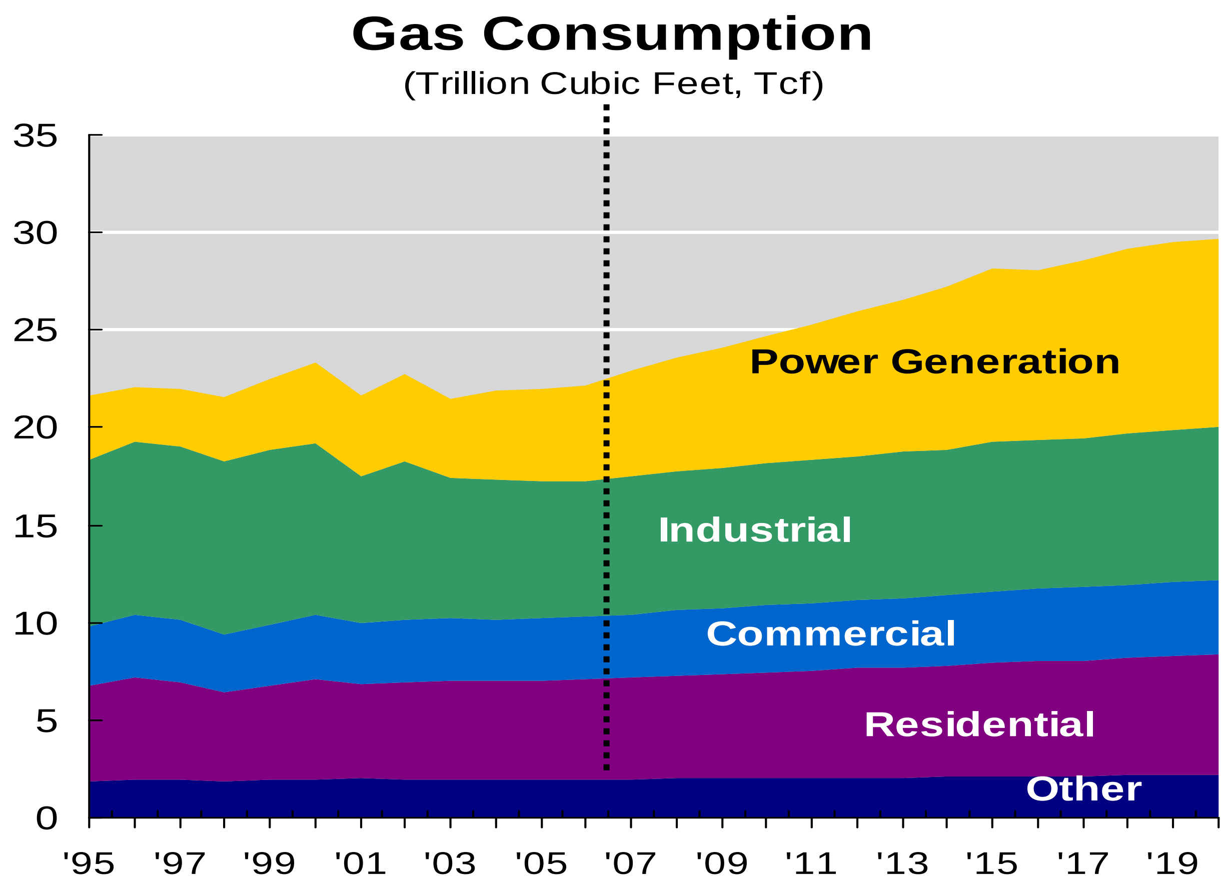
America's Natural Gas Supply: Meeting Growing Demand in a Competitive Energy Market

American Gas Association

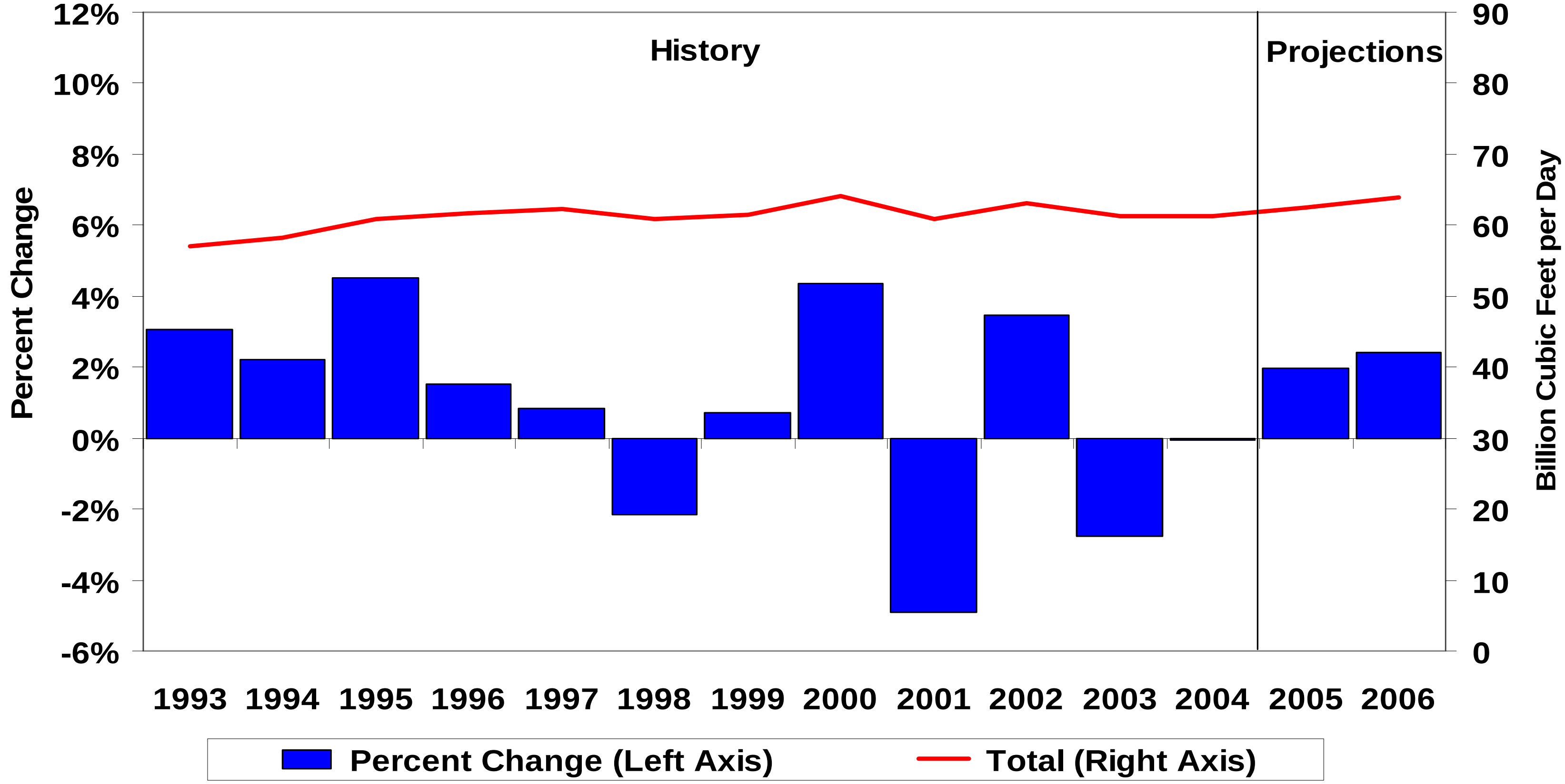
2005

Gas Demand Outlook



Source: Energy and Environmental Analysis (EEA)

Total U.S. Natural Gas Demand Growth Patterns



Short-Term Energy Outlook, July 2005

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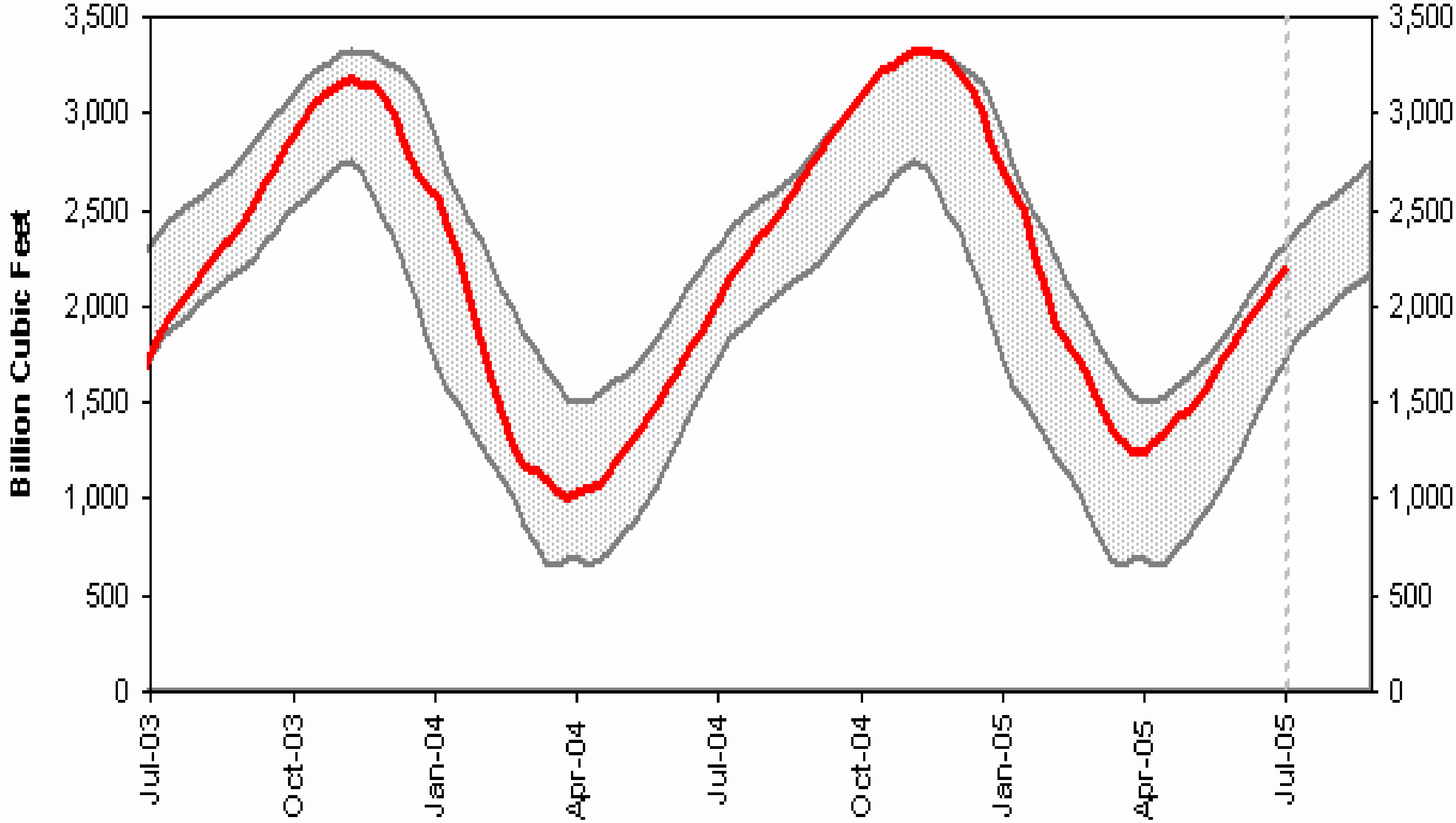
Working Gas in Underground Storage Compared With 5-Year Range (EIA)



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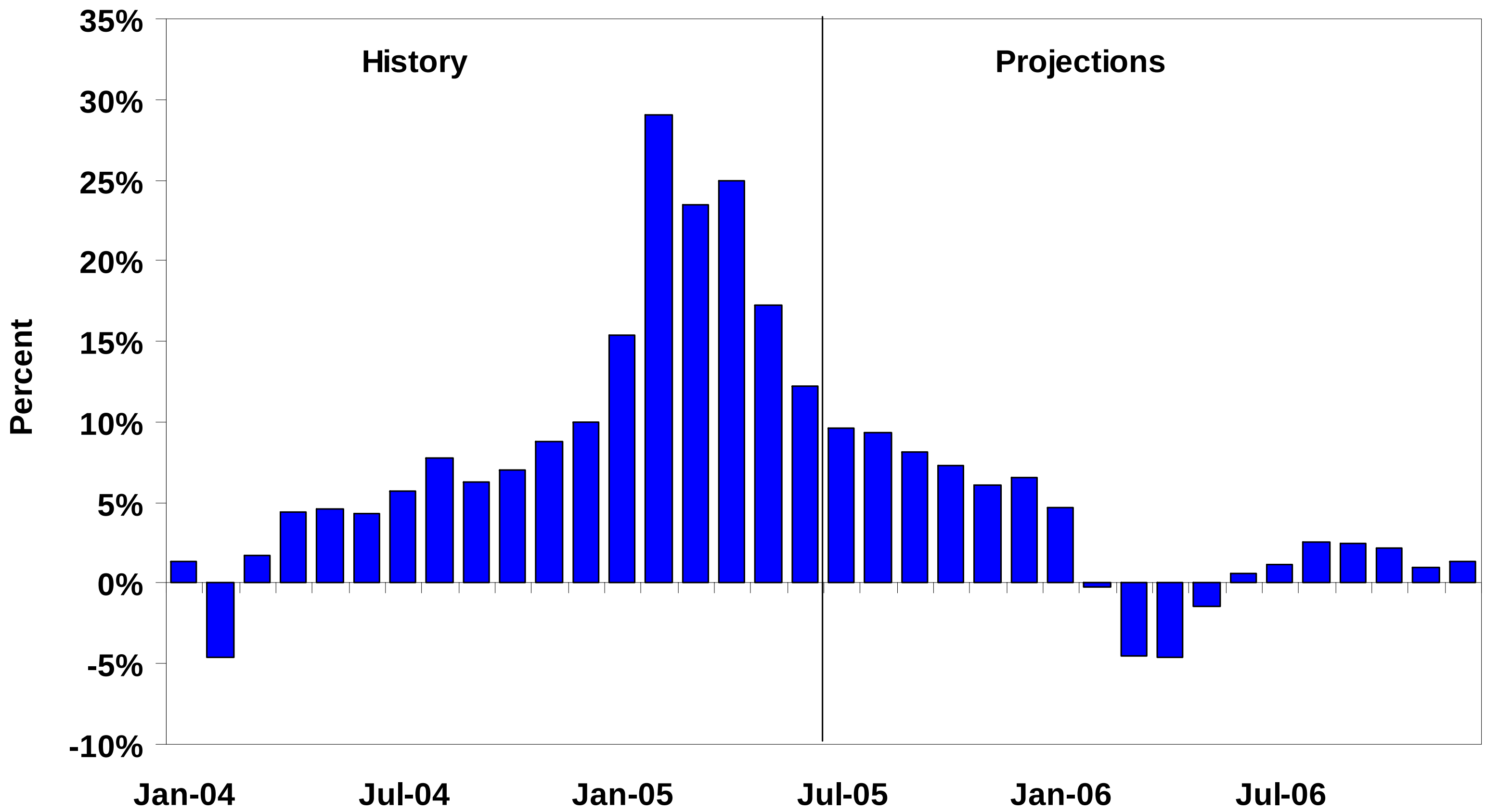
U.S. Working Gas in Storage

(Percent Difference from Previous 5-Year Average)



Short-Term Energy Outlook, July 2005

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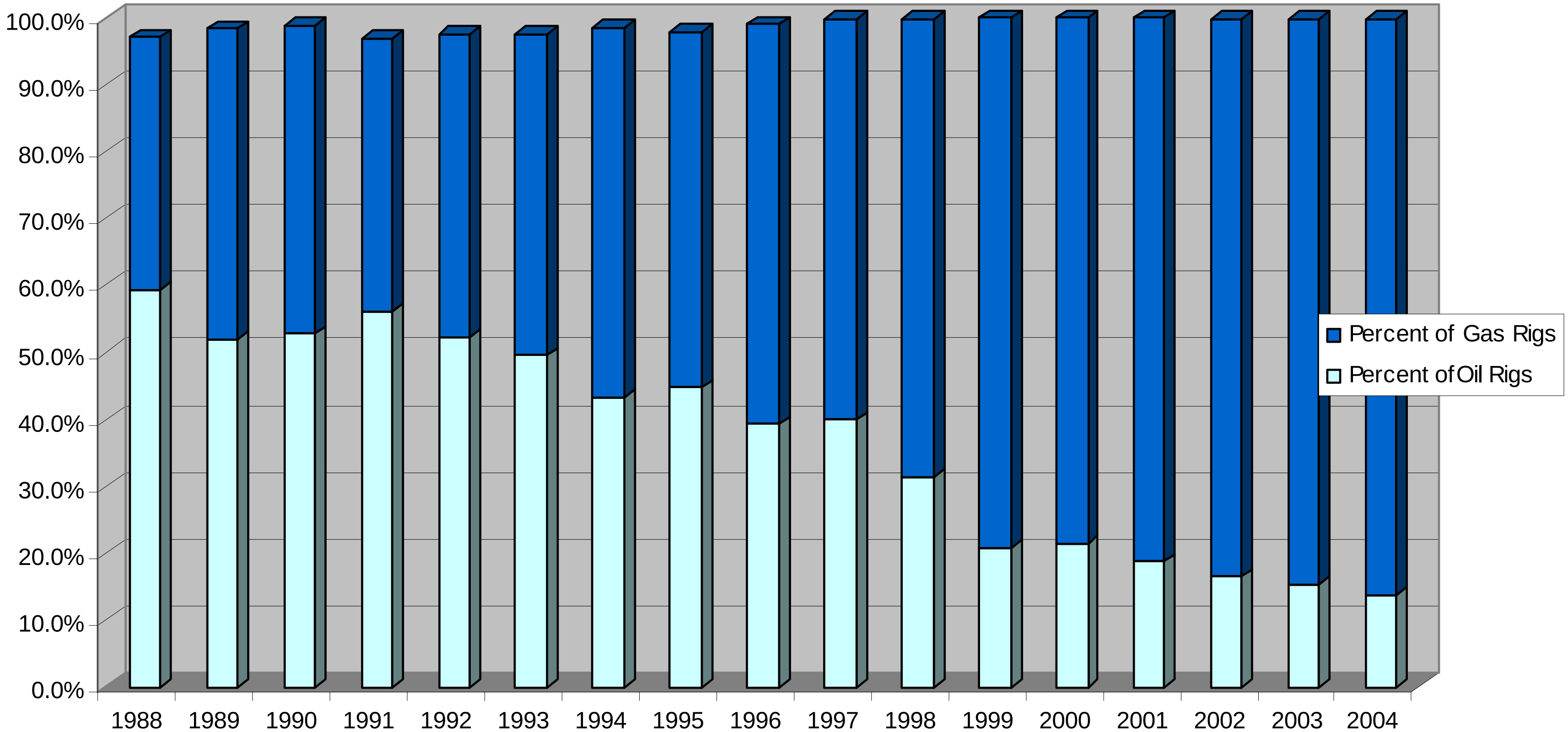
U.S. Annual Percentage of Gas vs. Oil Rigs Operating

Source: Lippman Consulting, Inc.



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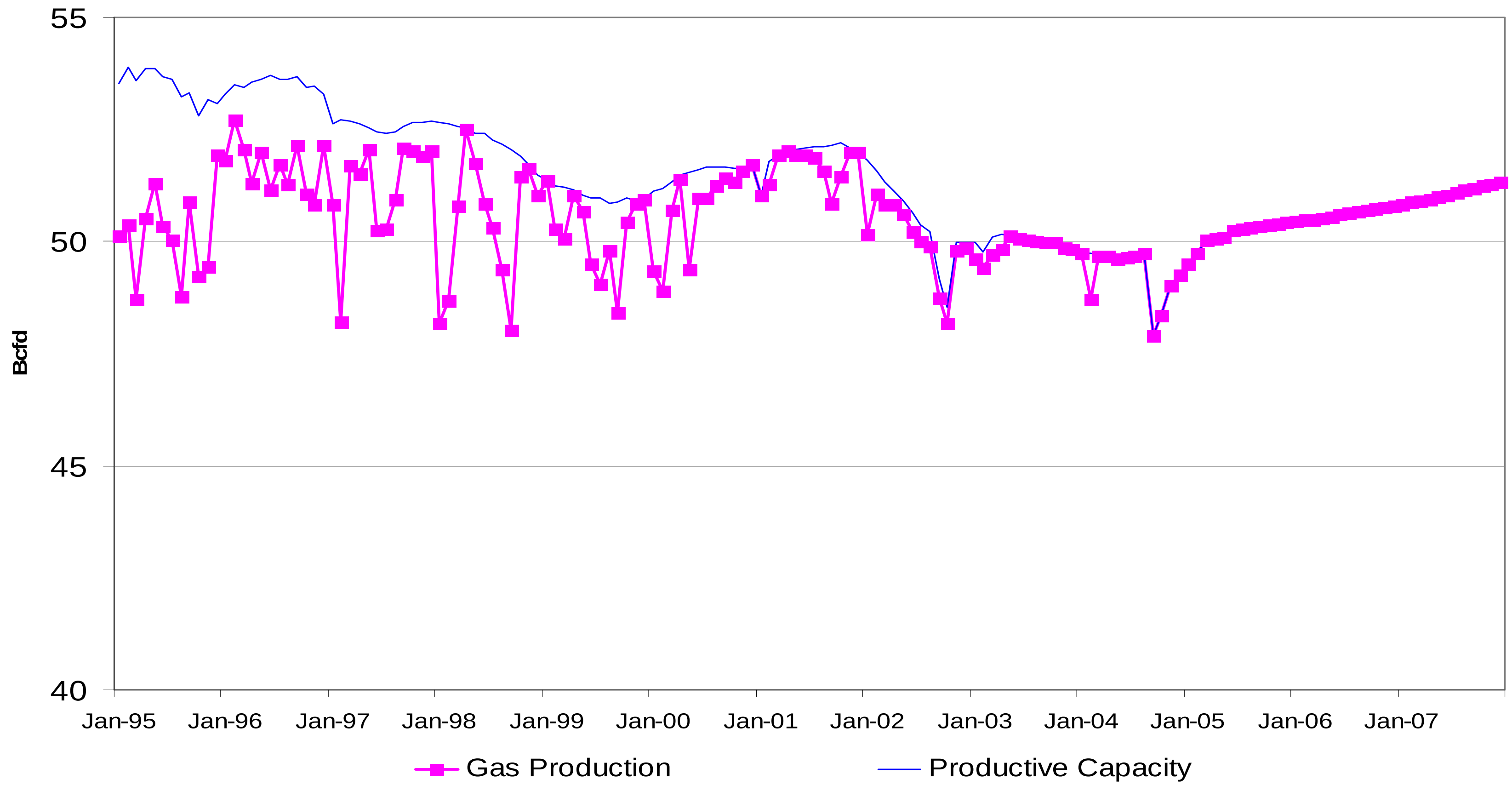
Lower-48 Dry Gas Production vs. Dry Gas Productive Capacity

Source: Energy and Environmental Analysis, Inc.



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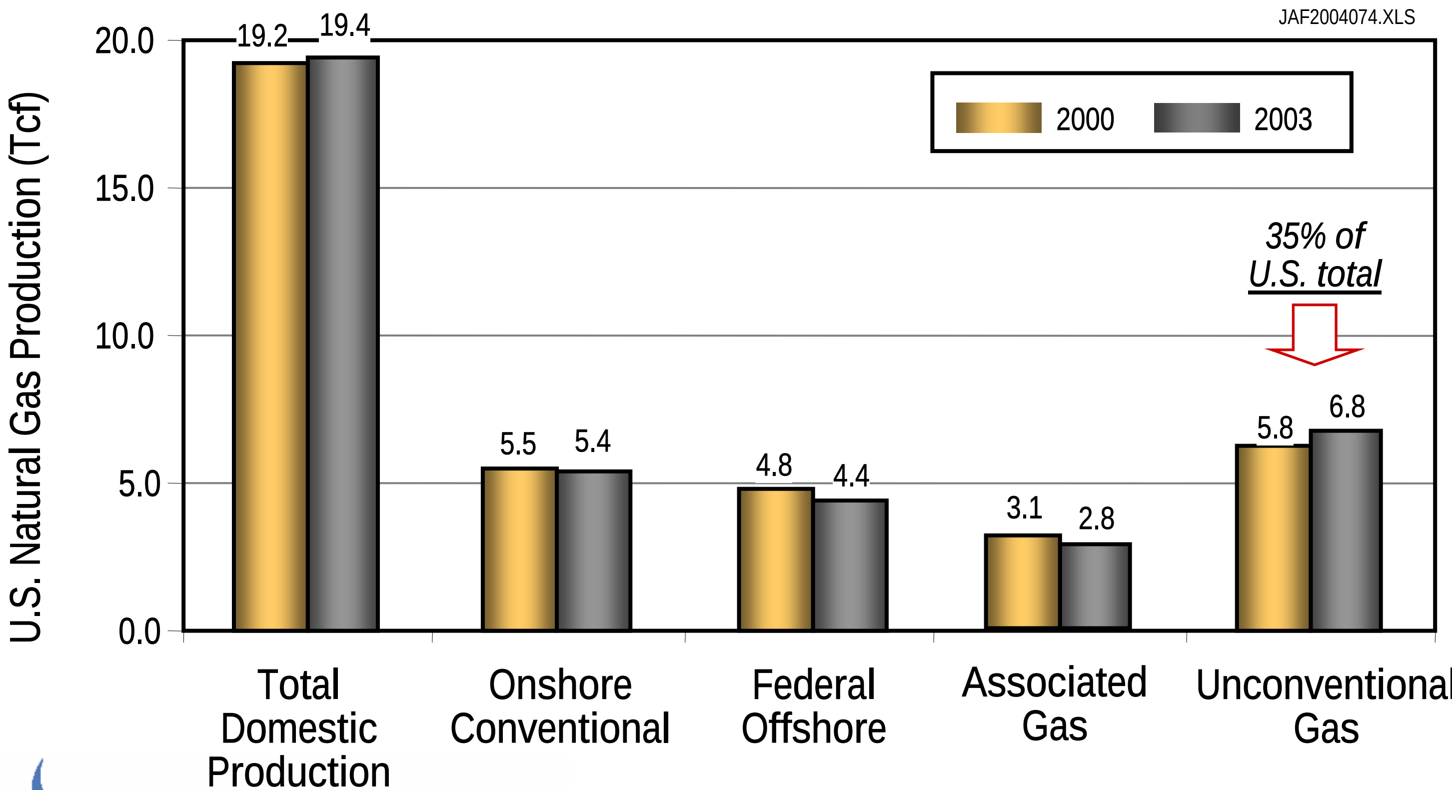
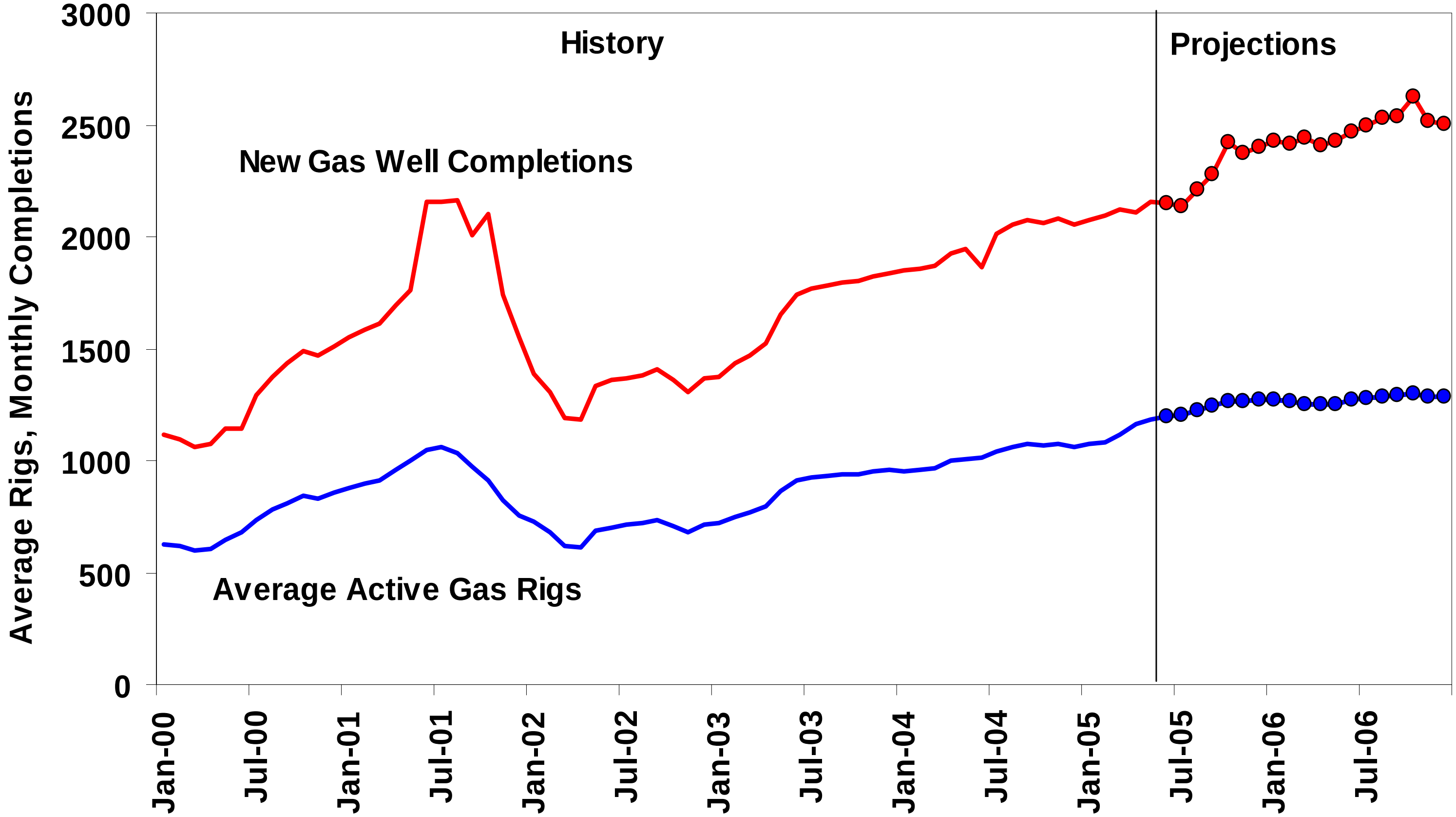
STATUS OF U.S. UNCONVENTIONAL GAS PRODUCTION

In the past three years, unconventional gas has helped maintain U.S. production and now accounts for 35% of U.S. natural gas supplies.



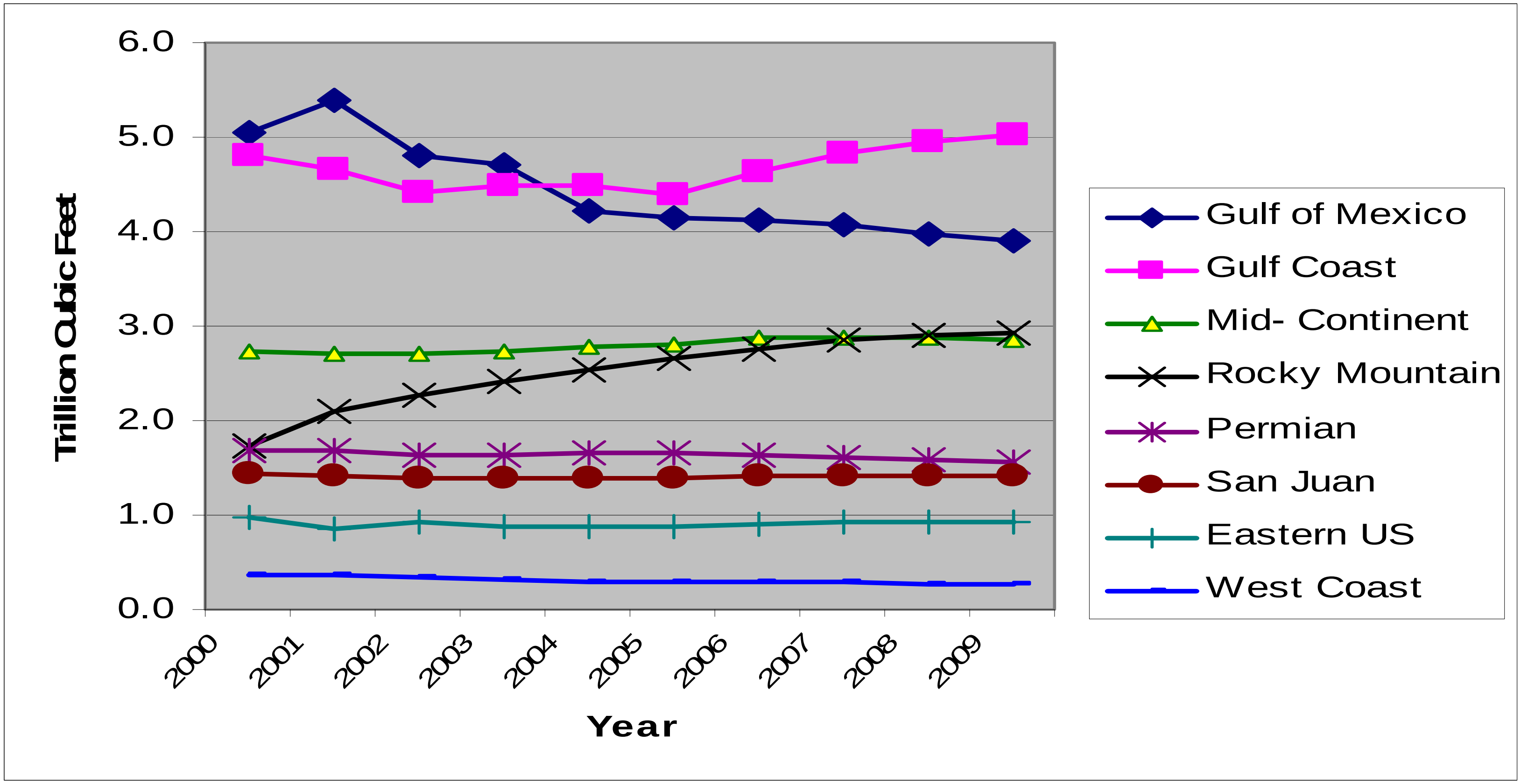
Source:
- *Conventional/Offshore – EIA Annual Reserve Reports.*
- *Unconventional – Advanced Resources International data base.*

U.S. Natural Gas-Directed Drilling Activity



Short-Term Energy Outlook, July 2005

Lower-48 Annual Gas Production By Region 2000-2009



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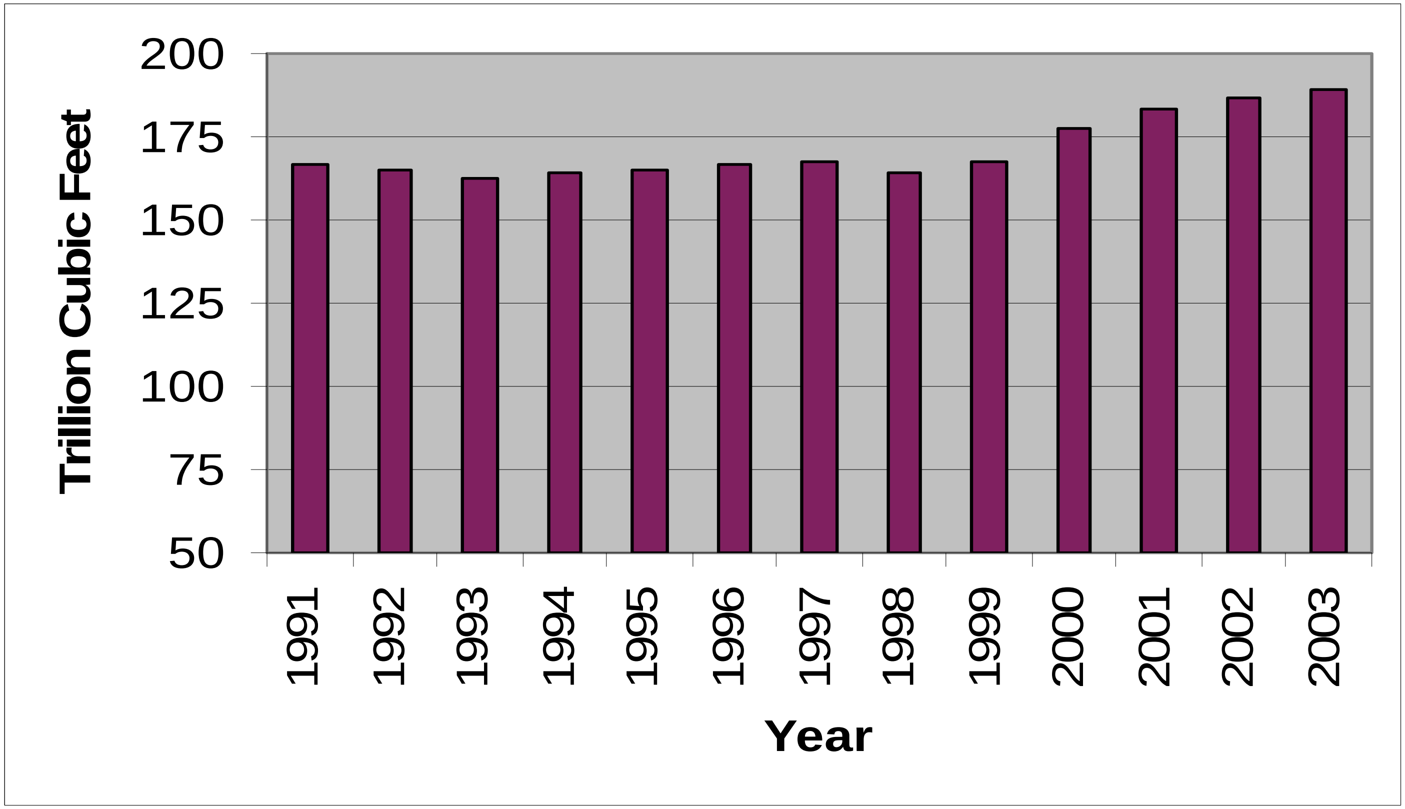
Source: Lippman Consulting, Inc.

Natural Gas Proved Reserves 1991 – 2003

Energy Information Administration



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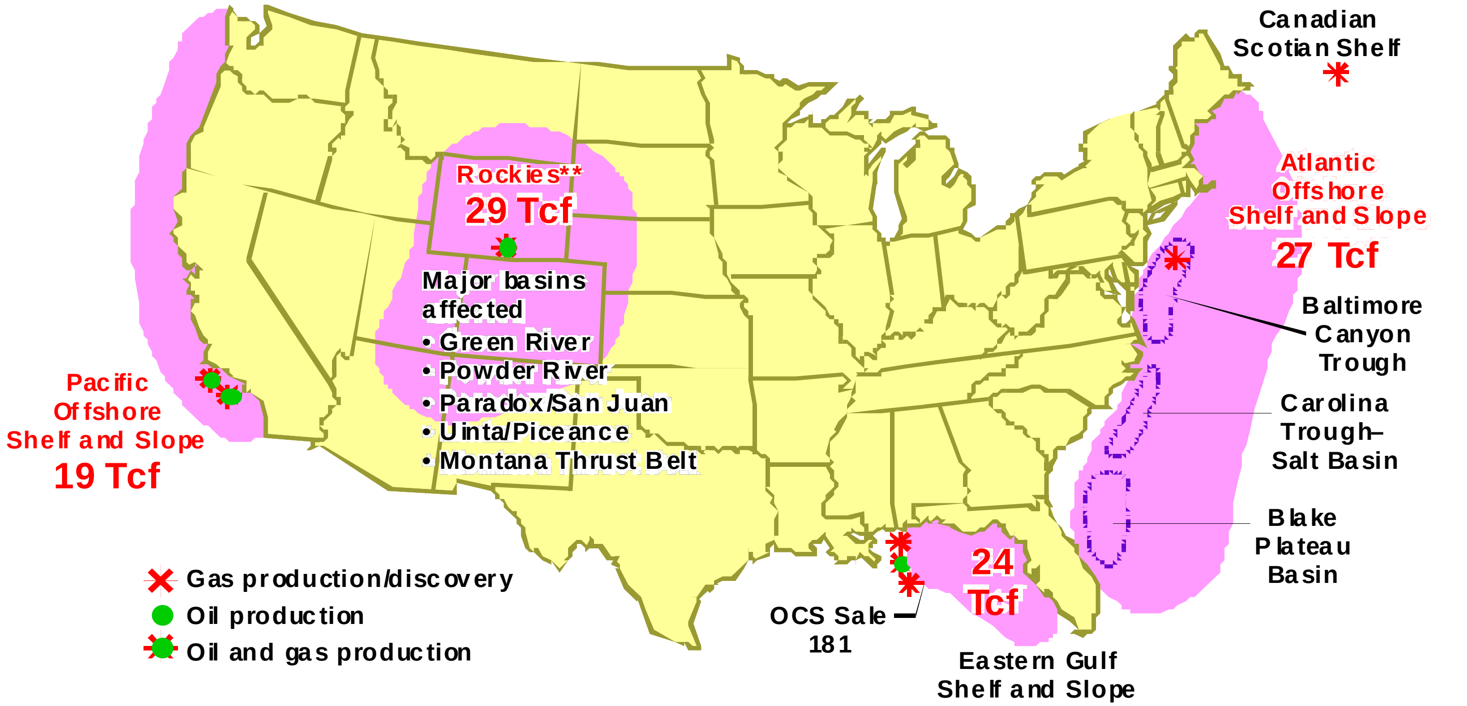
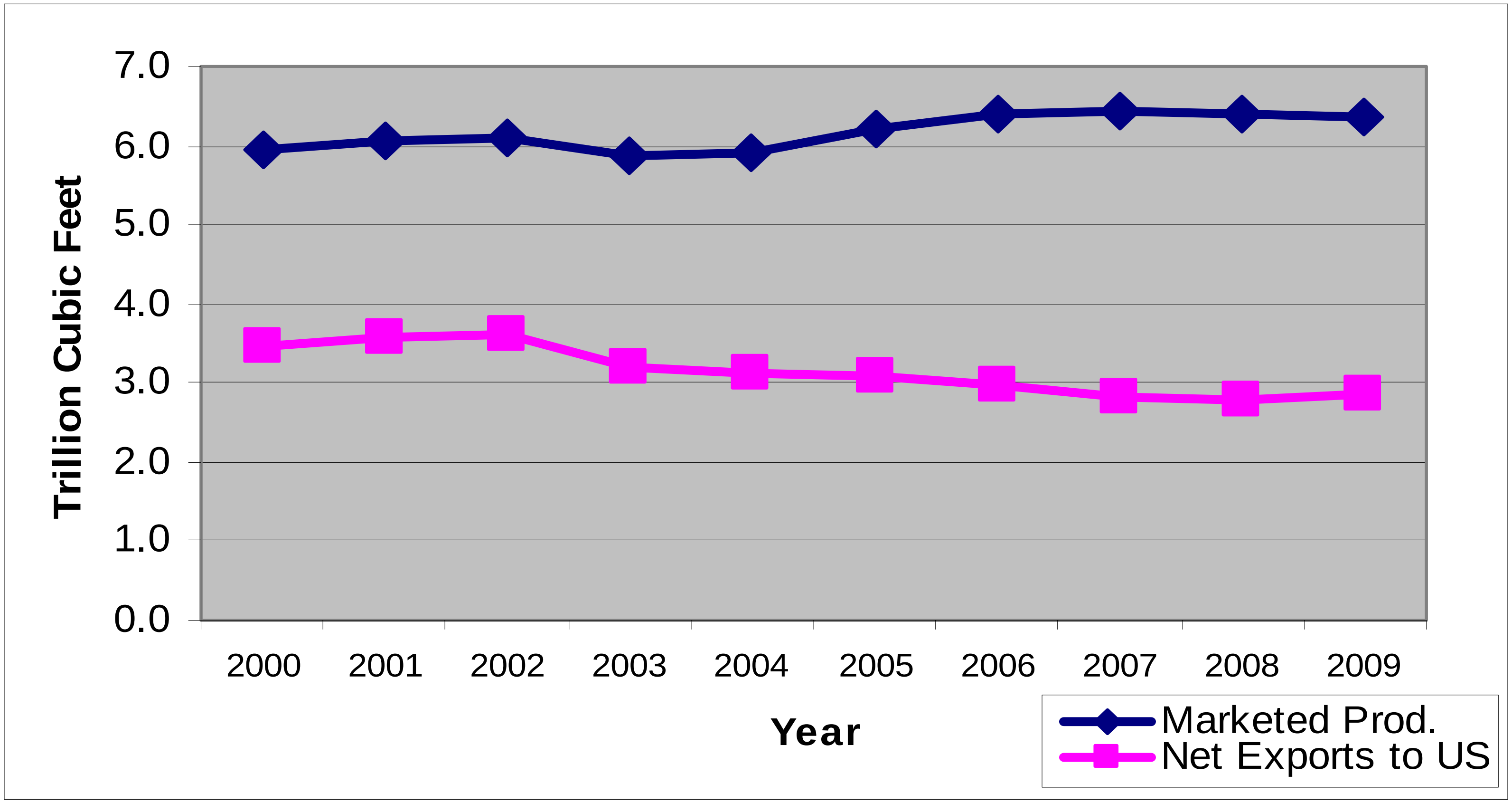
US Lower-48 Undiscovered Gas Resources Subject to Access Restrictions*



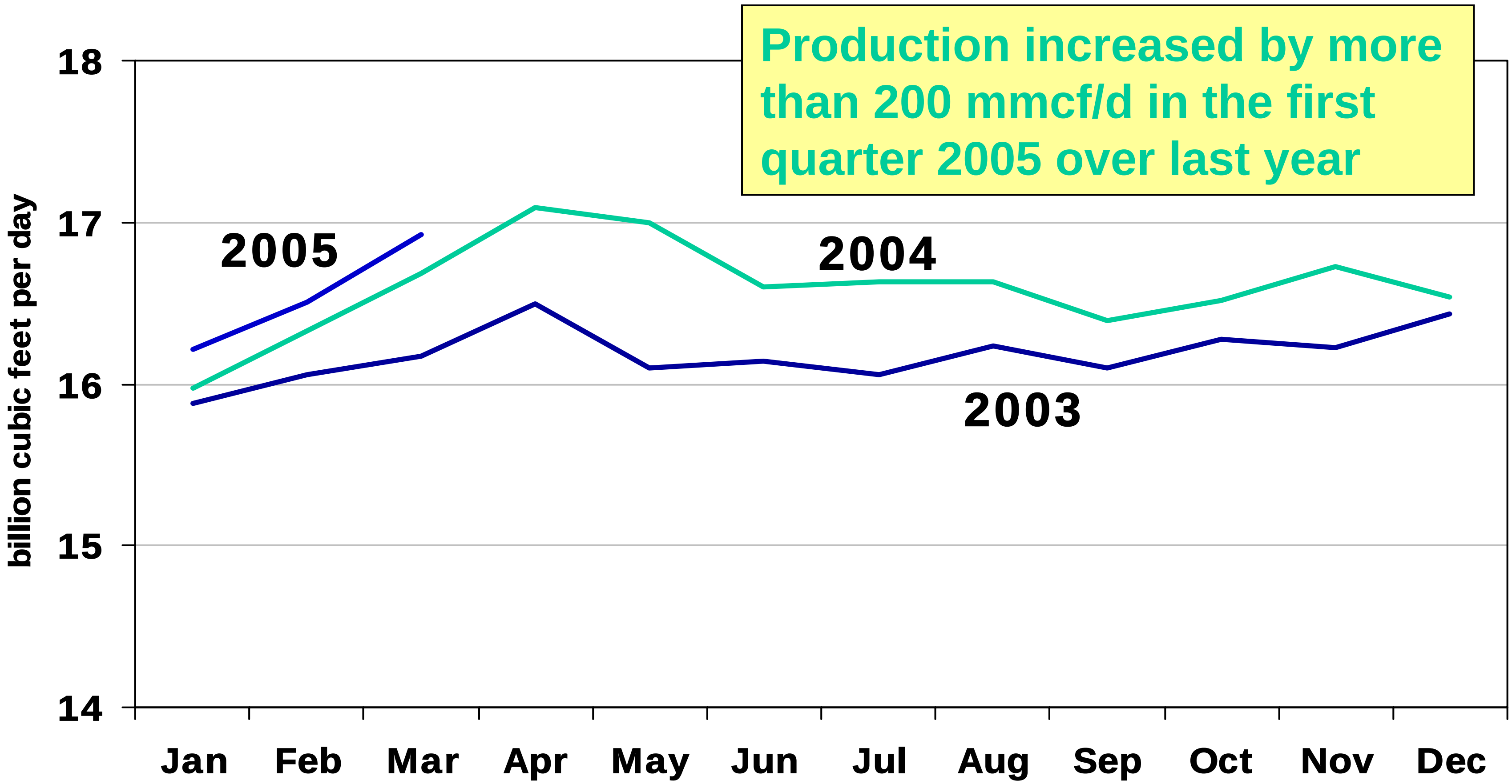
Source: Cambridge Energy Research Associates.
Note: 207 Tcf have restrictions or are off limits:
* 99 Tcf are off limits for exploration and development.
** An additional 108 Tcf of the Rockies gas resources are available with restrictions.

May 2003
10530-43

Canadian Marketed Production And Net Exports to US 2000-2009

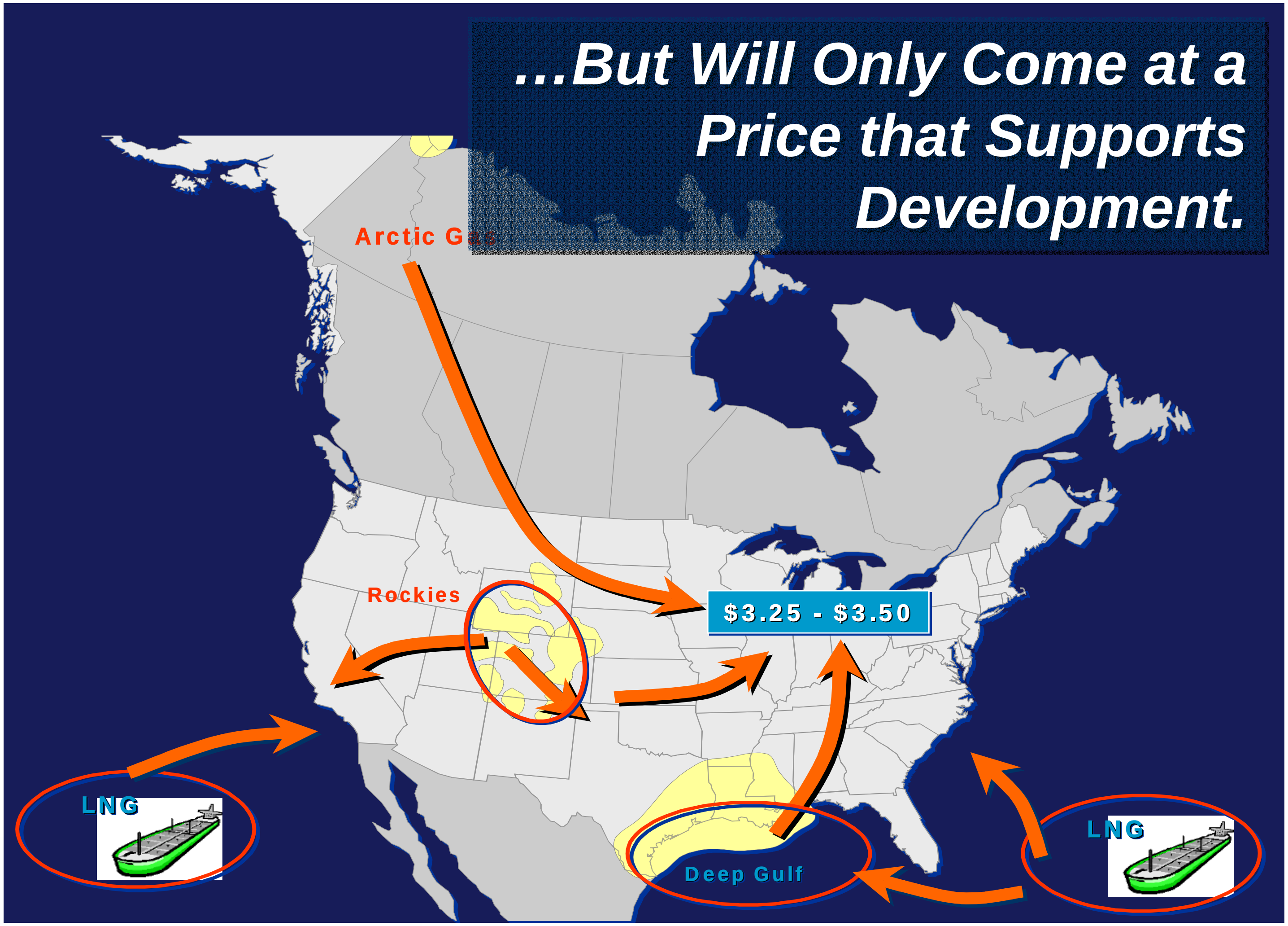


Western Canada Natural Gas Production



Source: FirstEnergy Capital

New Supply Must Come From New Areas…



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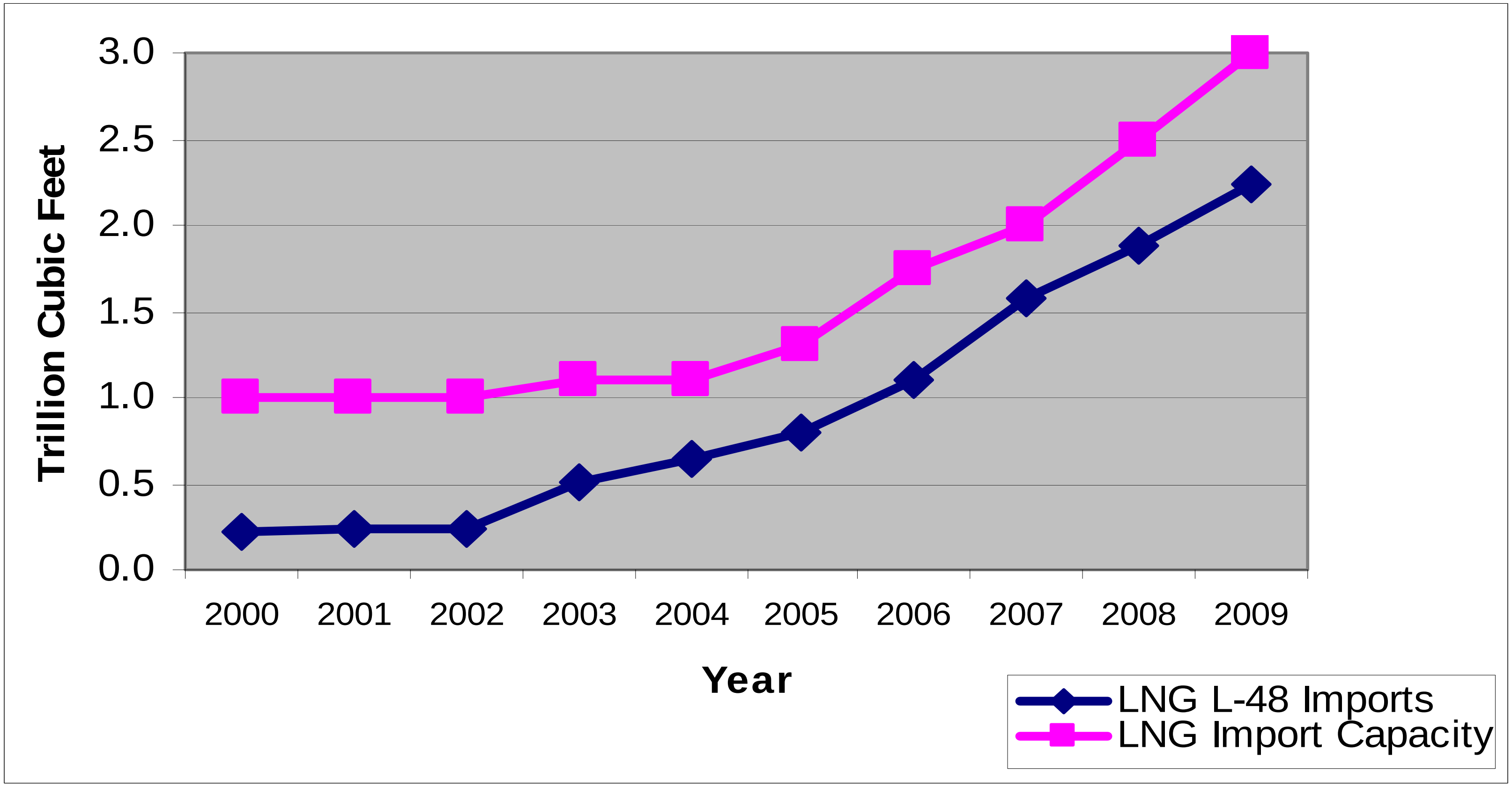
Source: CMS Panhandle Companies

LNG Imports and Import Capacity 2000-2009



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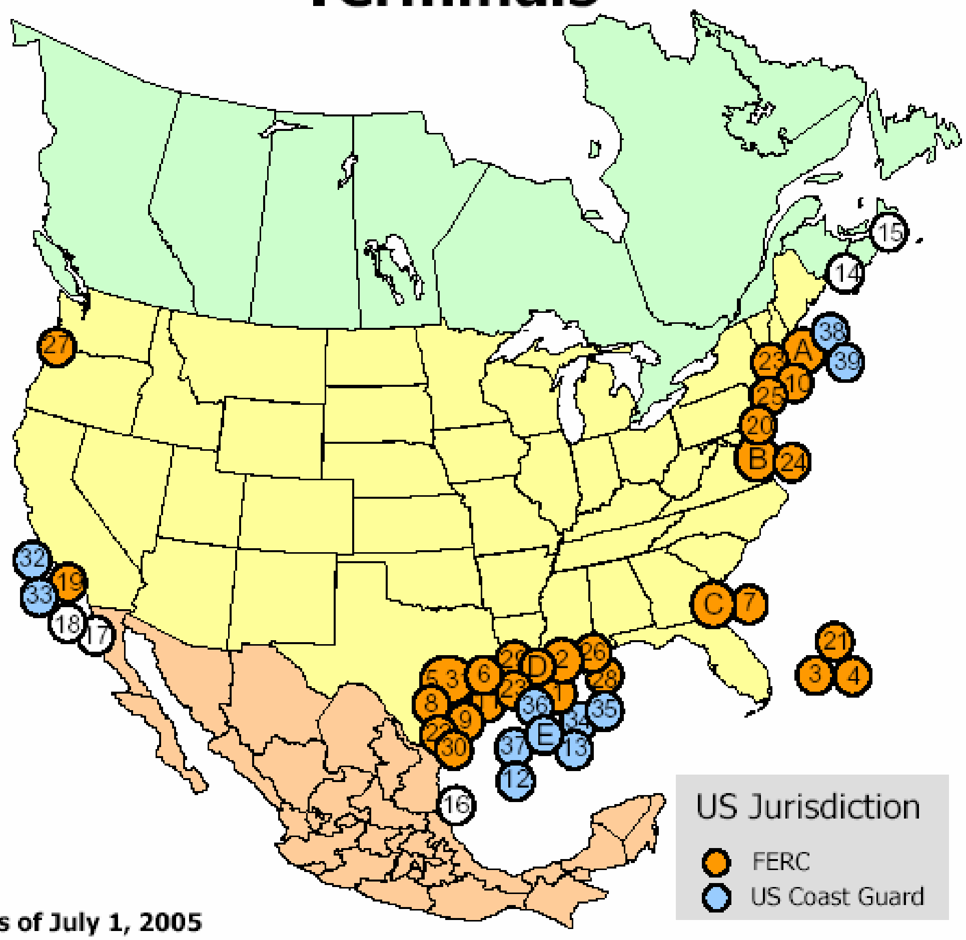
FERC

Existing and Proposed North American LNG Terminals



As of July 1, 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)

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 Bcf/d (Bear Head LNG - Anadarko)

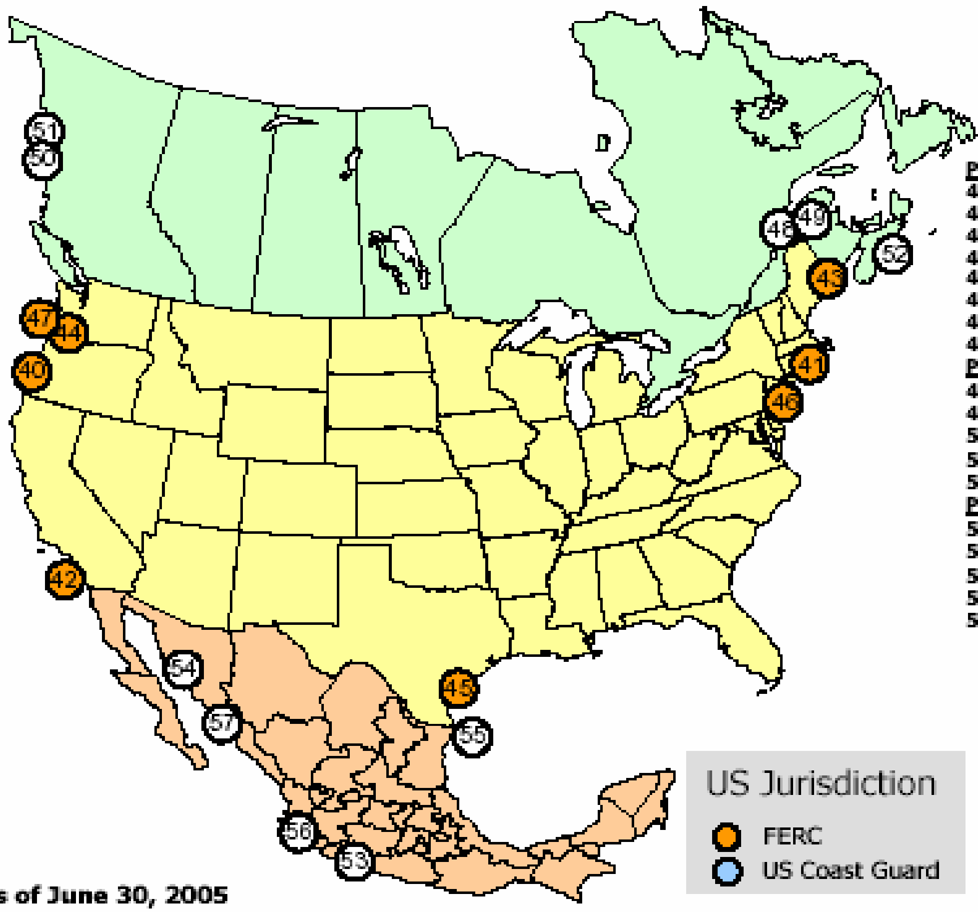
MEXICAN APPROVED TERMINALS
16. Altamira, Tamulipas : 0.7 Bcfd, (Shell/Total/Mitsui)
17. Baja California, MX : 1.0 Bcfd, (Sempra & Shell)
18. Baja California - Offshore : 1.4 Bcfd, (Chevron Texaco)

PROPOSED TO FERC
19. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solution
20. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
21. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/FPL)
22. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)
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)

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

Office of Energy Projects

Potential North American LNG Terminals



POTENTIAL U.S. SITES IDENTIFIED BY PROJECT SPONSORS

40. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
41. Somerset, MA: 0.65 Bcfd (Somerset LNG)
42. California - Offshore: 0.75 Bcfd, (Chevron Texaco)
43. Pleasant Point, ME : 0.5 Bcf/d (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)

POTENTIAL CANADIAN SITES IDENTIFIED BY PROJECT SPONSORS

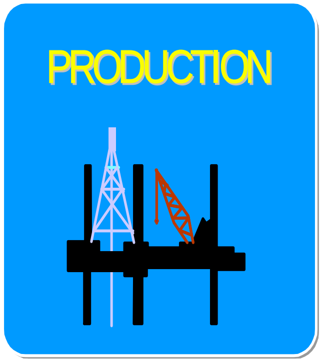
48. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
49. Rivière-du- Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
50. Kitimat, BC: 0.61 Bcfd (Galveston LNG)
51. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
52. Goldboro, NS 1.0 Bcfd (Keltic Petrochemicals)

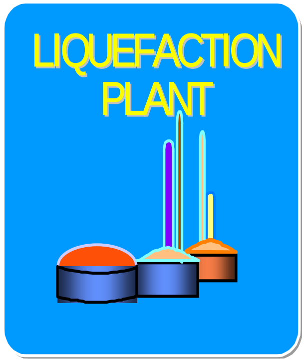
POTENTIAL MEXICAN SITES IDENTIFIED BY PROJECT SPONSORS

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

As of June 30, 2005

IS LNG ECONOMIC?





Gas Producer
$0.5-1.0 billion
$0.50-1.00 / MMBtu

Liquefaction
$0.8-1.0 billion
$0.80-1.00 / MMBtu

Shipping*
$0.6-1.2+ billion
$0.50-1.45 / MMBtu

Receiving Terminal
$3-400 million
$0.25-0.40 / MMBtu

Cost out of Plant: $2.50-3.50/ MMBtu

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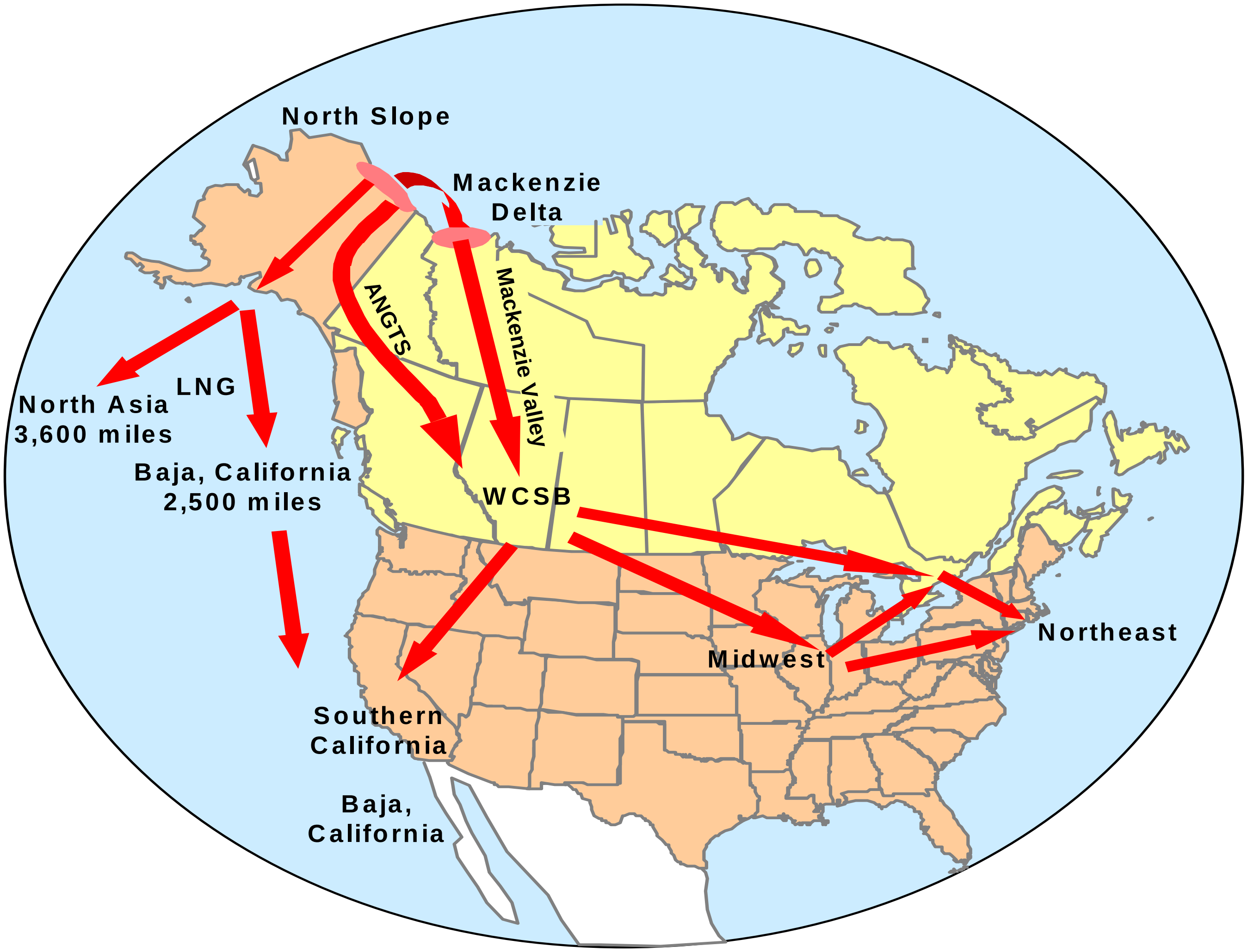
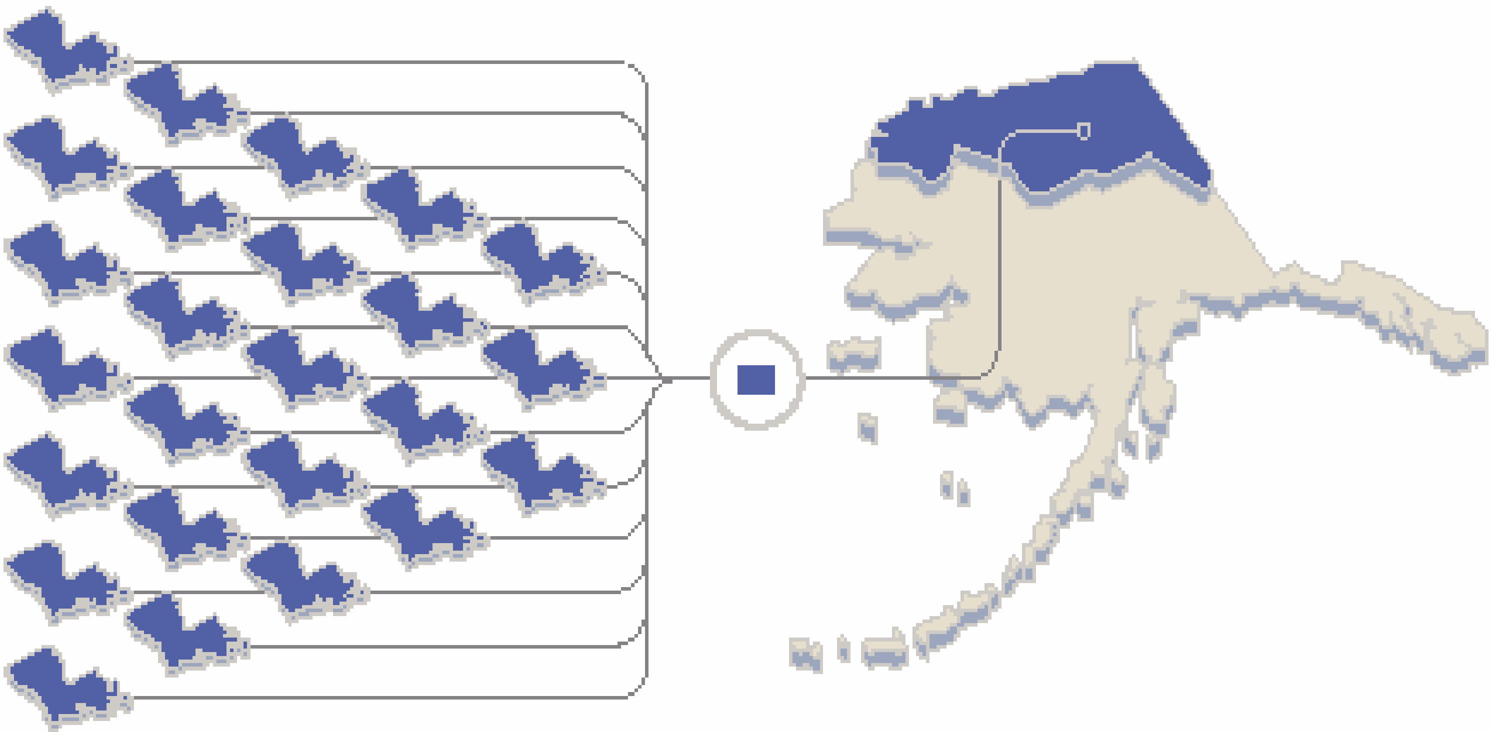
Source: Freeport LNG

Depends upon the shipping distance.

Northern Gas Market Options



Alaska



25 years of production from onshore Louisiana is equivalent to proved gas reserves on the North Slope of Alaska alone.

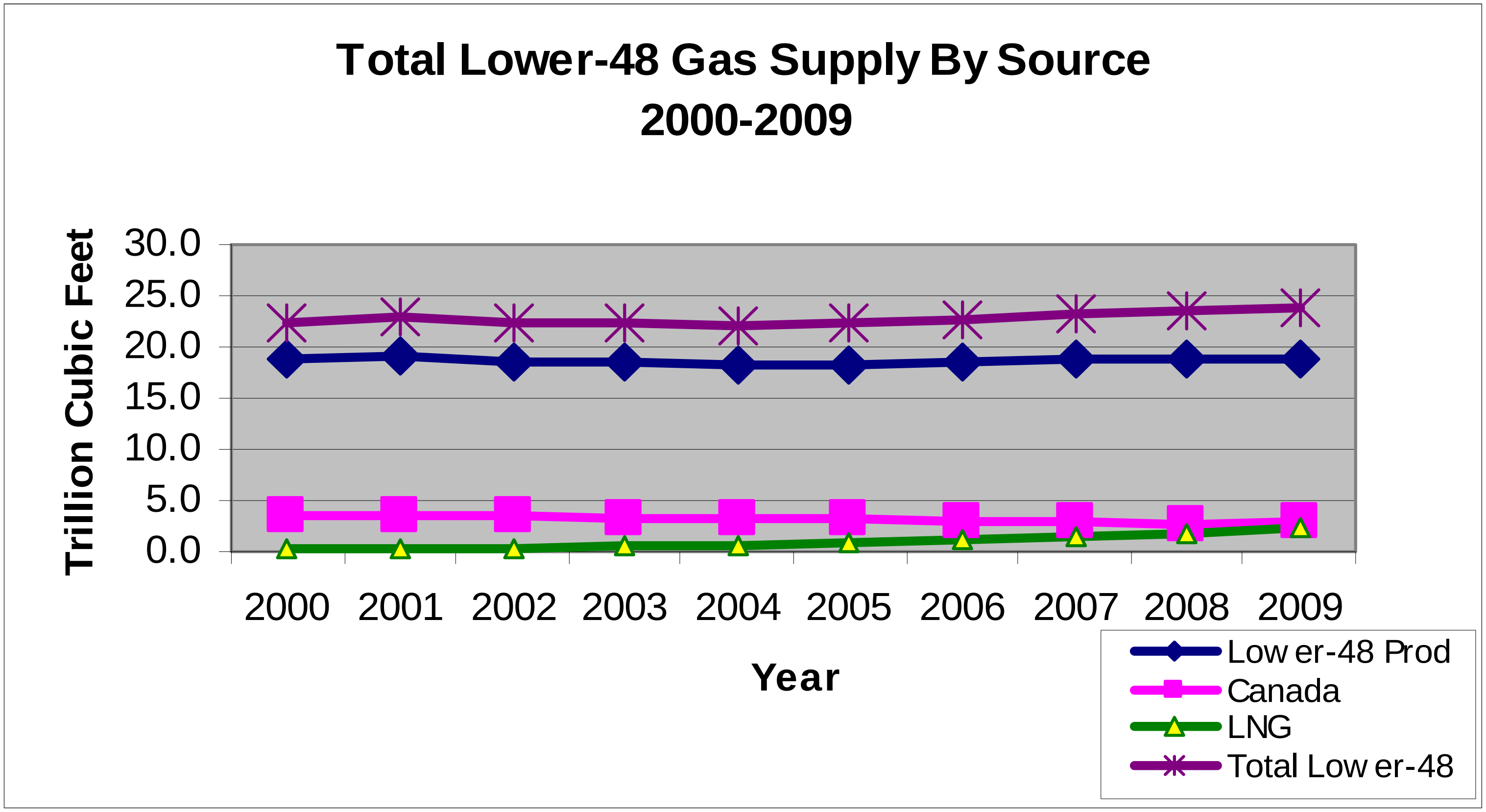
Regarding U.S. Gas Supply and the role of LNG and/or Alaska......

There is no Plan B!

Marie Fagan (CERA)

American Gas Association

Total Lower-48 Gas Supply By Source 2000-2009



Sources: Lippman Consulting, Inc., AGA, EEA, CAPP

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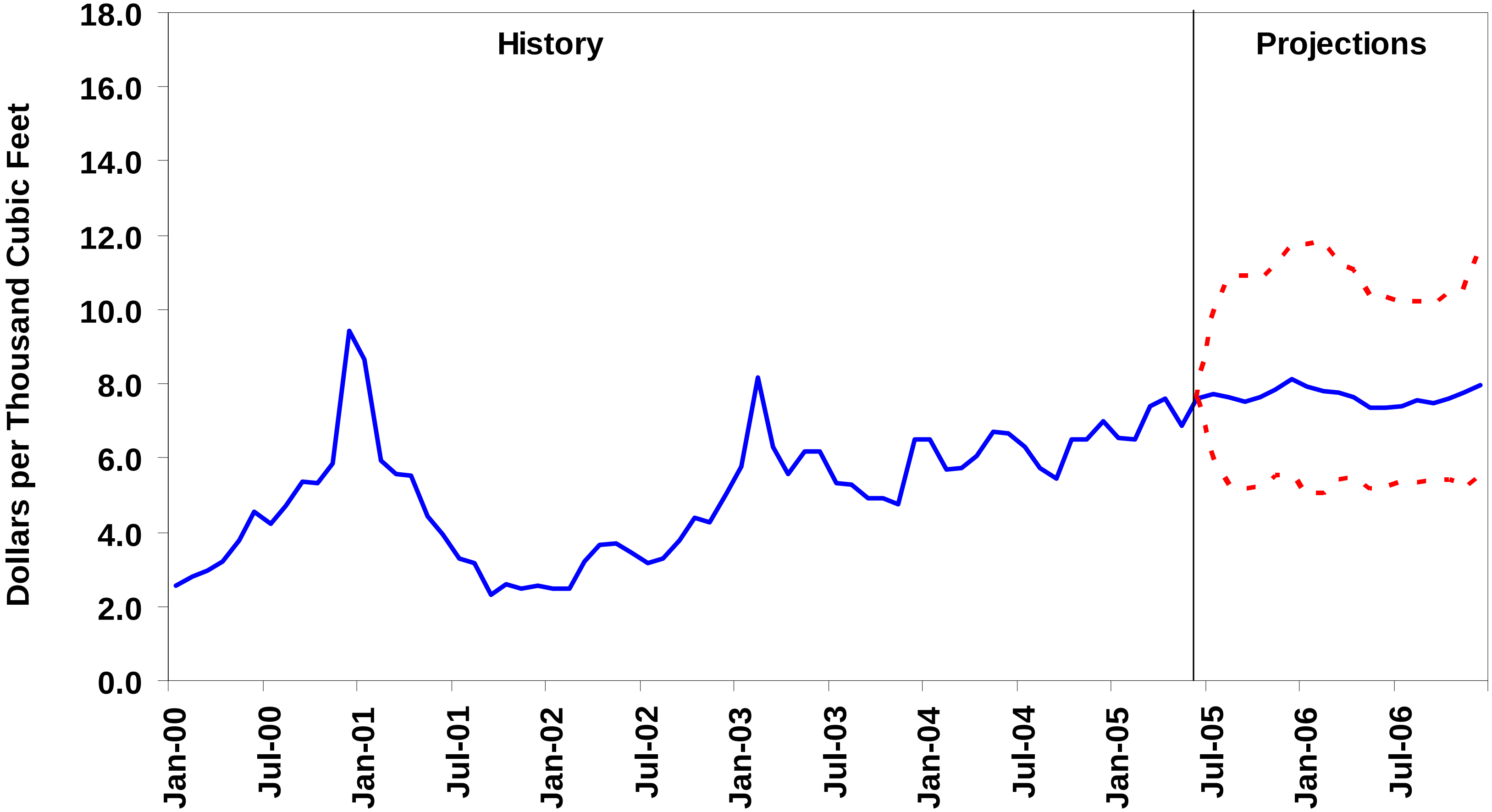
U.S. Natural Gas Spot Prices
(Base Case and 95% Confidence Interval*)

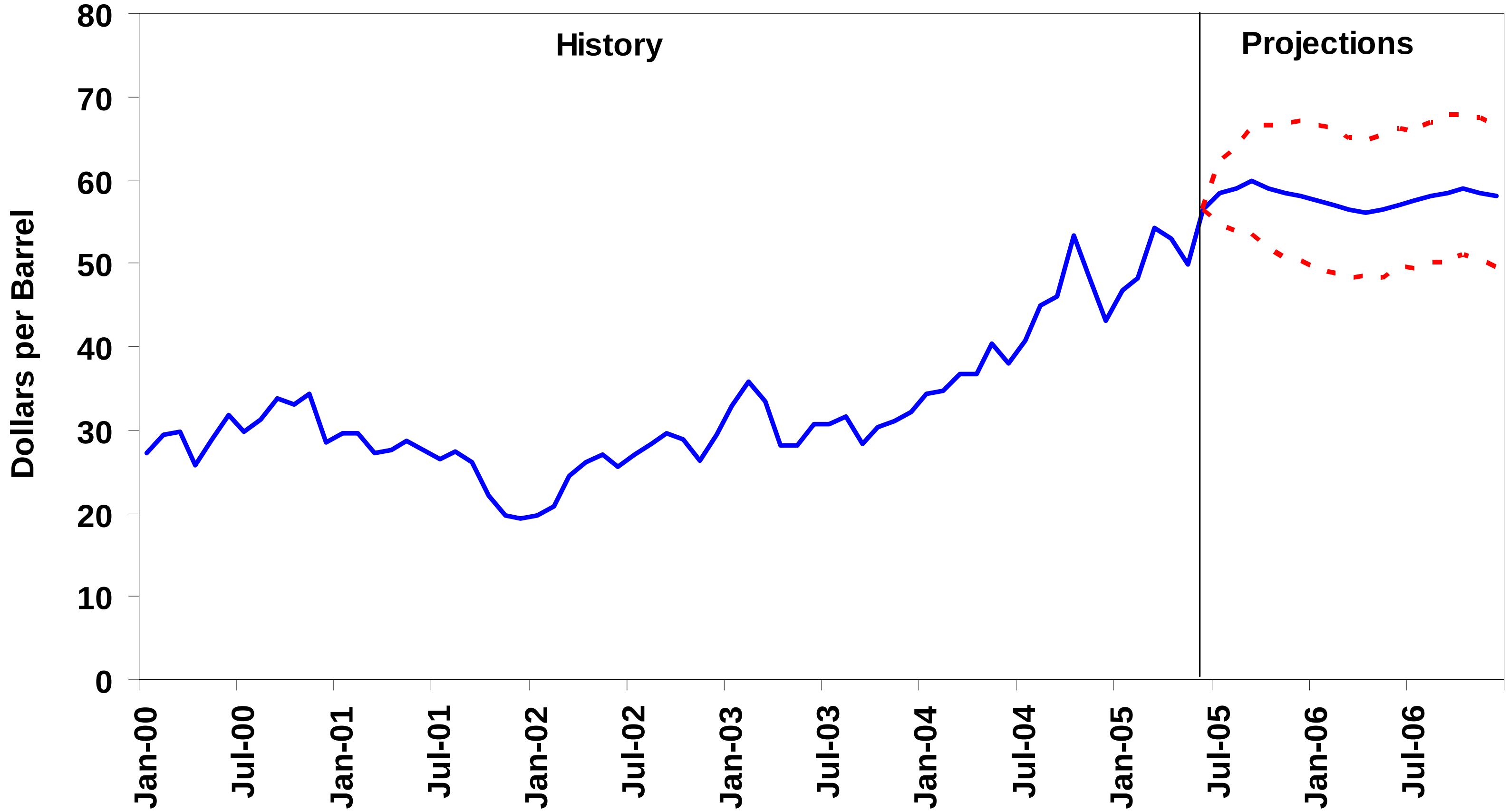


**The confidence intervals show +/- 2 standard errors based on the properties of the model. The ranges do not include the effects of major supply disruptions.*

Short-Term Energy Outlook, July 2005.

www.eia.doe.gov

West Texas Intermediate Crude Oil Price
(Base Case and 95% Confidence Interval*)



**The confidence intervals show +/- 2 standard errors based on the properties of the model. The ranges do not include the effects of major supply disruptions.*

Energy Information Administration, *Short-Term Outlook*, July 2005.

SCENARIO ASSUMPTIONS

	Expected	Expanded	Existing
Drilling Moratoria	Unchanged	Relaxed	Unchanged
Intermountain West	Unchanged	Increased	Unchanged
Alaskan Pipeline	2014	2014	Not Built
LNG in 2020	18 Bcfd	23 Bcfd	5.3 Bcfd
New Gas-Fired Gen.	60 GW	30 GW	60 GW

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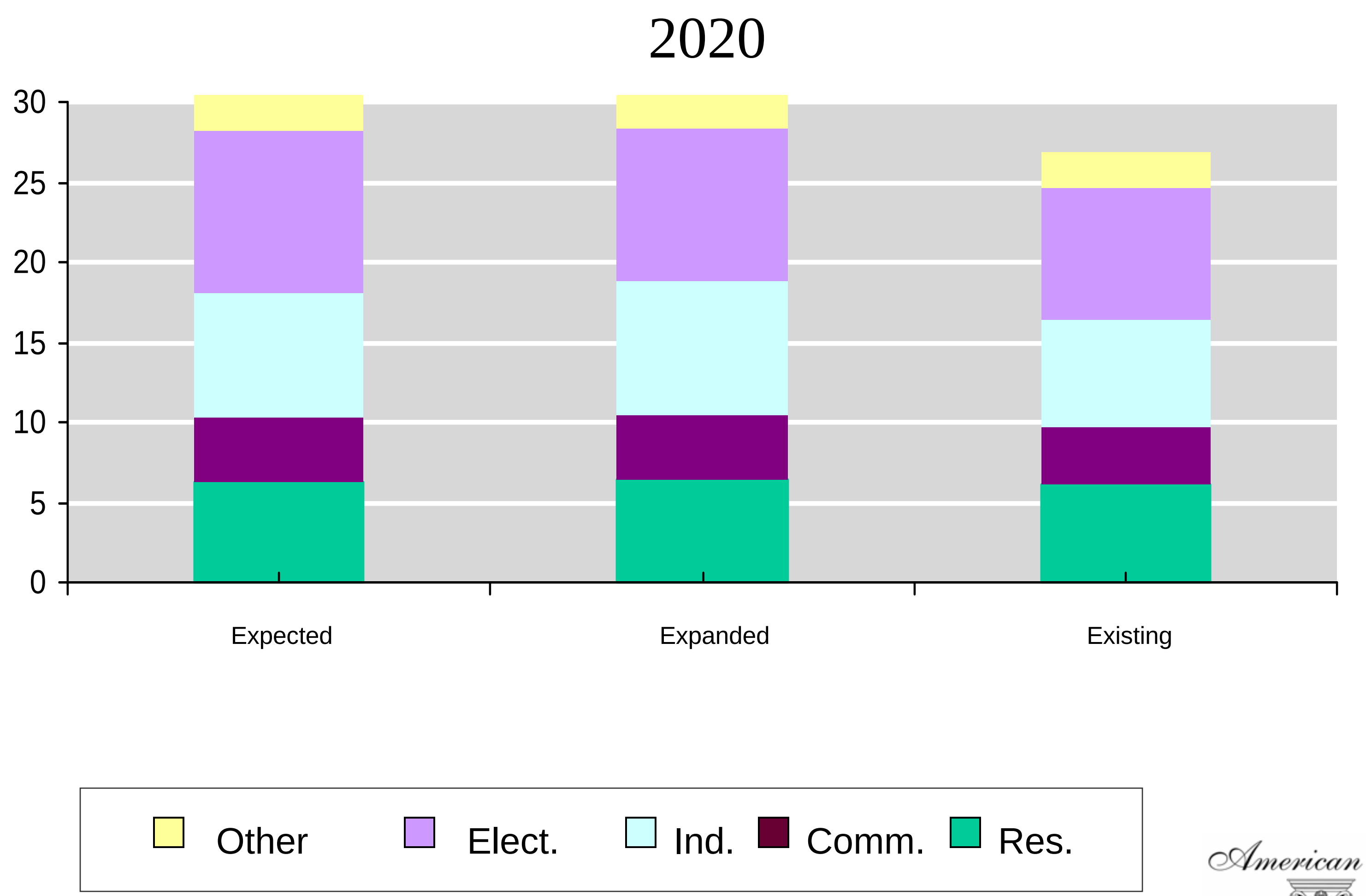
PROJECTED NATURAL GAS CONSUMPTION
QUADS



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COMPARISON OF LONG-TERM SCENARIOS
2003 – 2020

CONSUMPTION (Tbtu)

	Actual 2003	FORECAST - 2020 Expected	Expanded	Existing
Res	5,188	6,326	6,417	6,076
Com	3,287	3,944	4,074	3,610
Ind	7,412	7,739	8,268	6,718
EG [1]	4,230	10,203	9,526	8,226
Pipe [2]	777	993	976	930
L&P [3]	1,247	1,254	1,211	1,336
Total	22,141	30,459	30,472	26,896

[1] Electricity generation.
[2] Pipeline compressor fuel.
[3] Lease and plant fuel.

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COMPARISON OF LONG-TERM SCENARIOS
2003 – 2020

SUPPLY (Tbtu)

	Actual 2003	FORECAST - 2020 Expected	Expanded	Existing
L-48	18,655	18,966	18,325	20,671
Alaska [4]	362	2,724	2,700	406
Canada	3,300	2,326	1,266	3,944
Mexico	-350	-177	-177	-177
LNG	478	6,835	8,569	1,931
Total	22,445	30,674	30,683	26,775

[4] Includes gas consumed in Alaska and the Lower-48, but excudes LNG exports.

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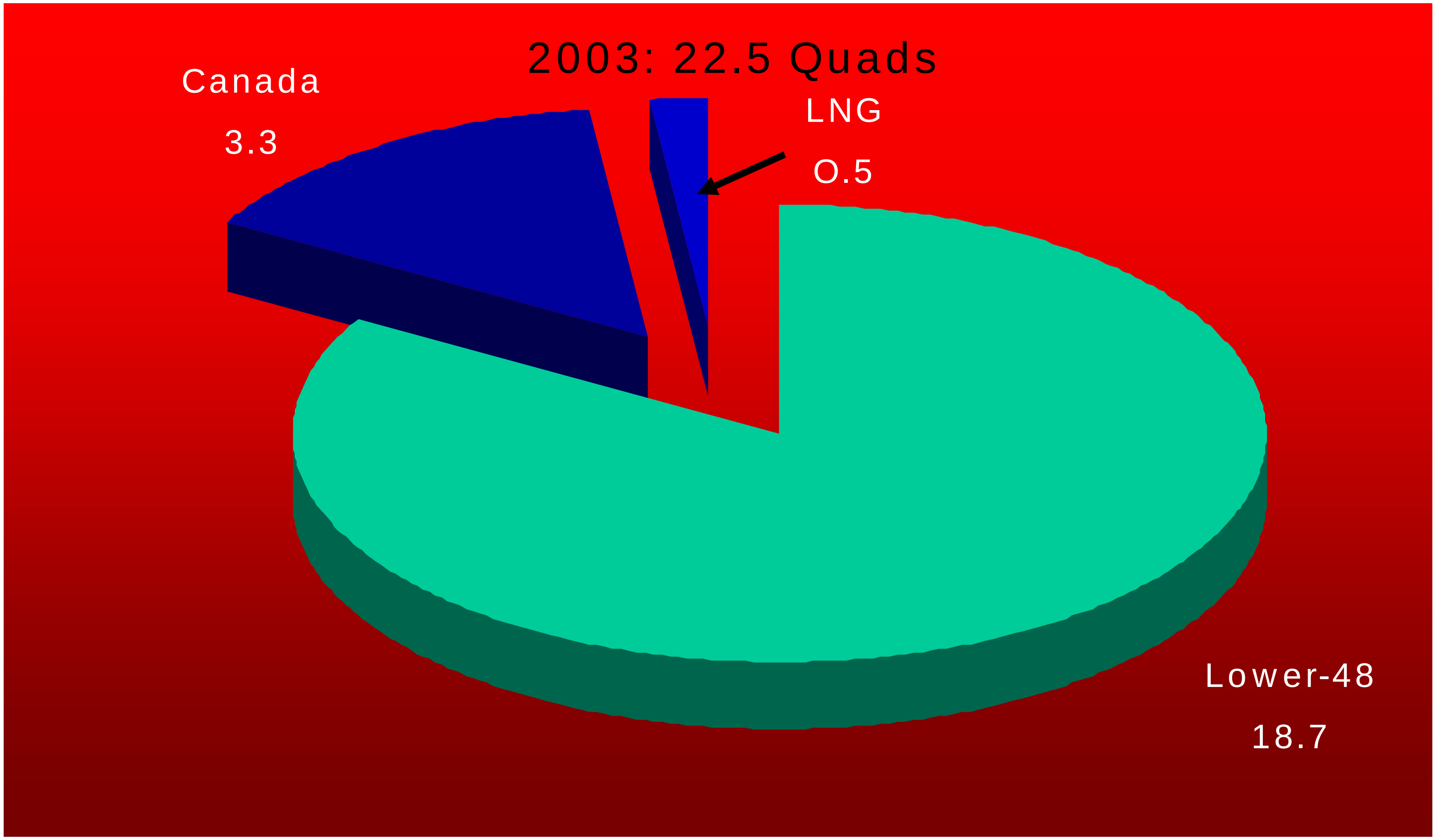
SOURCES OF CURRENT U.S. NATURAL GAS SUPPLY



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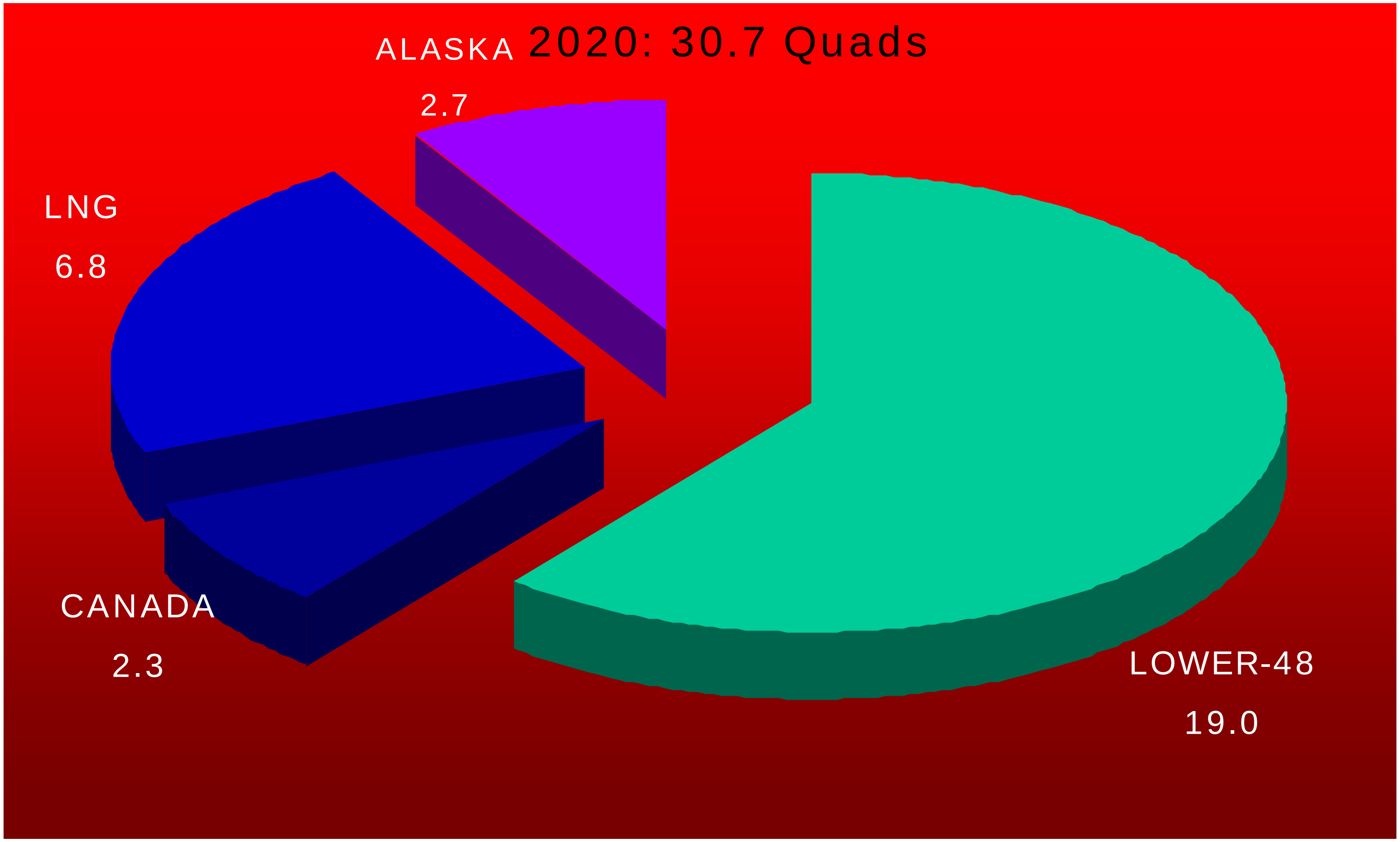
SOURCES OF PROJECTED U.S. NATURAL GAS SUPPLY



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COMPARISON OF LONG-TERM SCENARIOS
2003 – 2020

PRICE **($/MMBtu, Henry Hub)**

	Actual 2003	FORECAST - 2020 Expected	Expanded	Existing
Nominal	$ 5.49	$8.15	$5.47	$13.76
Nom. Avg. (2004-2020)		$6.72	$5.50	$ 9.43

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North American Gas Market

- North American supply/demand balance is and will remain tight.
- Gas consumption grows.
- “New frontier” gas supplies are necessary and take time.
- Gas prices remain relatively high.
- High levels of gas price volatility continue.
- LNG imports become an important player in natural gas pricing.

What Can We Do?

- Promote energy efficiency and conservation
- Encourage the development of storage
- Encourage balance between economic and environmental values
- Diversify sources of power generation
- Encourage Alaskan supply
- Encourage LNG supply

Thank You!

AGA
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