

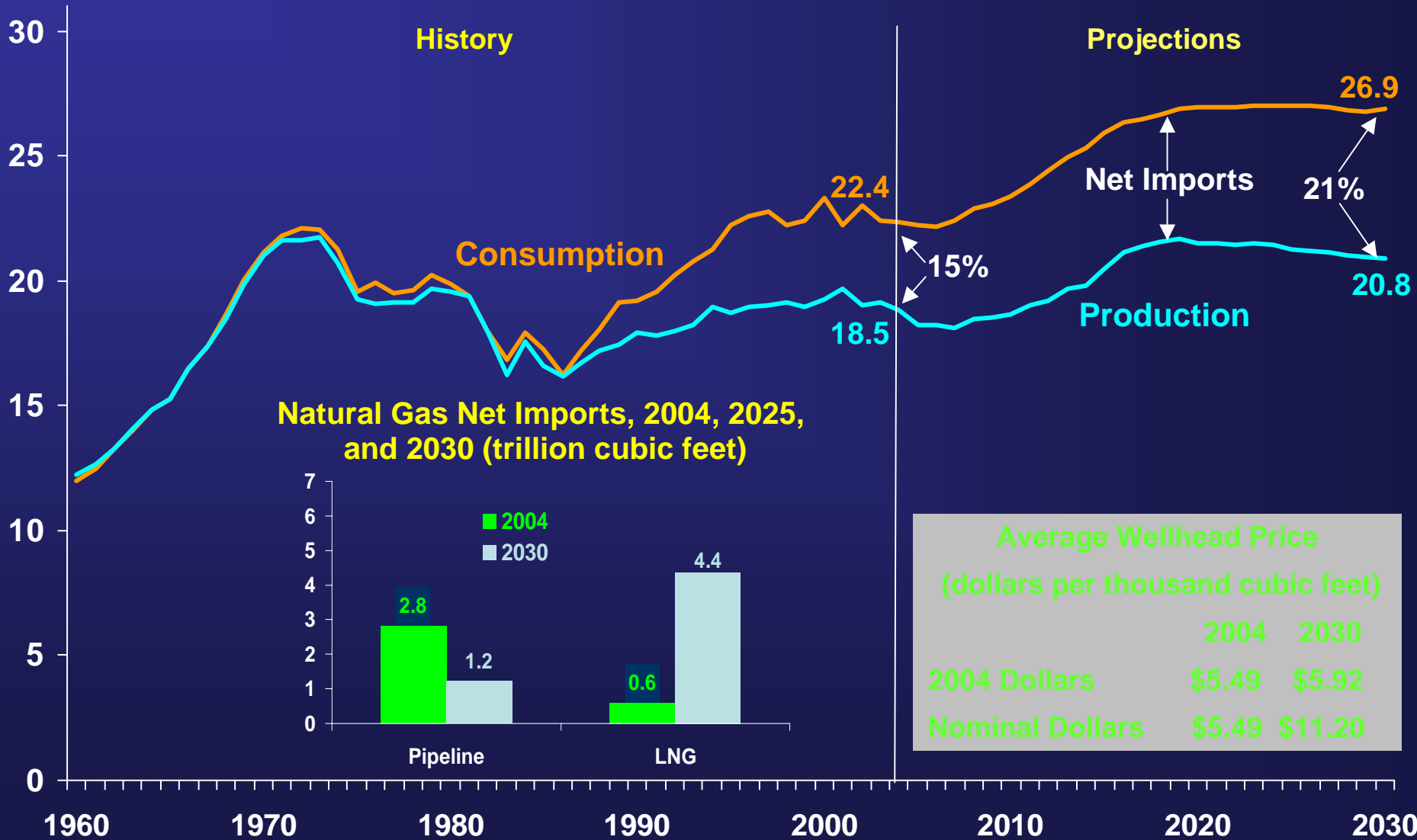
# ***EIA's Current View on LNG Imports into the United States***

**Phyllis Martin  
Senior Energy Analyst  
U.S. Energy Information Administration**

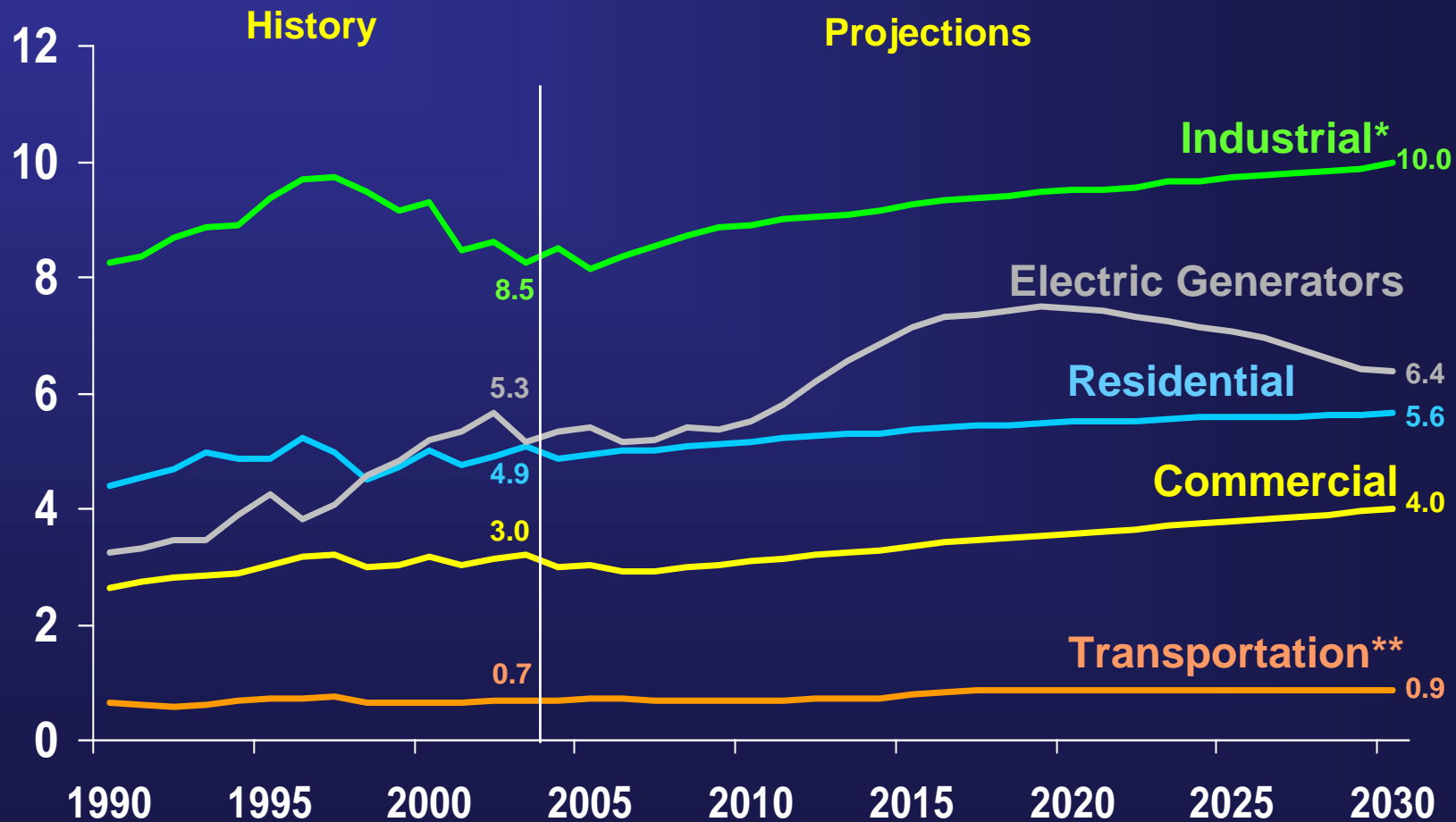
**2006 EIA Energy Outlook and Modeling Conference  
March 27, 2006  
Washington, DC**



# U.S. Natural Gas Production, Consumption, and Net Imports, 1960-2030 (trillion cubic feet)



# U.S. Natural Gas Consumption by Sector, 1990-2030 (trillion cubic feet)



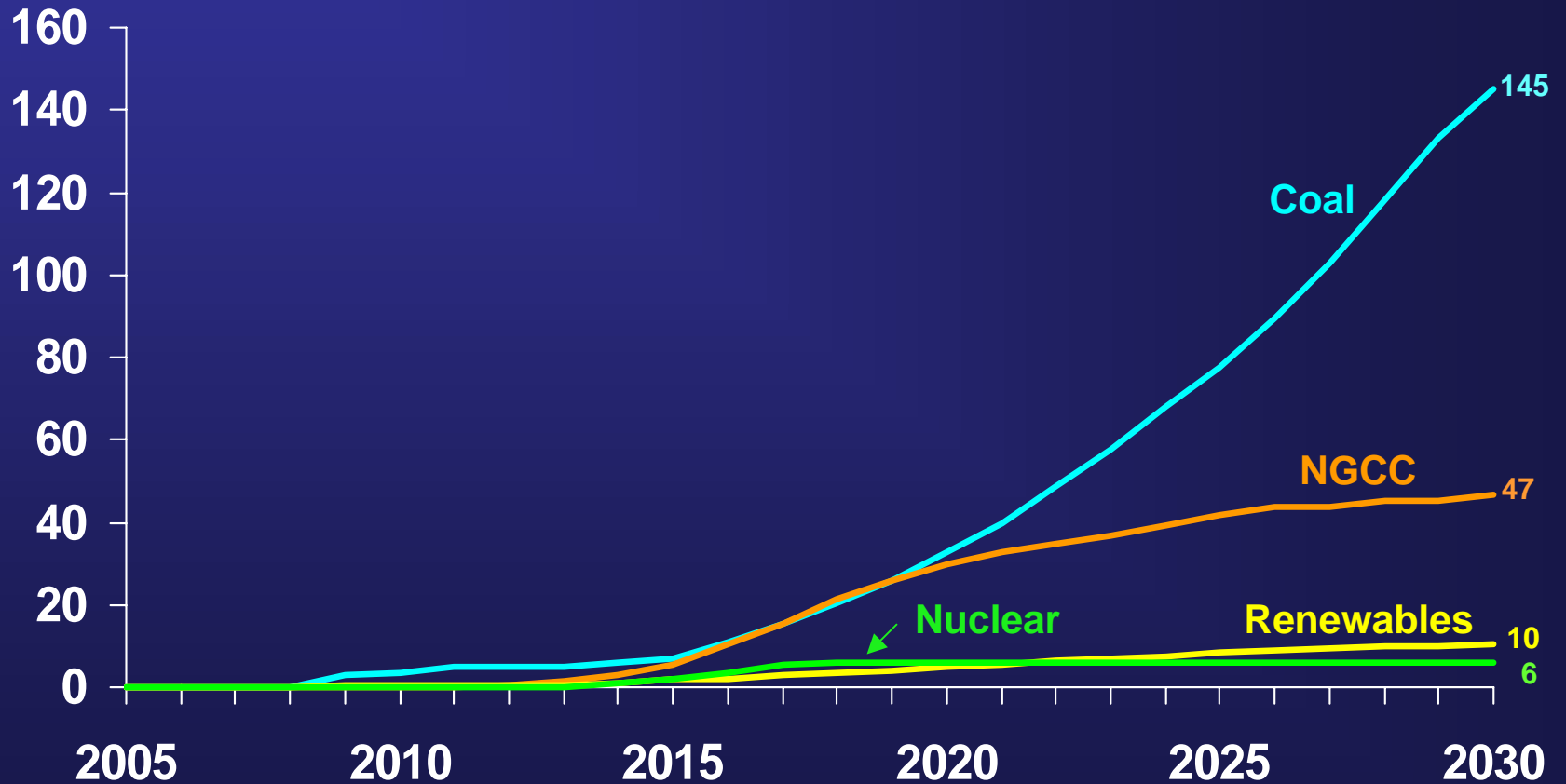
\* Includes lease and plant fuel

\*\* Includes pipeline fuel

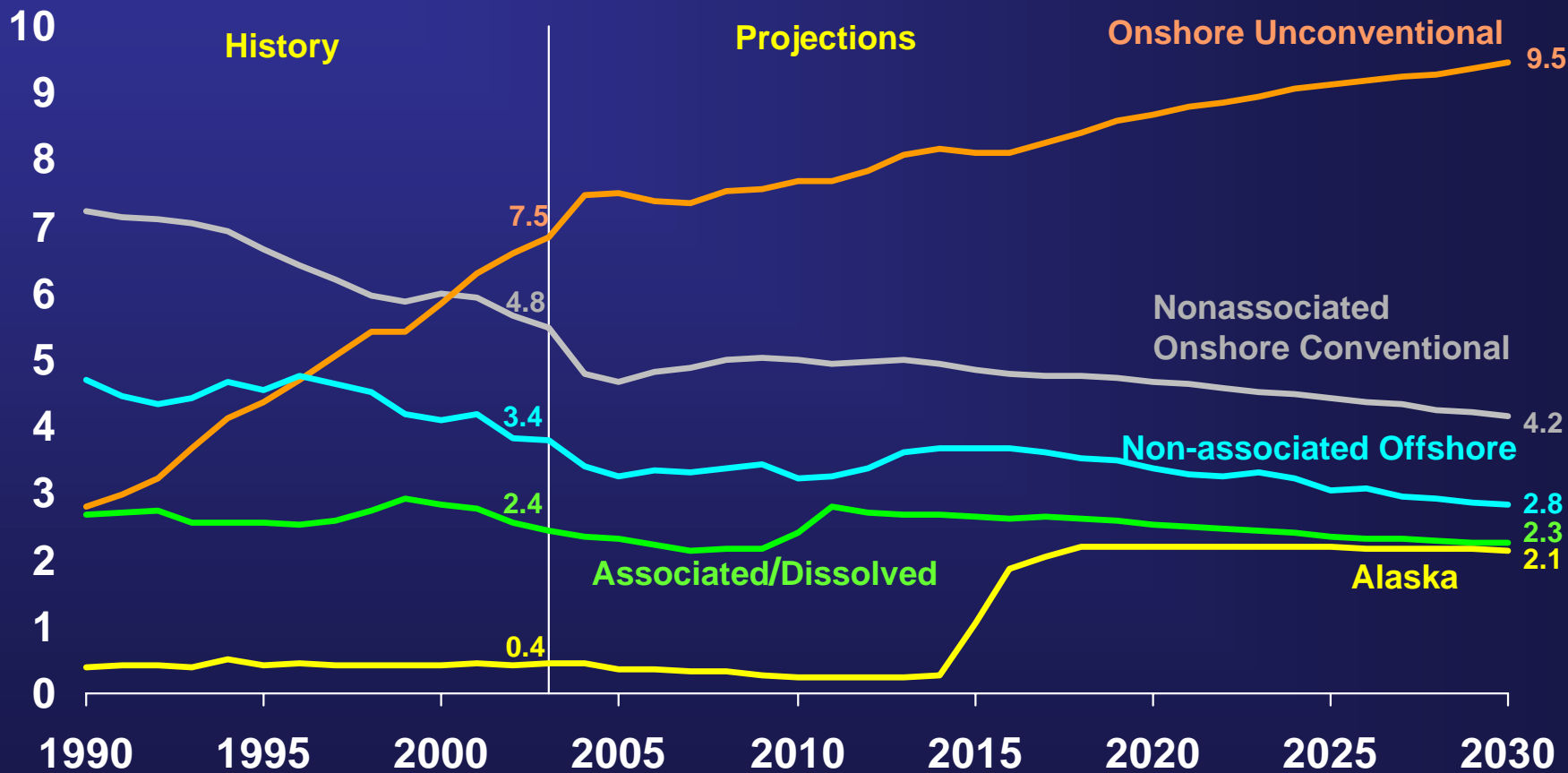
Annual Energy Outlook 2006



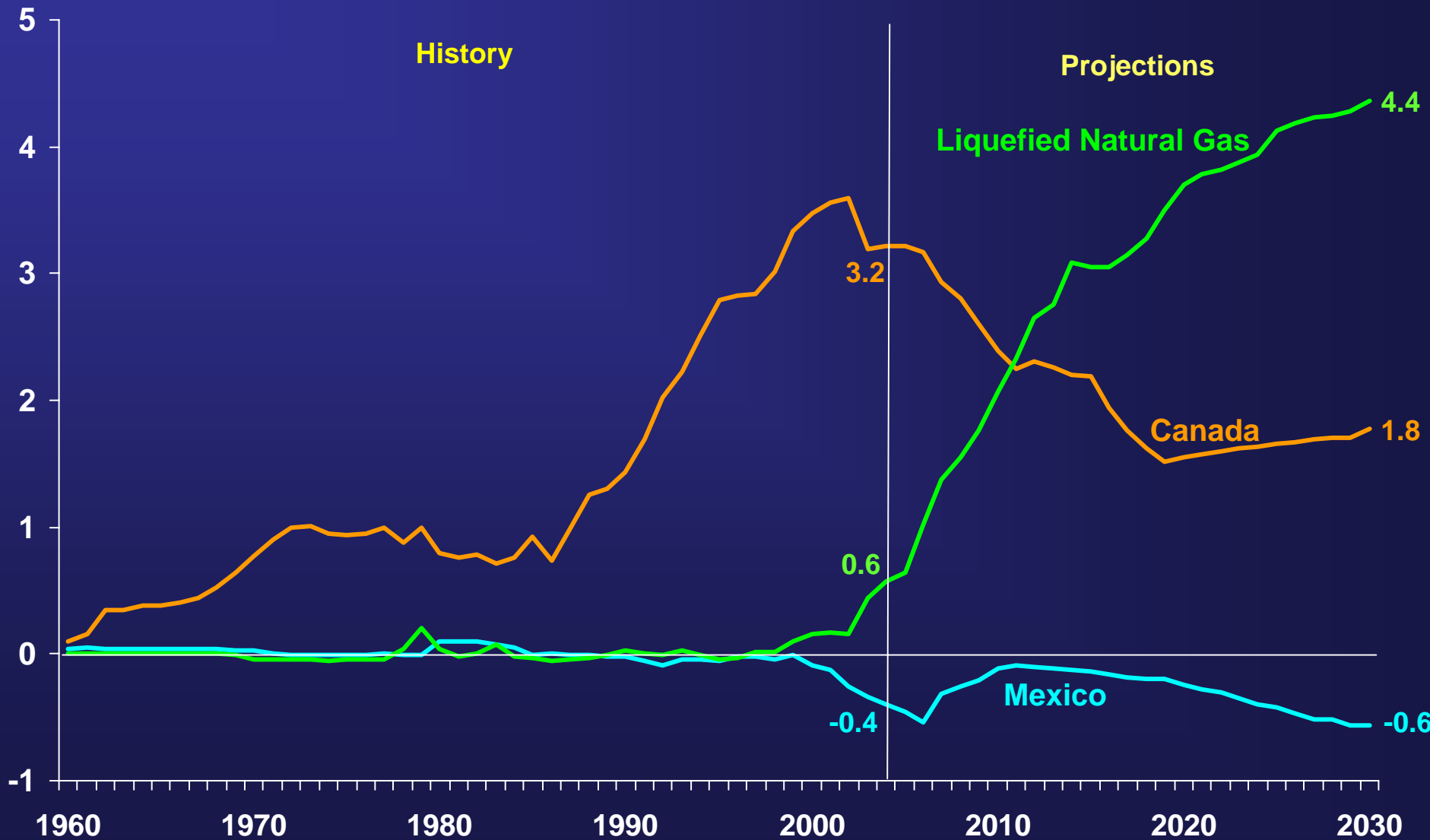
# Unplanned Capacity Additions (Gigawatts)



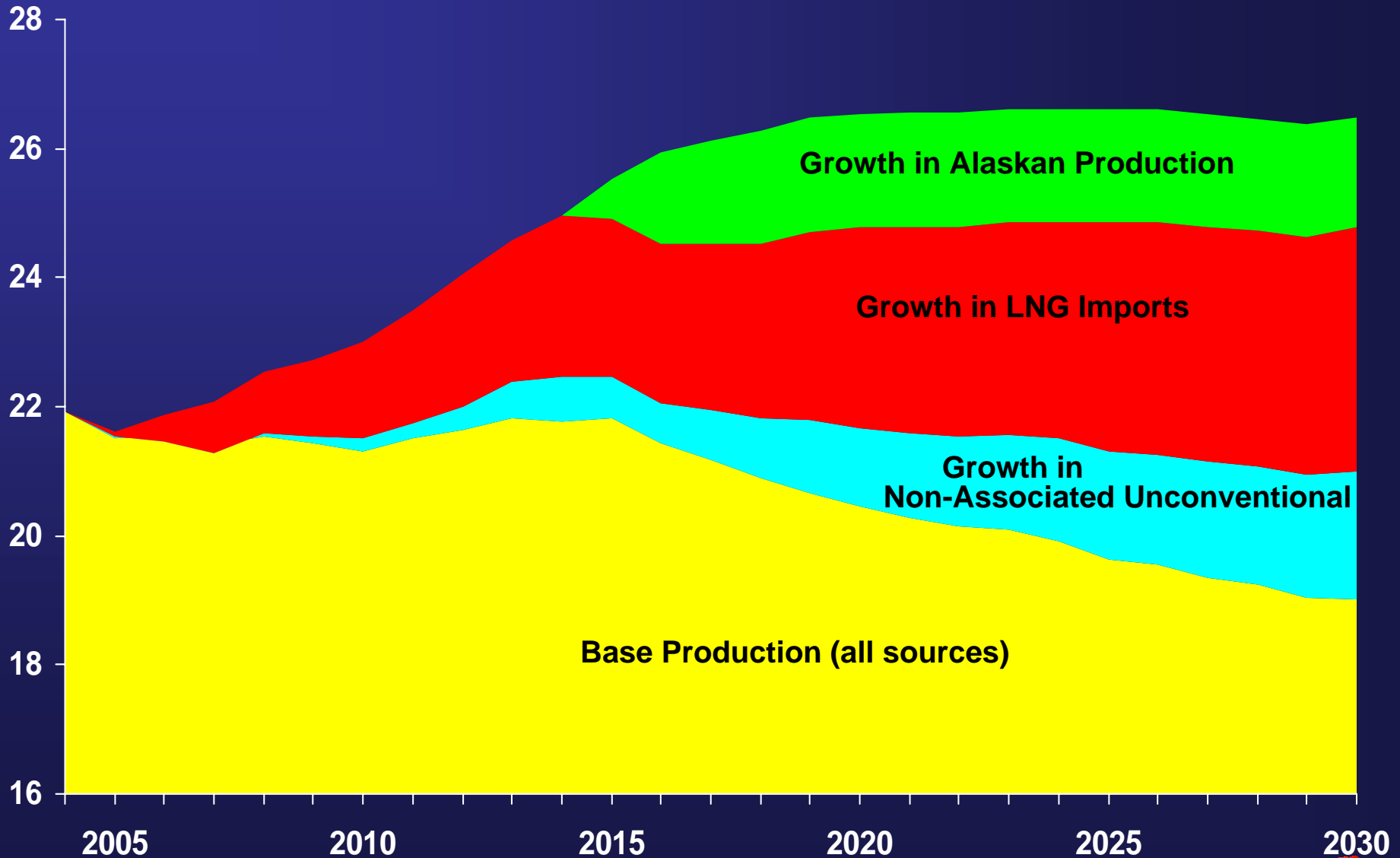
# U.S. Dry Natural Gas Production, 1990 - 2030 (trillion cubic feet)



# U.S. Net Imports of Natural Gas, 1960-2030 (trillion cubic feet)



# Major Sources of Incremental U.S. Natural Gas Supply, 2004-2030 (trillion cubic feet)



# Current U.S. LNG Import Terminals





# Natural Gas Imports, 1997-2007 (billion cubic feet)

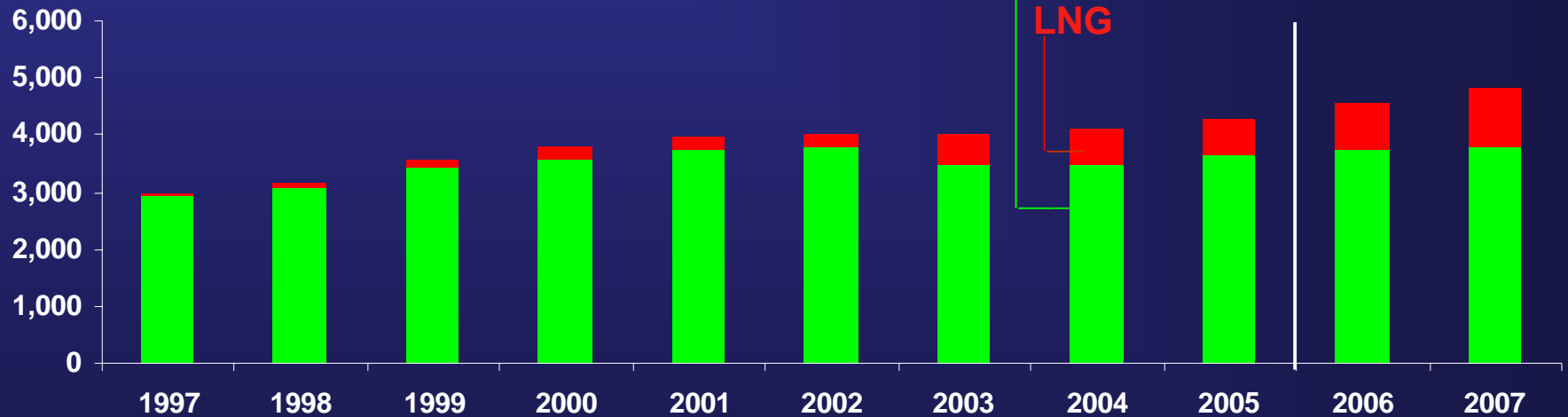
## LNG Imports:

2004: 650 Bcf

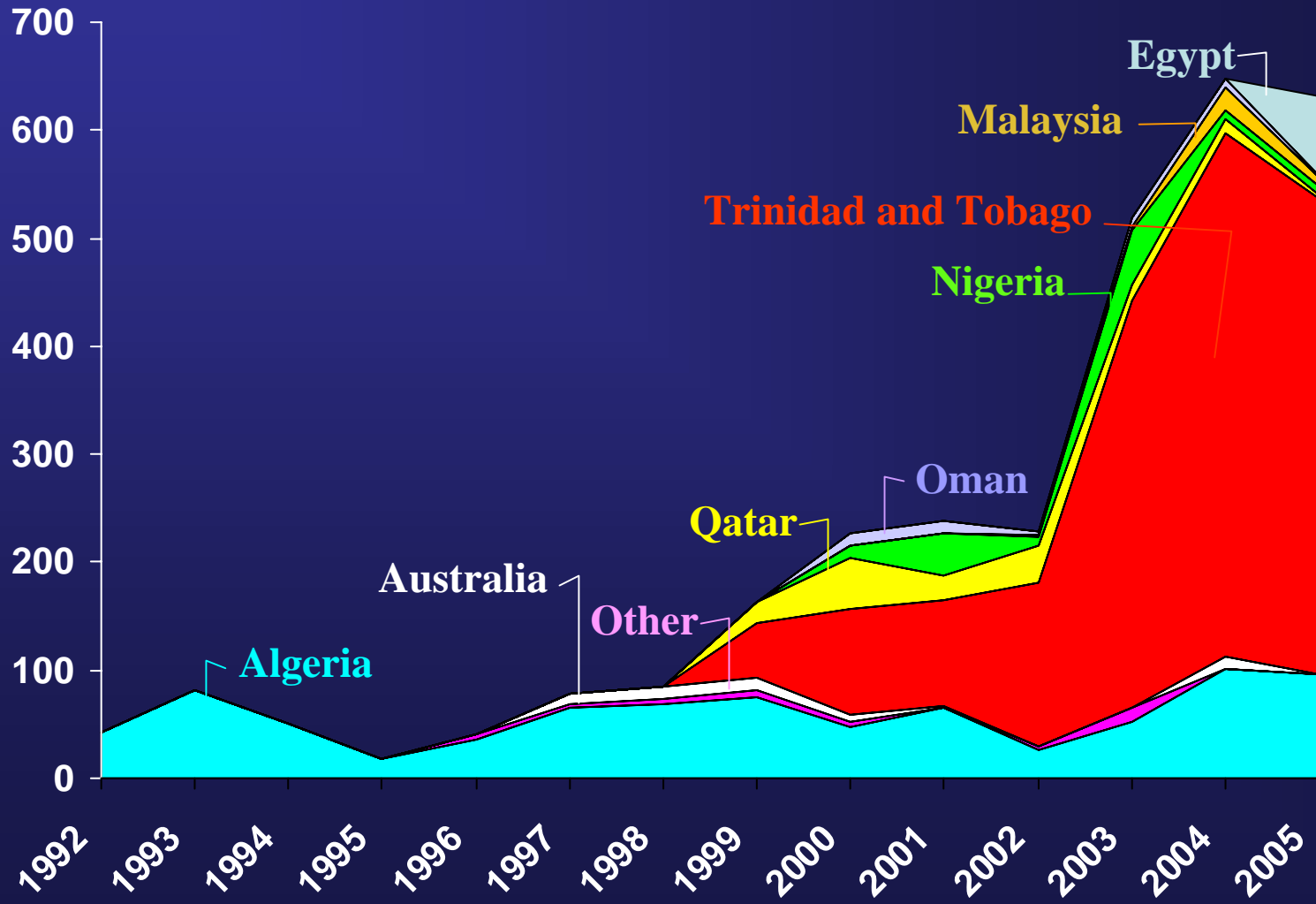
2005: 630 Bcf

2006: 830 Bcf

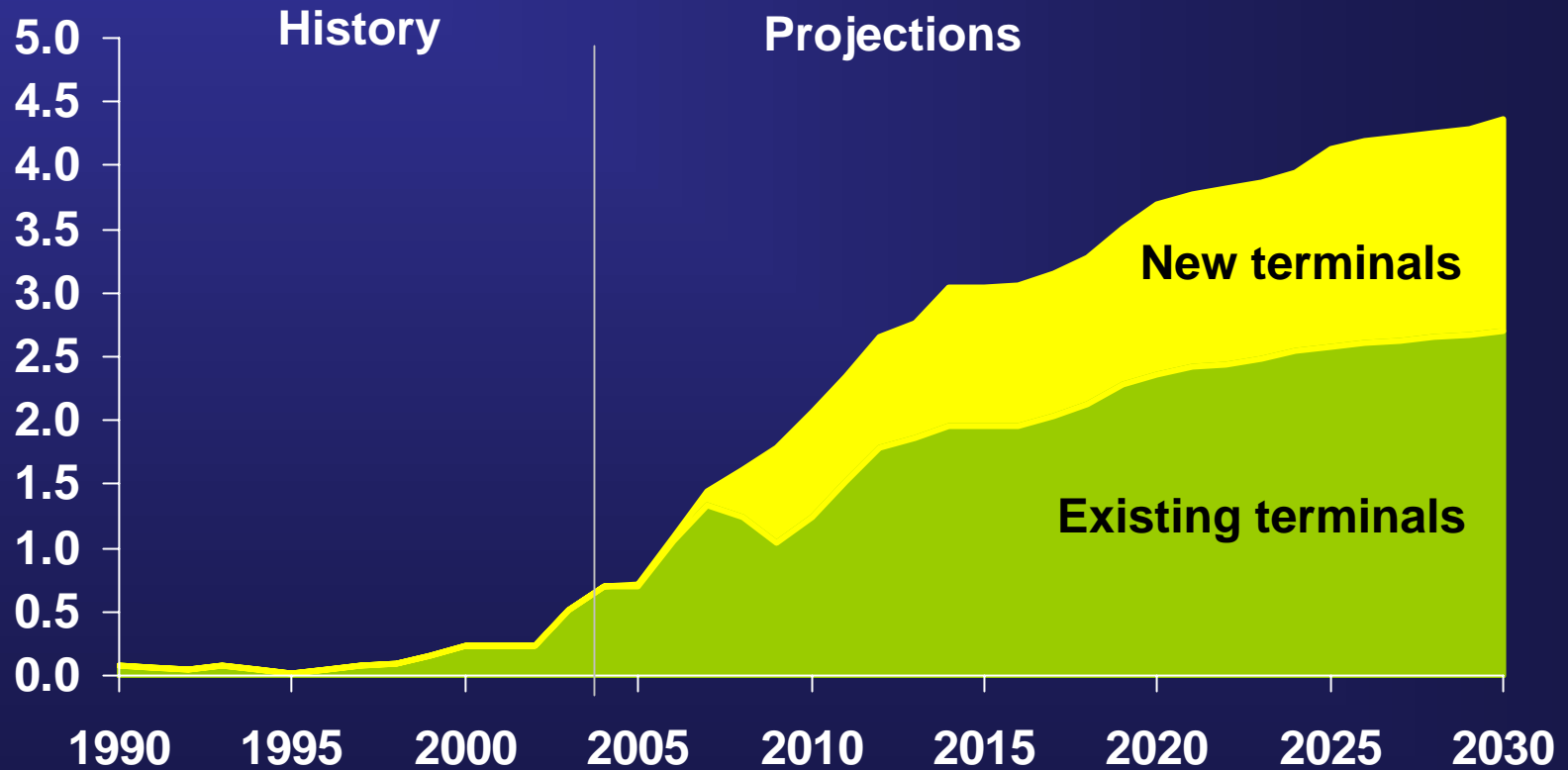
2007: 1,030 Bcf



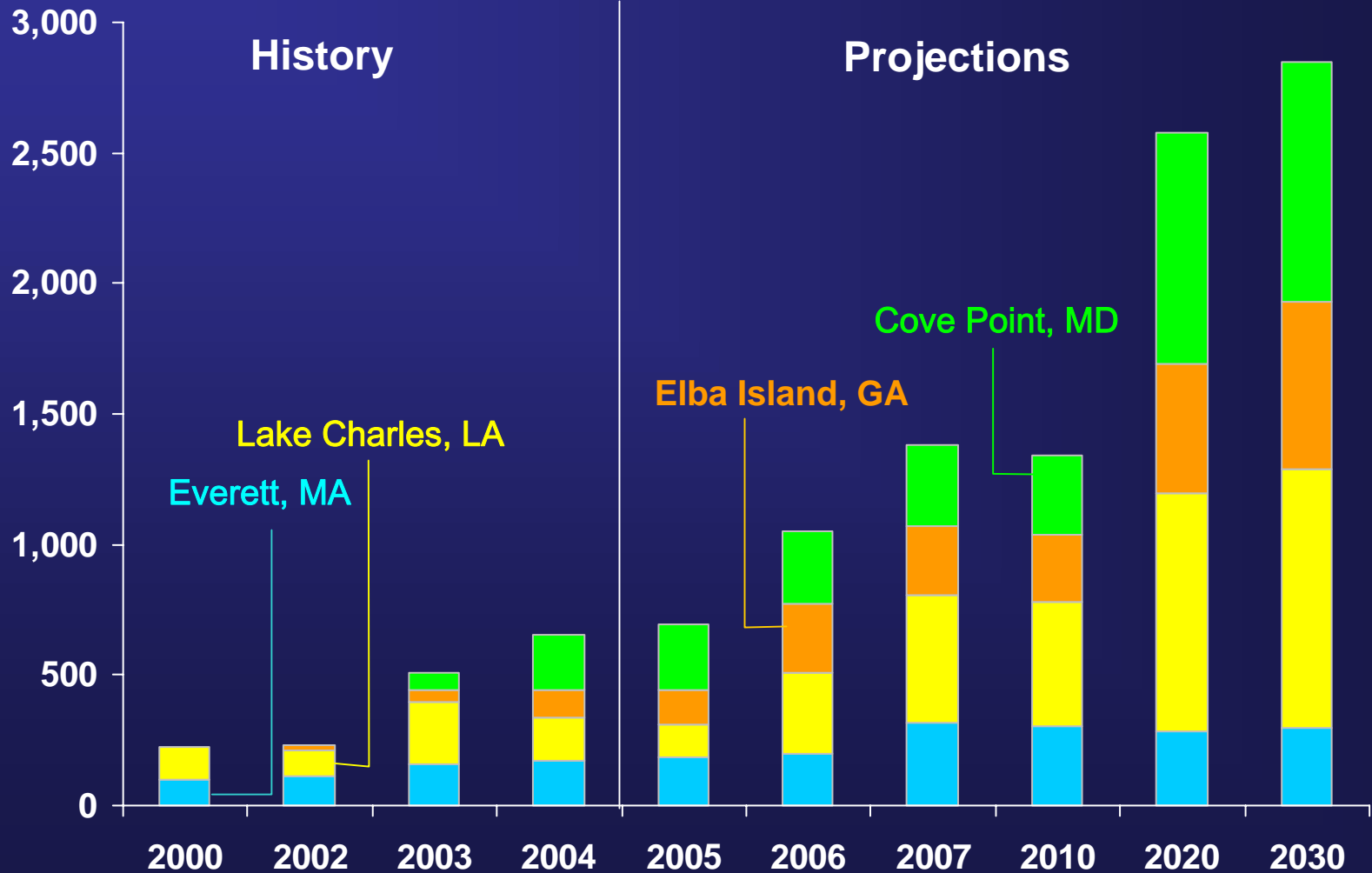
# U.S. LNG Imports by Country, 1992-2005 (billion cubic feet)



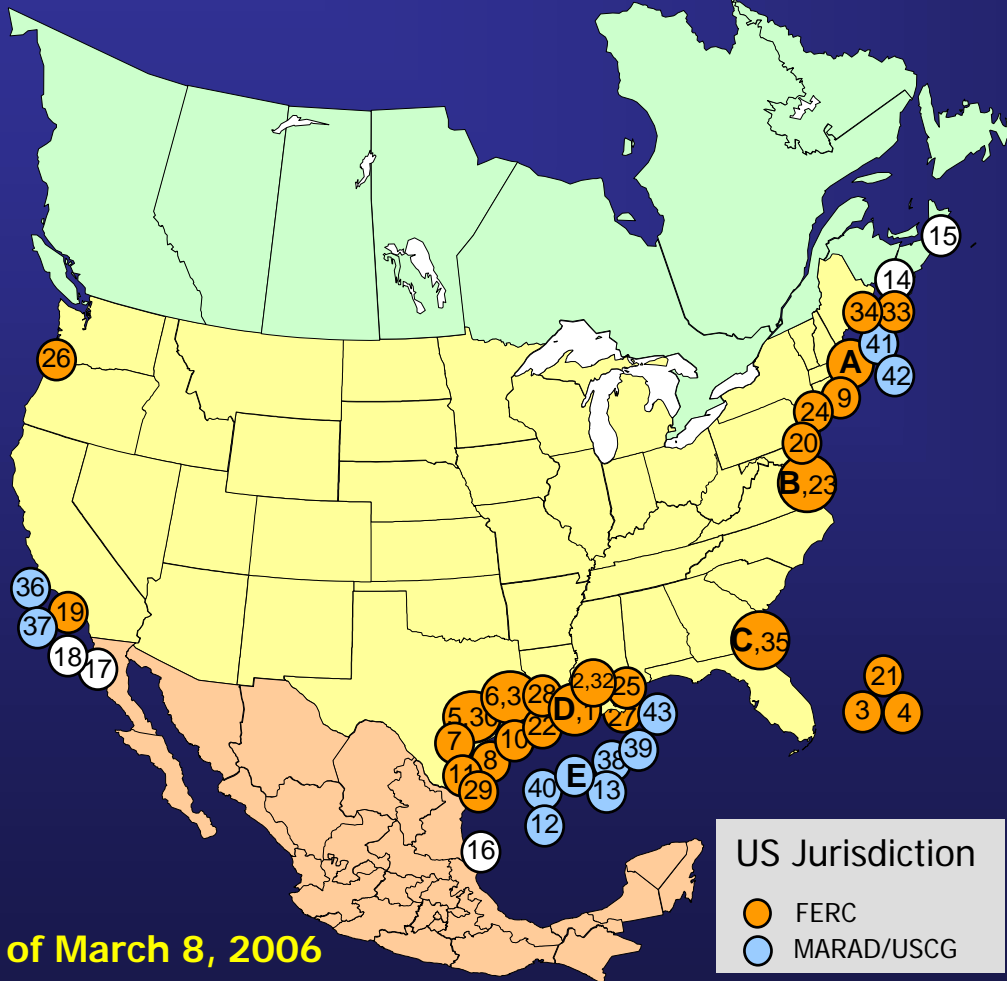
# U.S. LNG Imports, 1990-2025 (trillion cubic feet)



# LNG Imports at Existing Onshore Terminals, 2000-2030 (billion cubic feet)



# Existing and Proposed North American LNG Terminals



US Jurisdiction

- FERC
- MARAD/USCG

As of March 8, 2006

\* US pipeline approved;  
LNG terminal pending in Bahamas

**CONSTRUCTED**

- A. Everett, MA : 1.035 Bcfd (SUEZ/Tractebel - DOMAC)
- B. Cove Point, MD : 1.0 Bcfd (Dominion - Cove Point LNG)
- C. Elba Island, GA : 1.2 Bcfd (El Paso - Southern LNG)
- D. Lake Charles, LA : 1.5 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: 0.6 Bcfd (Southern Union - Trunkline LNG)
- 2. Hackberry, LA : 1.5 Bcfd (Cameron LNG - 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. Corpus Christi, TX: 2.6 Bcfd (Cheniere LNG)
- 8. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol - ExxonMobil)
- 9. Fall River, MA : 0.8 Bcfd (Weaver's Cove Energy/Hess LNG)
- 10. Sabine, TX : 1.0 Bcfd (Golden Pass - ExxonMobil)
- 11. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)

**APPROVED BY MARAD/COAST GUARD**

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

**CANADIAN APPROVED TERMINALS**

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

**MEXICAN APPROVED TERMINALS**

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

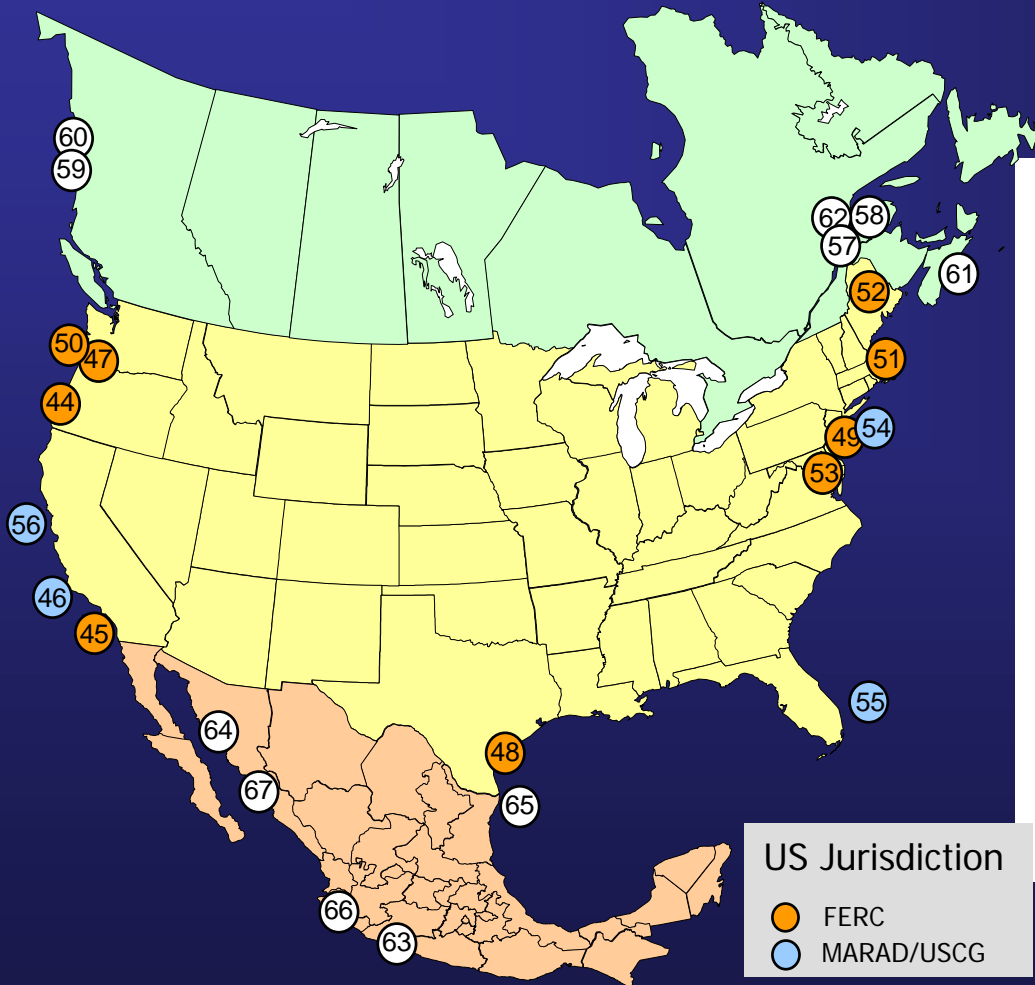
**PROPOSED TO FERC**

- 19. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
- 20. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
- 21. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/FPL )
- 22. Port Arthur, TX: 1.5 Bcfd (Sempra)
- 23. Cove Point, MD : 0.8 Bcfd (Dominion)
- 24. LI Sound, NY: 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
- 25. Pascagoula, MS: 1.0 Bcfd (Gulf LNG Energy LLC)
- 26. Bradwood, OR: 1.0 Bcfd (Northern Star LNG - Northern Star Natural Gas LLC)
- 27. Pascagoula, MS: 1.3 Bcfd (Casotte Landing - ChevronTexaco)
- 28. Cameron, LA: 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
- 29. Port Lavaca, TX: 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
- 30. Freeport, TX: 2.5 Bcfd (Cheniere/Freeport LNG Dev. - Expansion)
- 31. Sabine, LA: 1.4 Bcfd (Cheniere LNG - Expansion)
- 32. Hackberry, LA : 1.15 Bcfd (Cameron LNG - Sempra Energy - Expansion)
- 33. Pleasant Point, ME : 0.5 Bcfd (Quoddy Bay, LLC)
- 34. Robbinston, ME: 0.5 Bcfd (Downeast LNG - Kestrel Energy)
- 35. Elba Island, GA: 0.9 Bcfd (El Paso - Southern LNG)

**PROPOSED TO MARAD/COAST GUARD**

- 36. California Offshore: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
- 37. So. California Offshore : 0.5 Bcfd, (Crystal Energy)
- 38. Louisiana Offshore : 1.0 Bcfd (Main Pass McMoran Exp.)
- 39. Gulf of Mexico: 1.0 Bcfd (Compass Port - ConocoPhillips)
- 40. Gulf of Mexico: 1.5 Bcfd (Beacon Port Clean Energy Terminal - ConocoPhillips)
- 41. Offshore Boston, MA: 0.4 Bcfd (Neptune LNG - Tractebel)
- 42. Offshore Boston, MA: 0.8 Bcfd (Northeast Gateway - Excelerate Energy)
- 43. Gulf of Mexico: 1.4 Bcfd (Bienville Offshore Energy Terminal - TORP Technology)

# Potential North American LNG Terminals



**POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS**

- 44. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
- 45. Offshore California: 0.75 Bcfd, (Chevron Texaco)
- 46. Offshore California: 0.75 Bcfd (OceanWay - Woodside Natural Gas)
- 47. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
- 48. Galveston, TX: 1.2 Bcfd (Pelican Island - BP)
- 49. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
- 50. Astoria, OR: 1.0 Bcfd (Skipanon LNG - Calpine)
- 51. Boston, MA: 0.8 Bcfd (AES Battery Rock LLC - AES Corp.)
- 52. Calais, ME: ? Bcfd (BP Consulting LLC)
- 53. Baltimore, MD: 1.5 Bcfd (AES Sparrows Point - AES Corp.)
- 54. Offshore New York: 2.0 Bcfd (Safe Harbor Energy - ASIC, LLC)
- 55. Offshore Florida: ? Bcfd (Calypso SUEZ)
- 56. Offshore California: 0.6 Bcfd (Pacific Gateway - Exceleerate Energy)

**POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS**

- 57. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
- 58. Rivière-du- Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
- 59. Kitimat, BC: 0.61 Bcfd (Galveston LNG)
- 60. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
- 61. Goldboro, NS 1.0 Bcfd (Keltic Petrochemicals)
- 62. Énergie Grande-Anse QC: 1.0 Bcfd

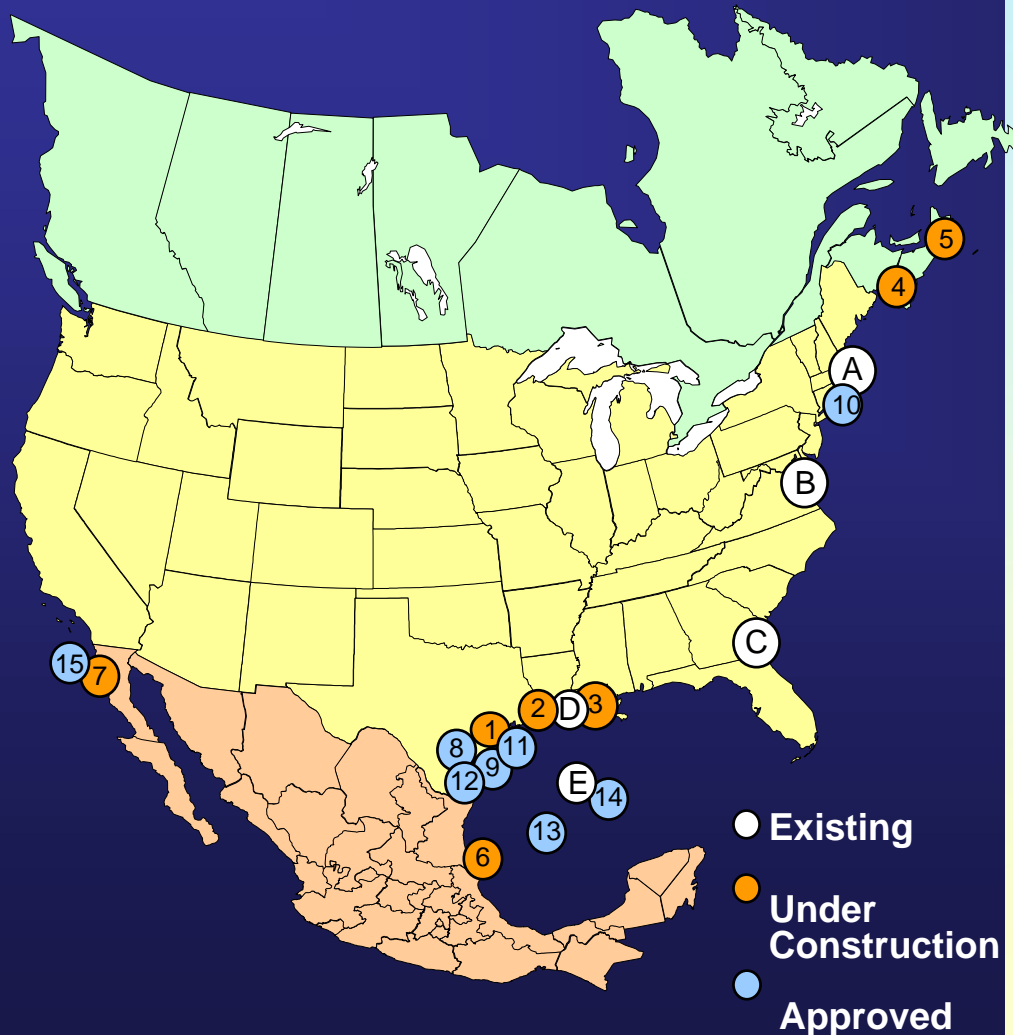
**POTENTIAL MEXICAN SITES IDENTIFIED BY PROJECT SPONSORS**

- 63. Lázaro Cárdenas, MX : 0.5 Bcfd (Tractebel/Repsol)
- 64. Puerto Libertad, MX: 1.3 Bcfd (Sonora Pacific LNG)
- 65. Offshore Gulf, MX: 1.0 Bcfd (Dorado - Tidelands)
- 66. Manzanillo, MX: 0.5 Bcfd
- 67. Topolobampo, MX: 0.5 Bcfd

As of March 8, 2006

# North American LNG Terminals

## Existing, Under Construction, and Approved as of March 3, 2006



### Existing: 5.235 Bcfd

A. Everett, MA :	1.035 Bcfd
B. Cove Point, MD :	1.0 Bcfd
C. Elba Island, GA :	1.2 Bcfd
D. Lake Charles, LA :	1.5 Bcfd
E. <u>Gulf Gateway Energy Bridge:</u>	<u>0.5 Bcfd</u>
<b>Total:</b>	<b>5.235 Bcfd</b>
<b>Tcf/yr: US: 1.9</b>	<b>Tot: 1.9</b>

### New Terminals Under Construction: 9.3 Bcfd

1. Freeport, TX, U.S. :	1.5 Bcfd
2. Sabine, LA, U.S. :	2.6 Bcfd
3. Hackberry, LA, U.S. :	1.5 Bcfd
4. St. John, NB, Canada :	1.0 Bcfd
5. Point Tupper, NS, Canada :	1.0 Bcfd
6. Altamira, Tamulipas, Mexico:	0.7 Bcfd
7. <u>Baja California, Mexico :</u>	<u>1.0 Bcfd</u>
<b>Total:</b>	<b>9.3 Bcfd</b>
<b>Tcf/yr: US: 2.0, Can: 0.7, Mex: 0.6, Tot: 3.4</b>	

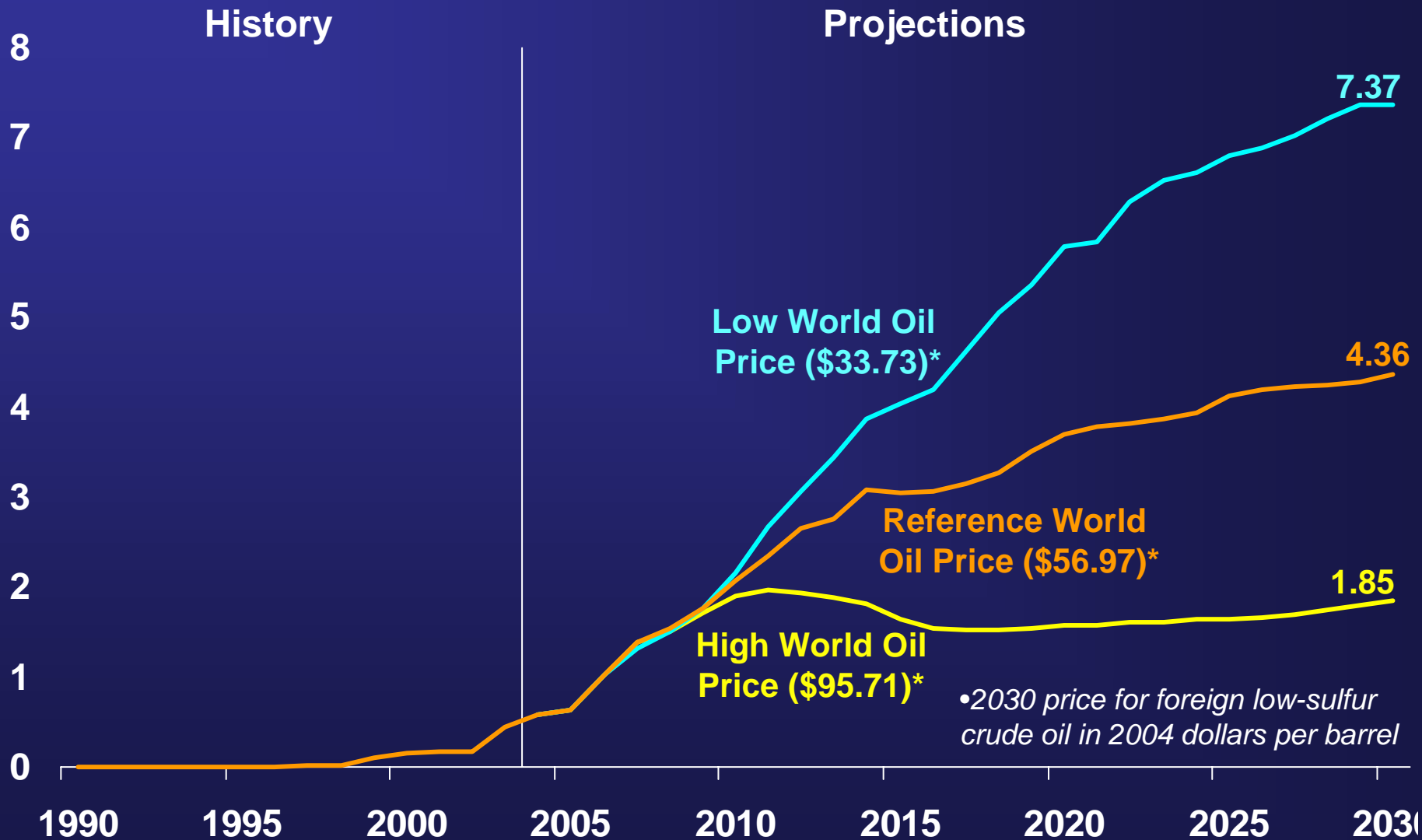
### Approved Projects: 11.0 Bcfd

D. Lake Charles Expansion:	0.6 Bcfd
8. Corpus Christi, TX, U.S.:	2.6 Bcfd
9. Corpus Christi, TX, U.S. :	1.0 Bcfd
10. Fall River, MA, U.S. :	0.8 Bcfd
11. Sabine, TX, U.S. :	1.0 Bcfd
12. Corpus Christi, TX, U.S.:	1.0 Bcfd
13. Port Pelican:	1.6 Bcfd
14. Louisiana Offshore :	1.0 Bcfd
15. <u>Baja California - Offshore :</u>	<u>1.4 Bcfd</u>
<b>Total:</b>	<b>11.0 Bcfd</b>
<b>Tcf/yr: US: 3.5, Mex: 0.5, Tot: 4.0</b>	

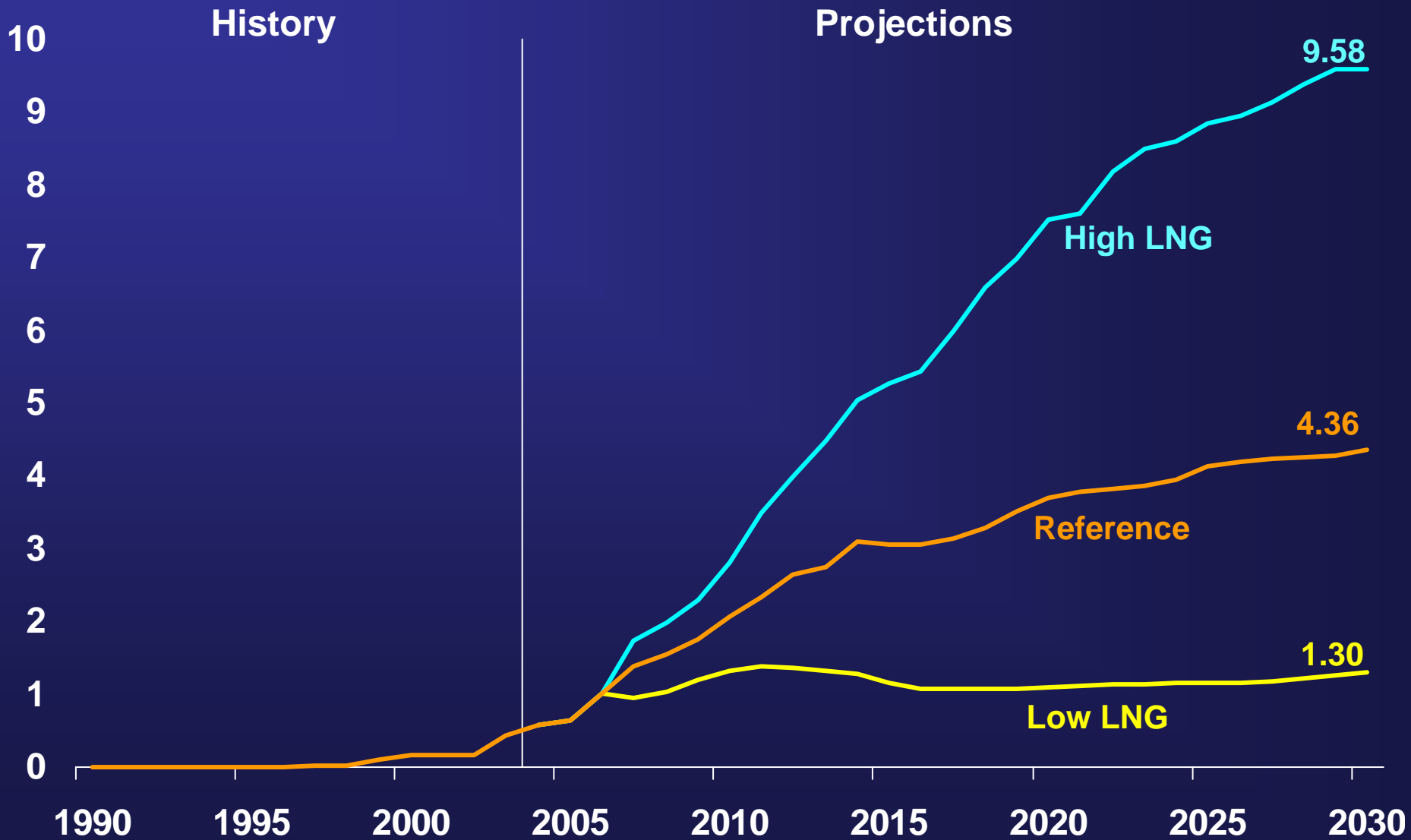
# LNG Cases



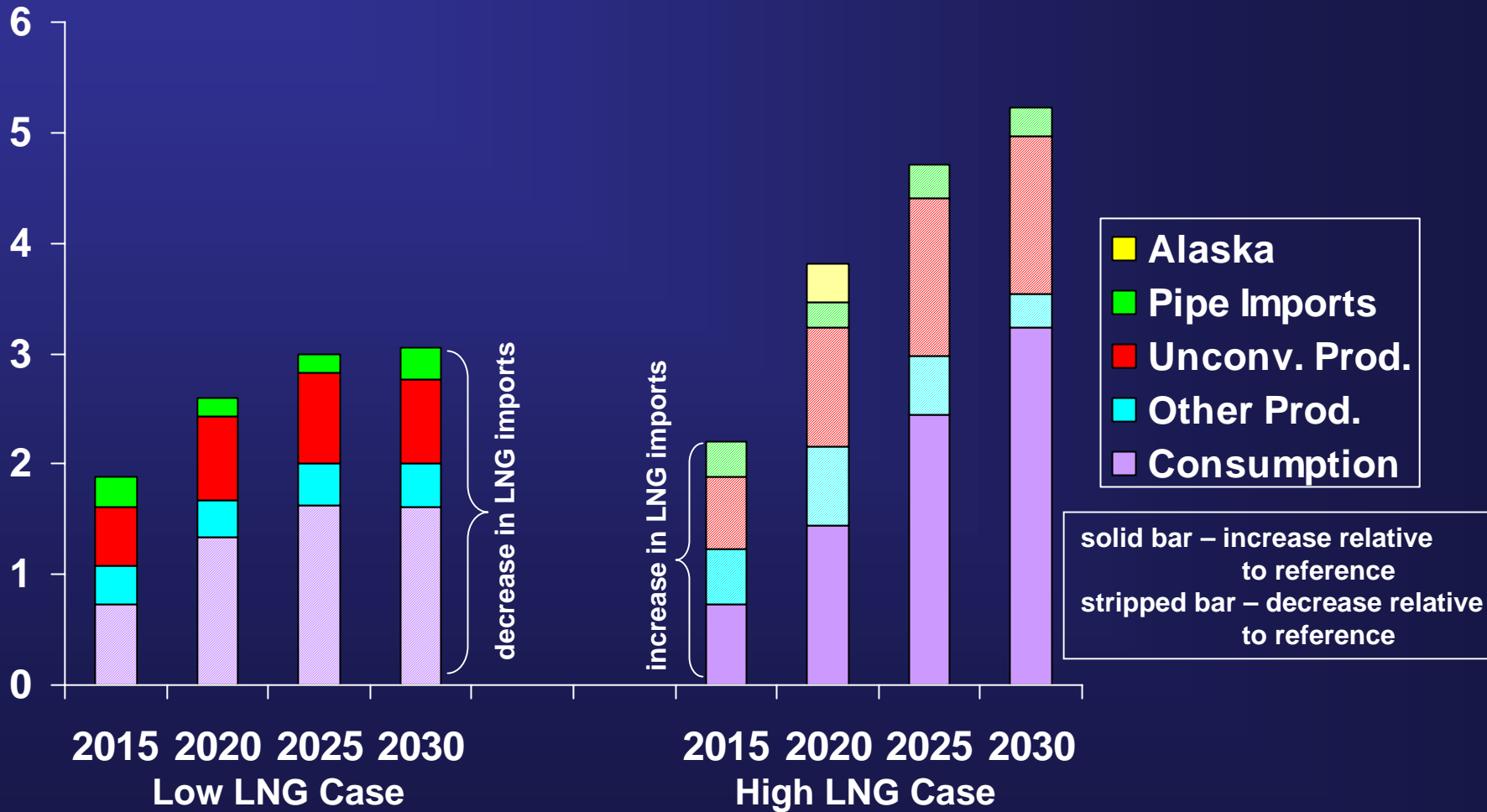
# Net Imports of Liquefied Natural Gas, 1990-2030 (trillion cubic feet)



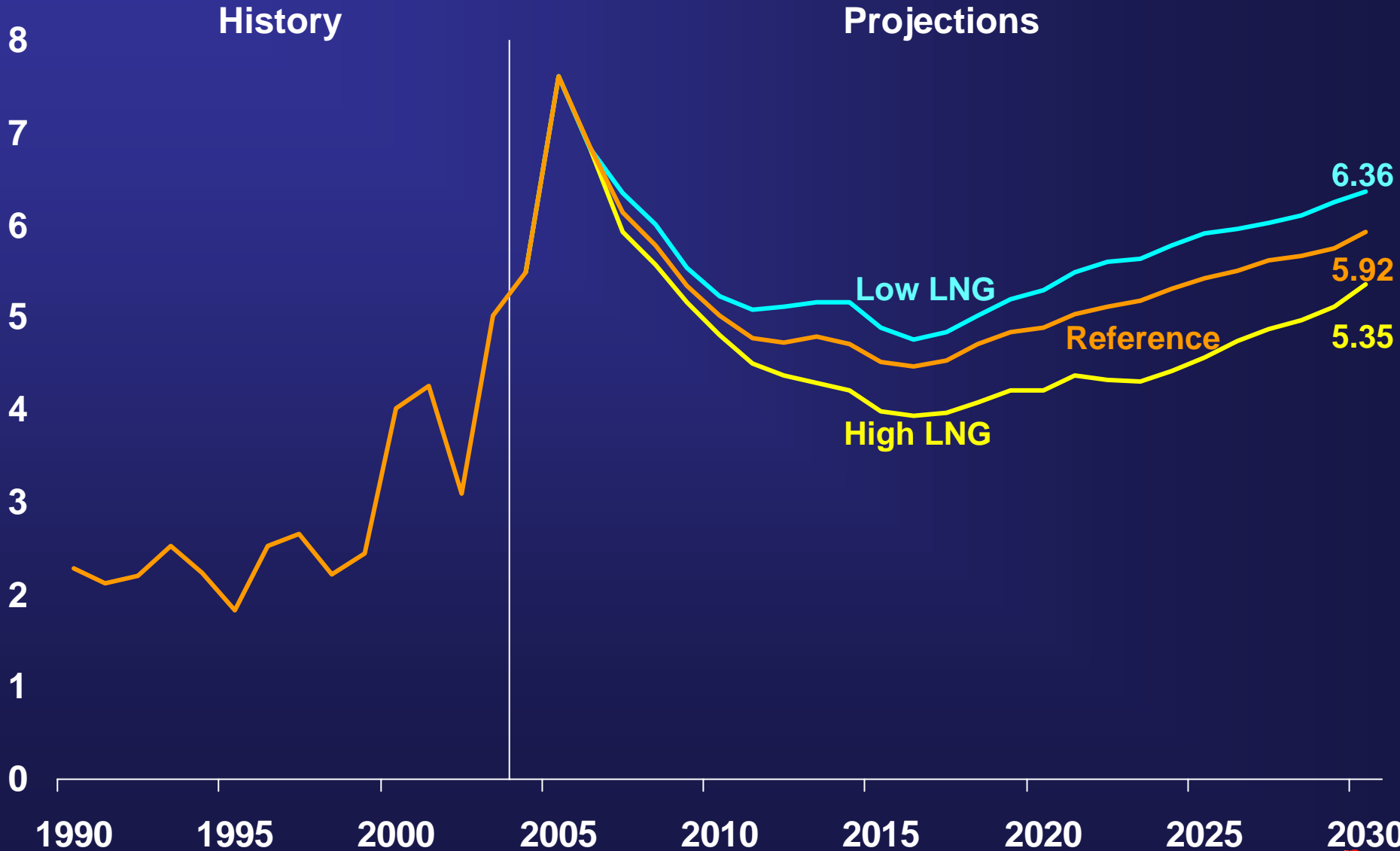
# Net Imports of Liquefied Natural Gas, 1990-2030 (trillion cubic feet)



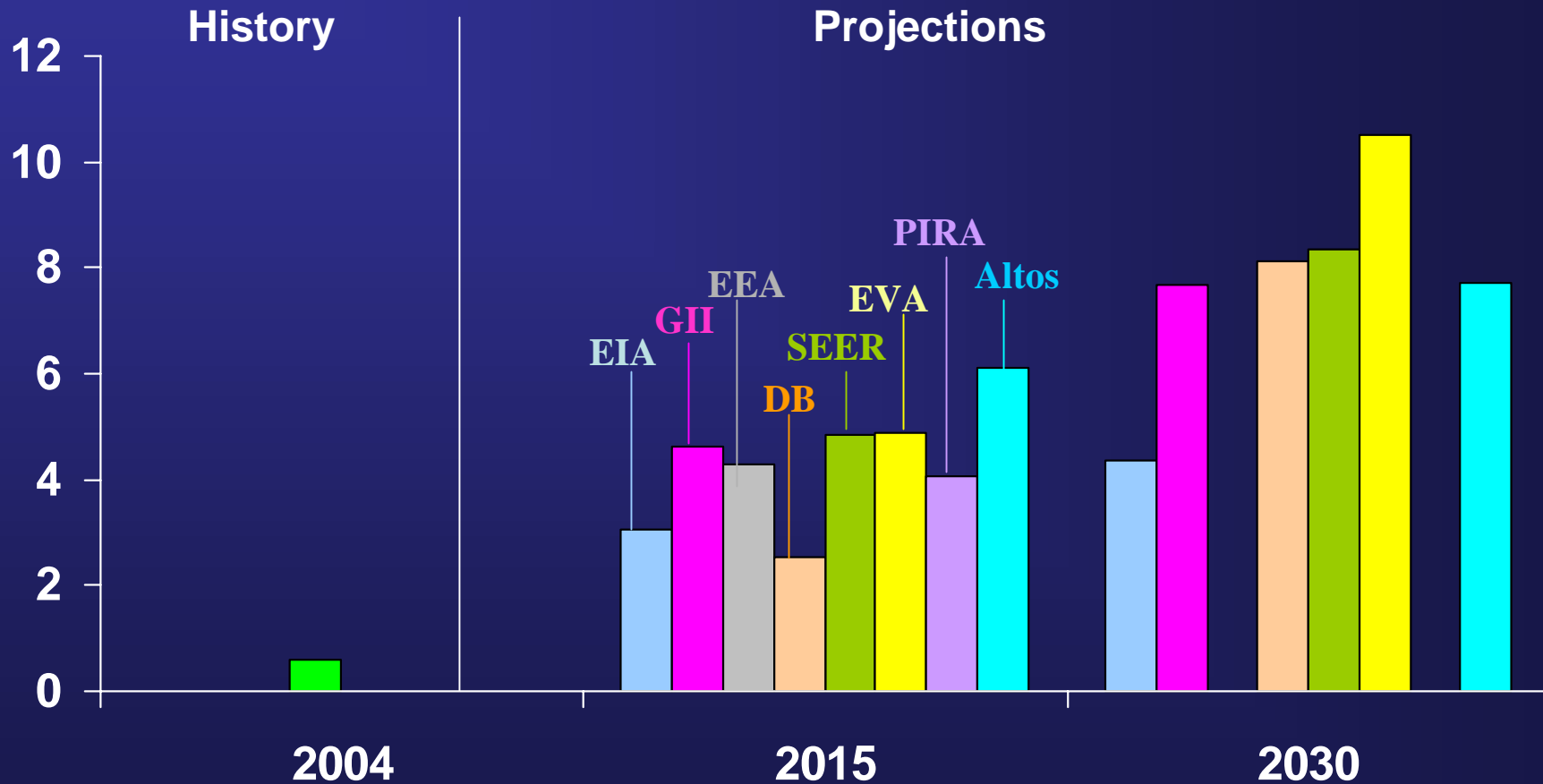
# Change in Consumption and Supply in Response to Change in LNG Imports from Reference Case Levels (trillion cubic feet)



# Lower 48 Natural Gas Wellhead Prices, 1990-2030 (2004 dollars per Mcf)



# Comparison of Net LNG Import Forecasts (trillion cubic feet)



## ***Annual Energy Outlook 2006* indicates that through 2030....**

- Imports are expected to play an important role in U.S. natural gas markets, accounting for 21 percent of total U.S. natural gas consumption in 2030, compared with 15 percent in 2004
- LNG imports are projected to grow from 650 billion cubic feet in 2004 to 4.4 trillion cubic feet in 2030, with net LNG imports rising from 17 percent of net imports in 2004 to 78 percent in 2030
- The most rapid growth in LNG import capacity will occur over the next decade, with peak annual capacity increasing from 1.4 trillion cubic feet in 2004 to 4.9 trillion cubic feet in 2015
- Construction of new terminals is expected to slow after 2015 as rising natural gas prices limit consumption, especially in the electric generators sector, with peak annual import capacity reaching 5.8 trillion cubic feet in 2030
- World oil markets have a strong influence on the U.S. LNG market
- Wide variations in the amount of LNG imported have only moderate impacts on domestic natural gas prices

## Periodic Reports

*Short-Term Energy Outlook, monthly*

*Annual Energy Outlook 2006, February 2006*

*International Energy Outlook 2005, July 2005*

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