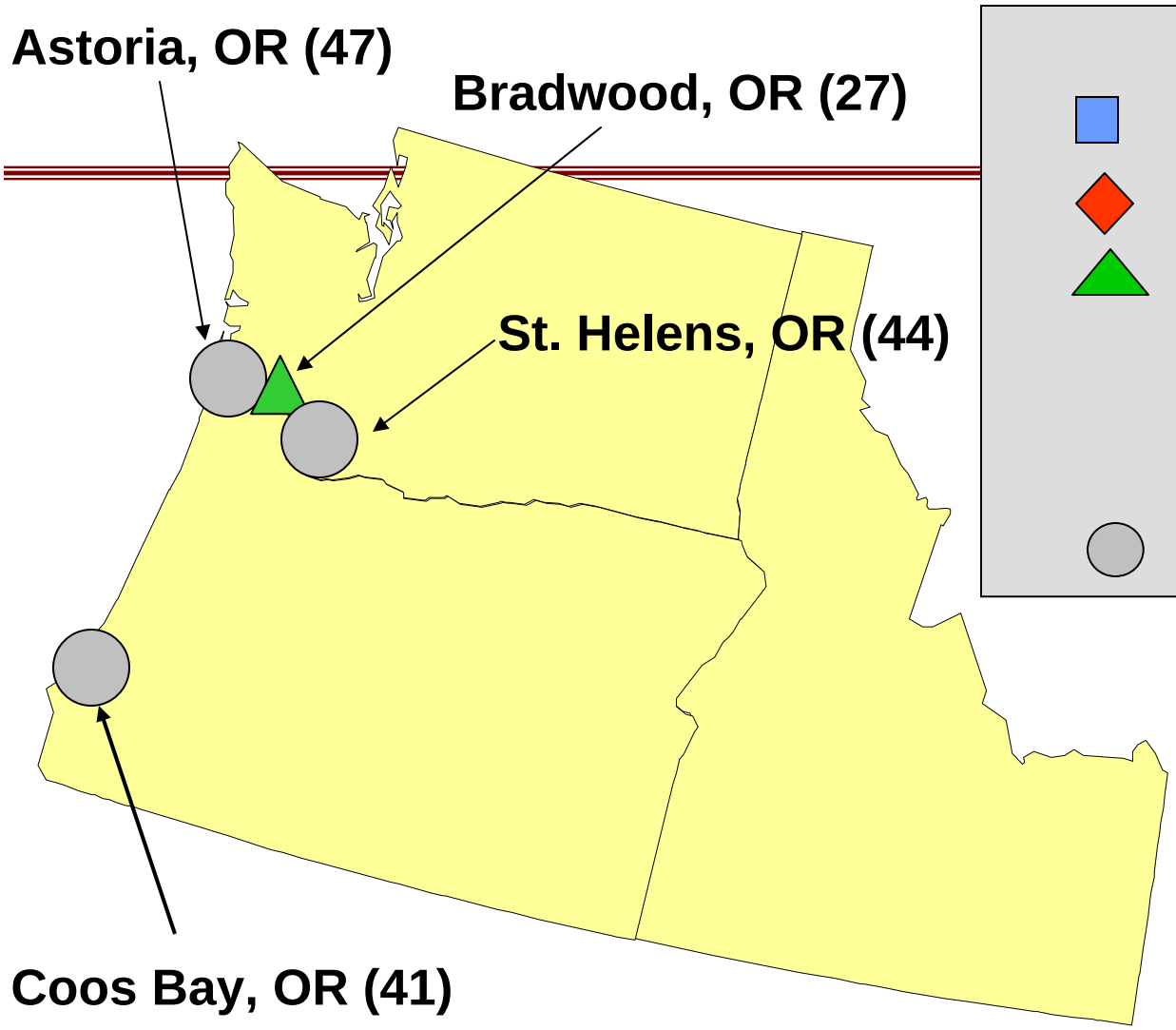
North West LNG Terminals



Legend:

- Existing Terminal
- Approved Terminal
- Proposed Terminal: Pre-Filing
- Proposed Terminal: Filed
  - Working on DEIS
  - Working on FEIS
- Potential Terminal

October 7,2005

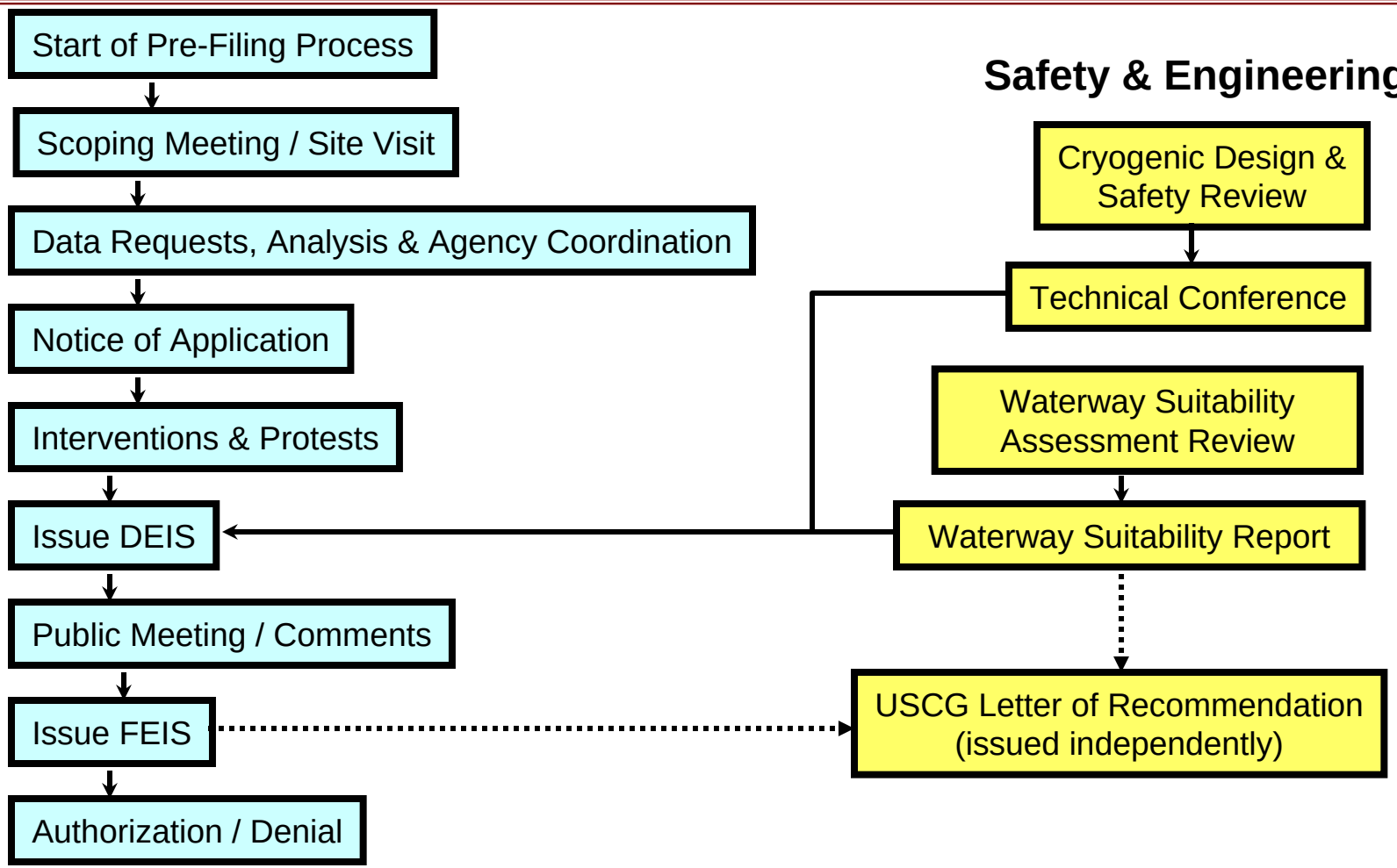
LNG Properties and Safety

- LNG is natural gas that in its liquid state at -259º Fahrenheit - it is commonly stored and shipped at slightly above atmospheric pressure.
- LNG is odorless, colorless, non-toxic - it neither explodes nor burns as a liquid.
- LNG vapors are flammable only in concentrations of 5% to 15% with air and will not explode in an unconfined environment - the ignition temperature is more than 500º Fahrenheit higher than gasoline.
- In the past 40 years there have been more than 33,000 LNG ship voyages without a significant accident or cargo spillage.

LNG Terminal Siting Issues

- Safety
- Take Away Capacity
- Local acceptance
- Federal and State approvals

LNG Review Process
Mandatory Pre Filing



Opportunities for Public Involvement

The FERC Process:

- We Issue Notice of the Application
- Project Sponsor Sends Landowner Notification Package
- SCOPING = We Issue Notice of Intent to Prepare the NEPA Document
- Public Meeting(s)

Public Input:

- File an Intervention
- Contact the project sponsor w/questions, concerns; contact FERC
- Send letters expressing concerns about environmental impact
- Attend scoping meetings

Opportunities for Public Involvement

The FERC Process:

- Issue Notice of Availability of the DEIS
- Public Meetings on DEIS
- Issue a Commission Order

Public Input:

- File comments on the adequacy of DEIS
- Attend public meetings to give comments on DEIS
- Interveners can file a request for Rehearing of a Commission Order

Recent Events

- ABS Study
- Skikda Accident
- Reorganization for Safety
- Sandia Study
- Regional Planning
- Katrina/Rita

Outlook/Issues Associated with LNG Development

- Attempts to reassert economic jurisdiction in the post-Hackberry environment.
- Disinformation about safety.
- Legislative/Judicial Action
- Rulemaking

US Natural Gas Balance