

*June 23, 2006  
Concord, NH*



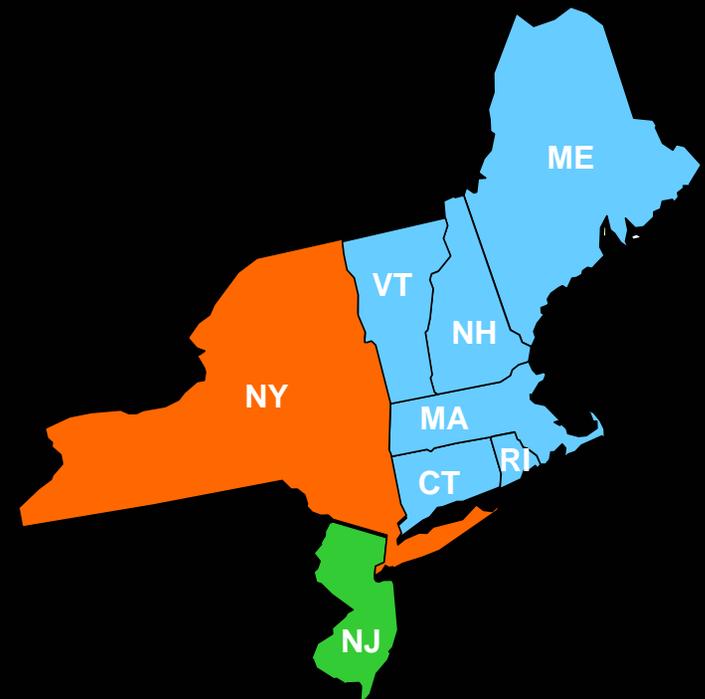
# **New England's Natural Gas Market**

*New Hampshire Energy Planning  
Advisory Board  
Stakeholder Forum*

Tom Kiley, President & CEO  
Northeast Gas Association

# NGA Members

- ◆ Non-profit trade association
- ◆ Local gas utilities (LDCs) serving New England, New York, and part of New Jersey
- ◆ Several interstate pipeline companies
- ◆ LNG importer (Distrigas) and LNG trucking companies
- ◆ Over 250 “associate member” companies, from industry suppliers and contractors to electric grid operators
- ◆ [www.northeastgas.org](http://www.northeastgas.org)



# Topics

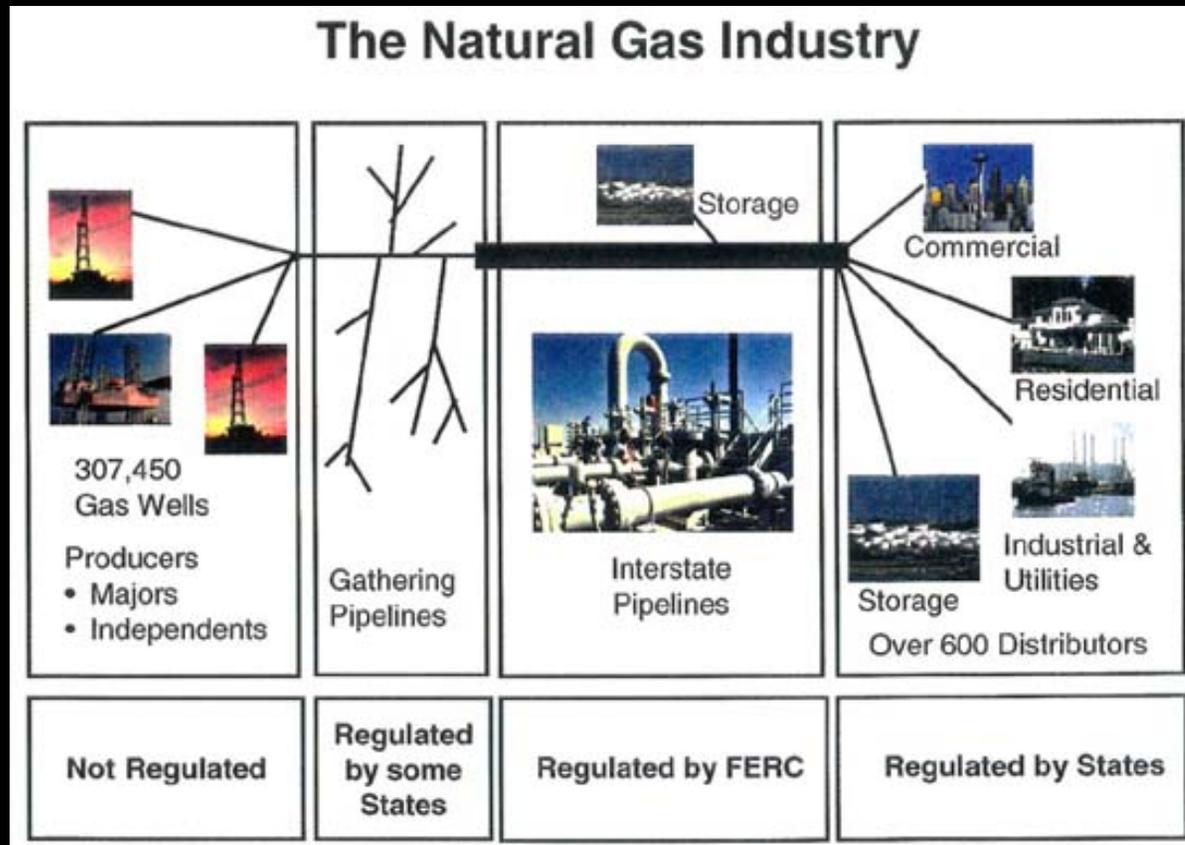
- ◆ Overview of national and regional gas systems
- ◆ National and regional projections
- ◆ Supply projects for region
- ◆ Efficiency
- ◆ Recommendations

# Recommendations

- ◆ New England needs to continue to diversify its sources of natural gas supplies.
- ◆ New England needs to continue to increase its natural gas supply capacity and add new infrastructure – pipeline and LNG.
- ◆ New England needs to continue to invest in natural gas efficiency programs.
- ◆ The electric market needs to provide sufficient incentives to its gas-fired power generators to ensure supply security; gas is likely to remain a key part of future electric generation and the connection between contracts and infrastructure needs to be addressed. Generators need to step up and pay for pipeline delivery reliability!

# National and Regional Systems

# Main Industry Sectors



# Supply Systems for the Northeast

Western  
Canada  
Production  
Area

Northeast  
GAS  
ASSOCIATION

- Columbia (NiSource)
- Dominion
- Duke Energy
- El Paso
- Iroquois
- National Fuel
- PNGTS
- TransCanada
- Williams

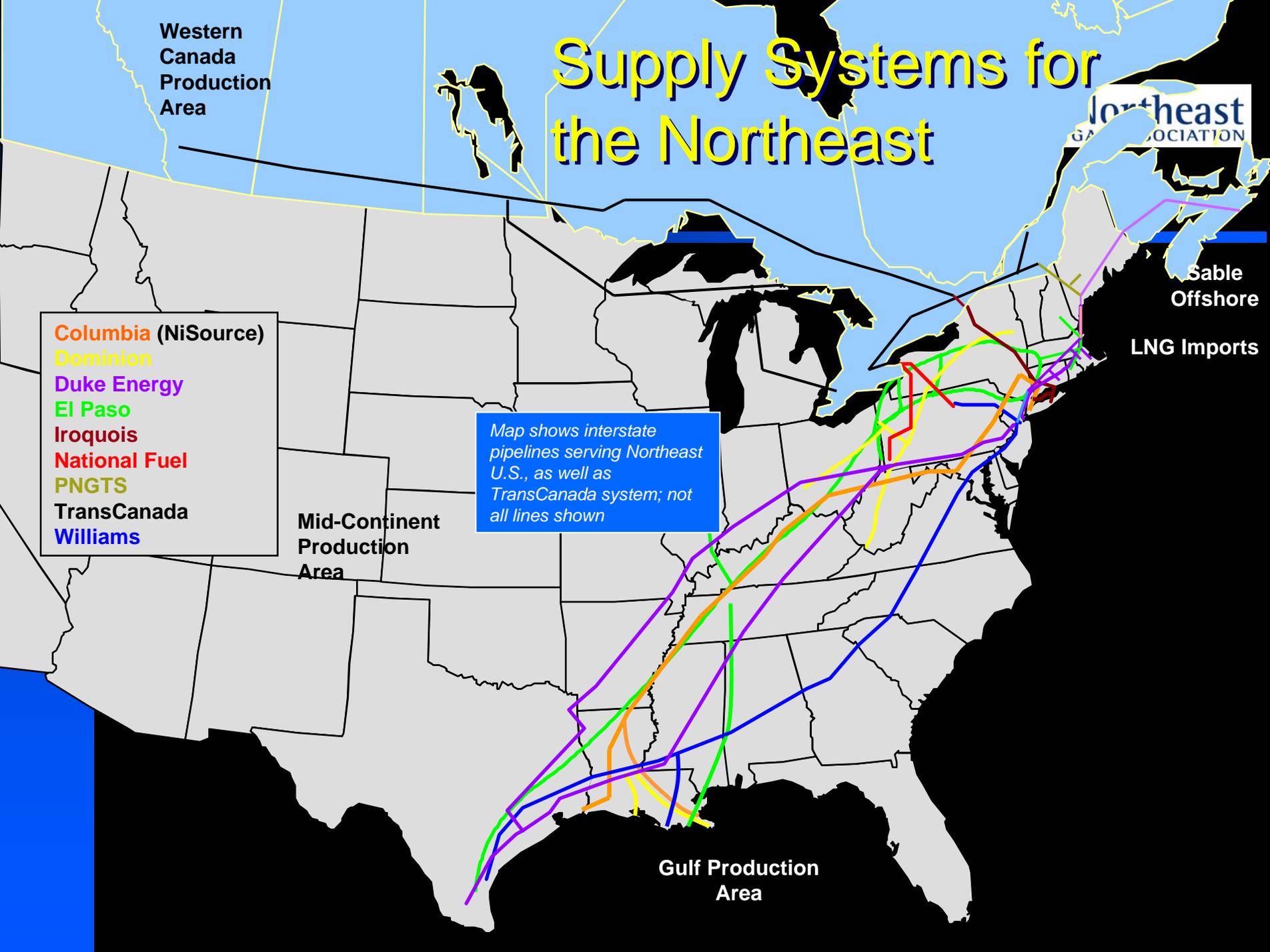
Map shows interstate  
pipelines serving Northeast  
U.S., as well as  
TransCanada system; not  
all lines shown

Mid-Continent  
Production  
Area

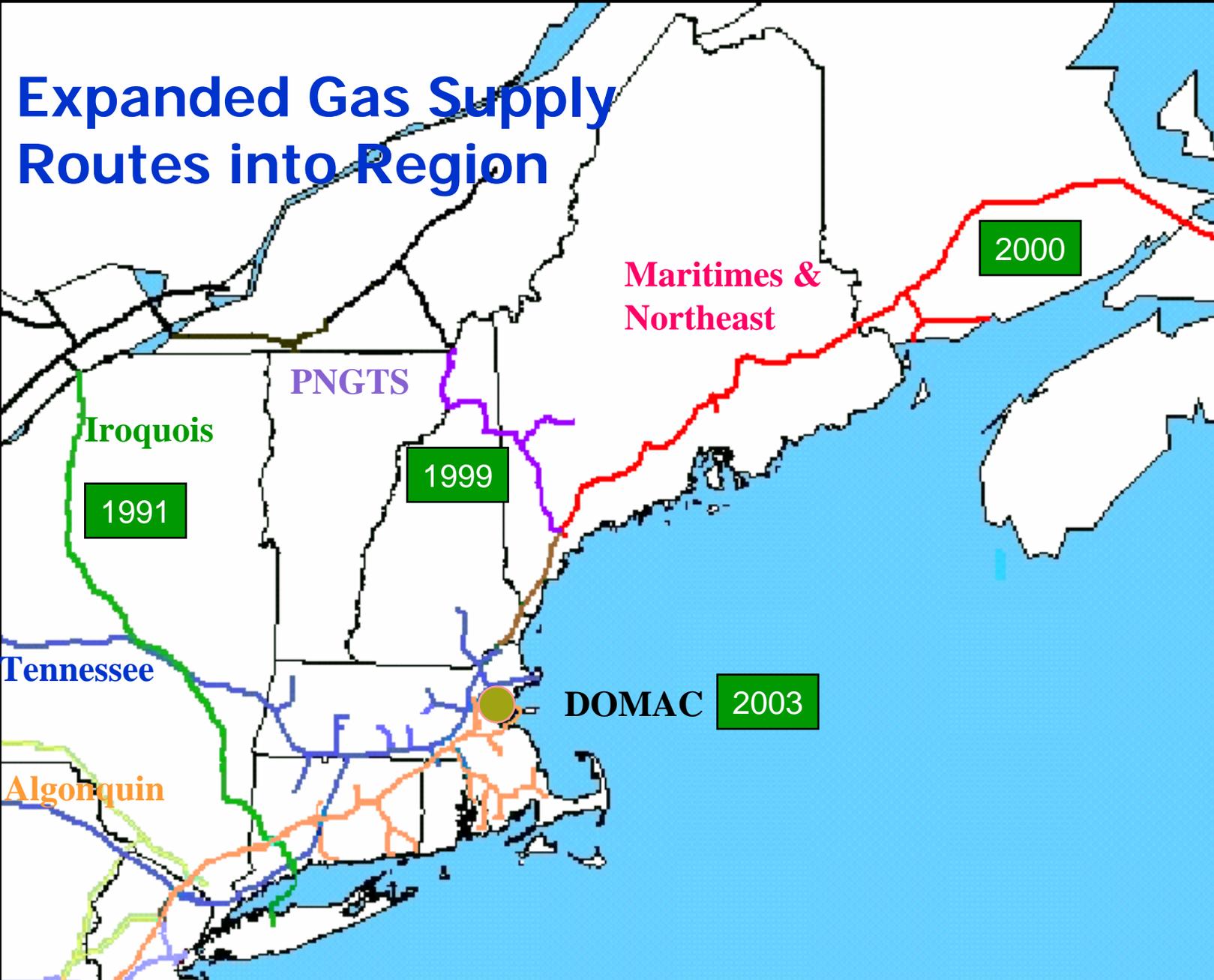
Gulf Production  
Area

Sable  
Offshore

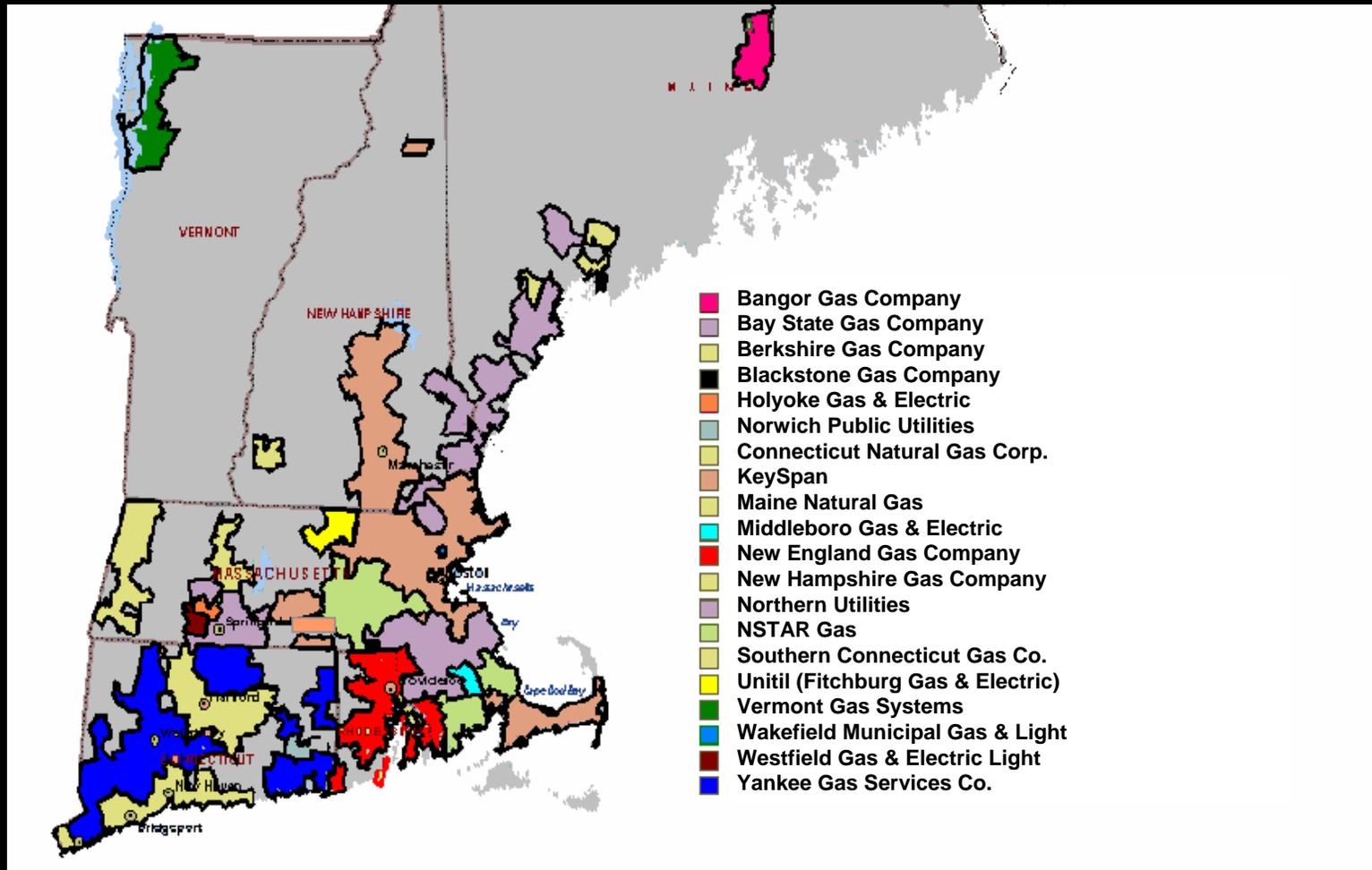
LNG Imports



# Expanded Gas Supply Routes into Region



# New England Gas Utility Companies and Service Areas



- Bangor Gas Company
- Bay State Gas Company
- Berkshire Gas Company
- Blackstone Gas Company
- Holyoke Gas & Electric
- Norwich Public Utilities
- Connecticut Natural Gas Corp.
- KeySpan
- Maine Natural Gas
- Middleboro Gas & Electric
- New England Gas Company
- New Hampshire Gas Company
- Northern Utilities
- NSTAR Gas
- Southern Connecticut Gas Co.
- Unitil (Fitchburg Gas & Electric)
- Vermont Gas Systems
- Wakefield Municipal Gas & Light
- Westfield Gas & Electric Light
- Yankee Gas Services Co.

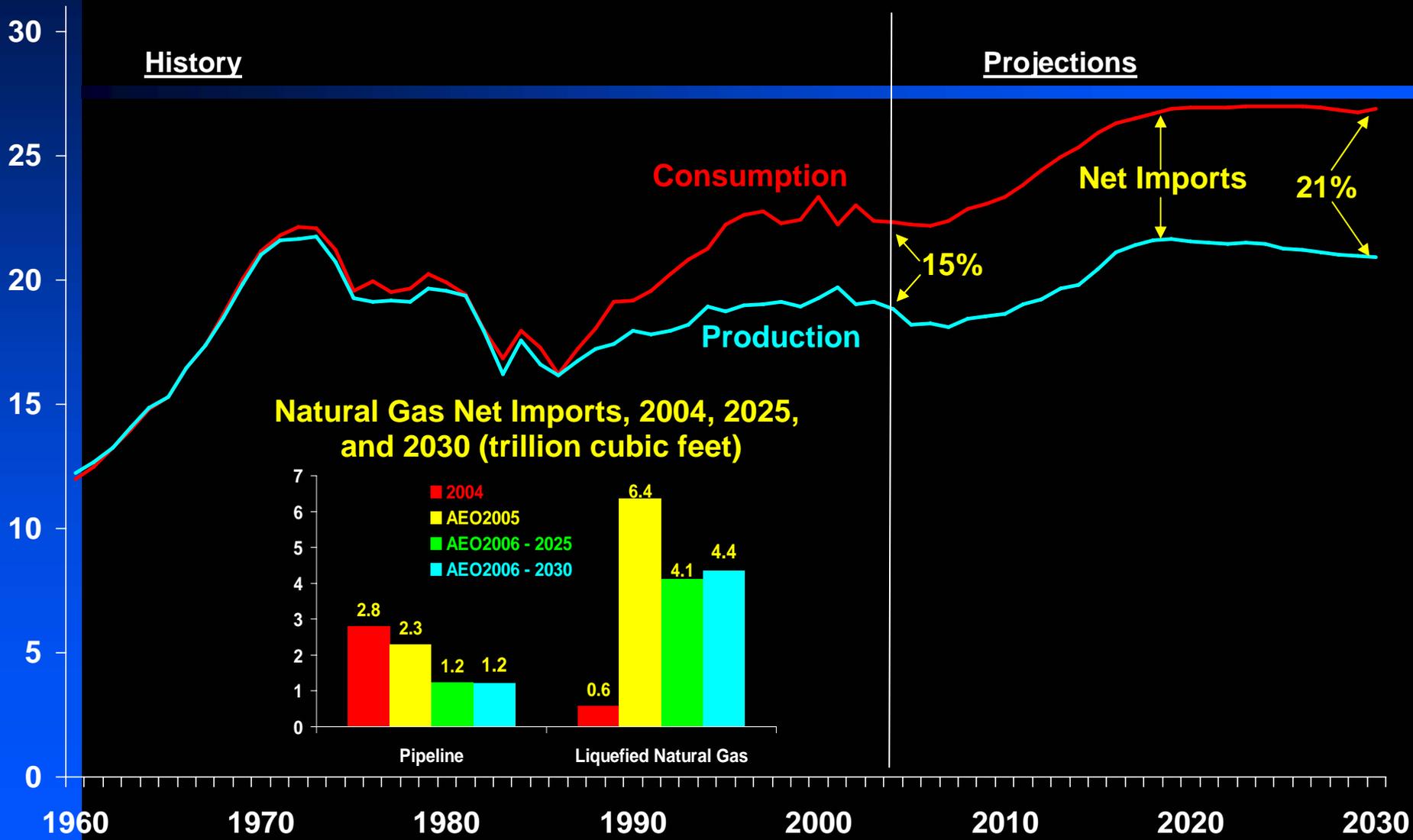
# New England Gas Market Snapshot: 1980 to 2005



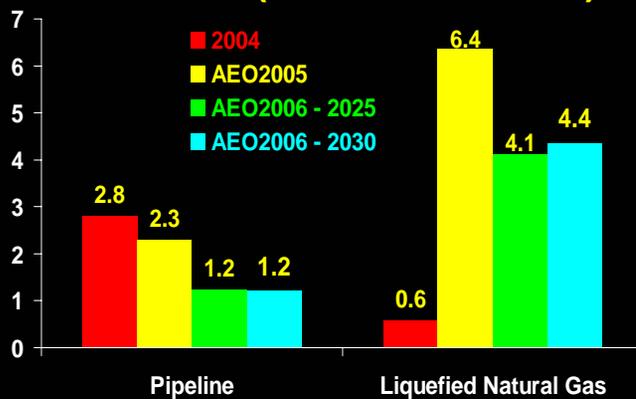
	1980	2005
<i>Gas Customers</i>	<b>1.7 million</b>	<b>2.4 million</b>
<i>Annual Consumption (Billion cubic feet)</i>	<b>295</b>	<b>750</b>
<i>Interstate pipelines</i>	<b>2</b>	<b>5</b>
<i>Pipeline capacity (Bcf/day)</i>	<b>1.5</b>	<b>3.6</b>
<i>LNG imports (Bcf/yr)</i>	<b>30</b>	<b>172</b>
<i>Gas as %, home heating fuels</i>	<b>24%</b>	<b>34%</b>
<i>Gas as %, electric power generation</i>	<b>&lt;1%</b>	<b>40%</b>

# Projections

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

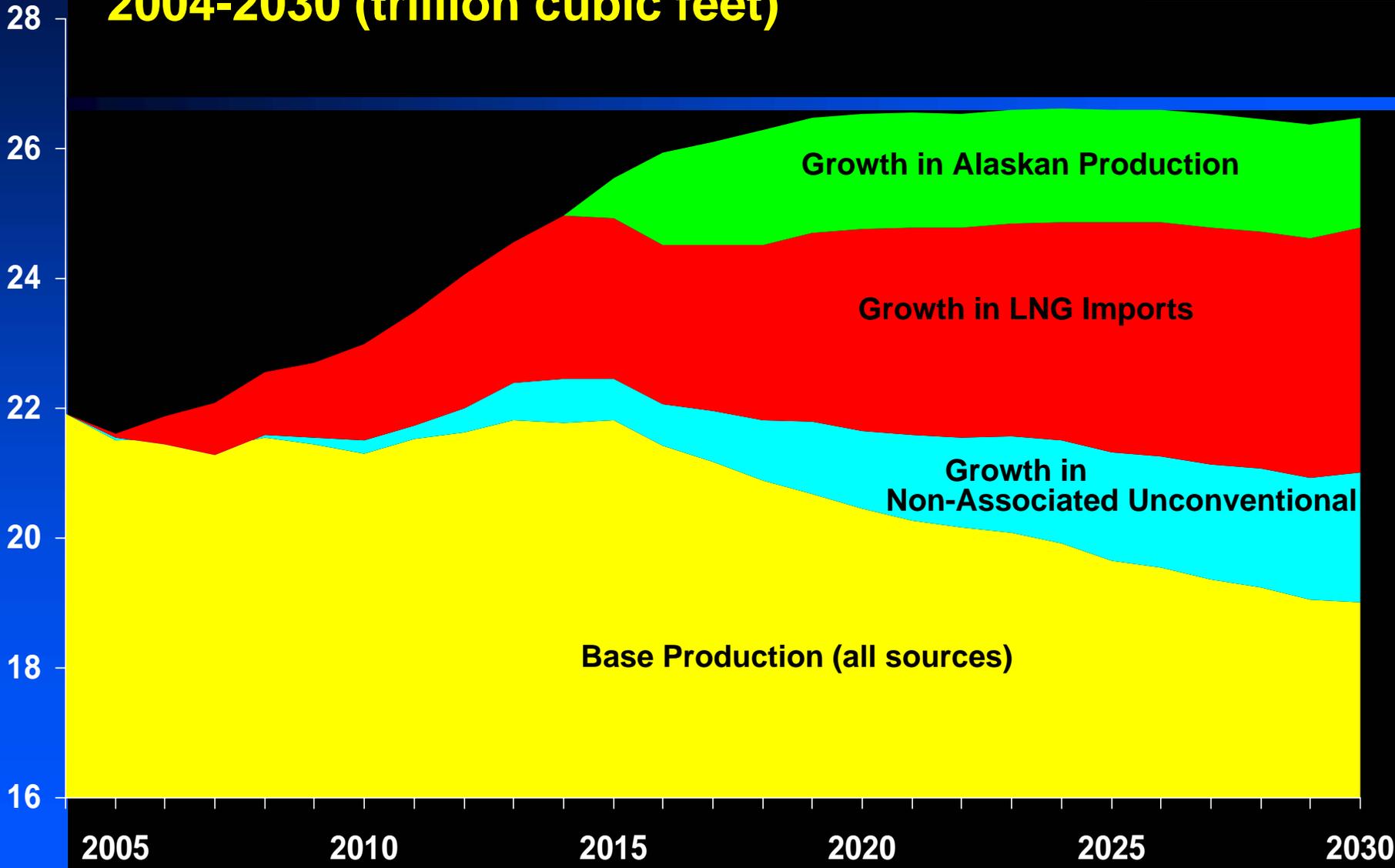


**Natural Gas Net Imports, 2004, 2025, and 2030 (trillion cubic feet)**

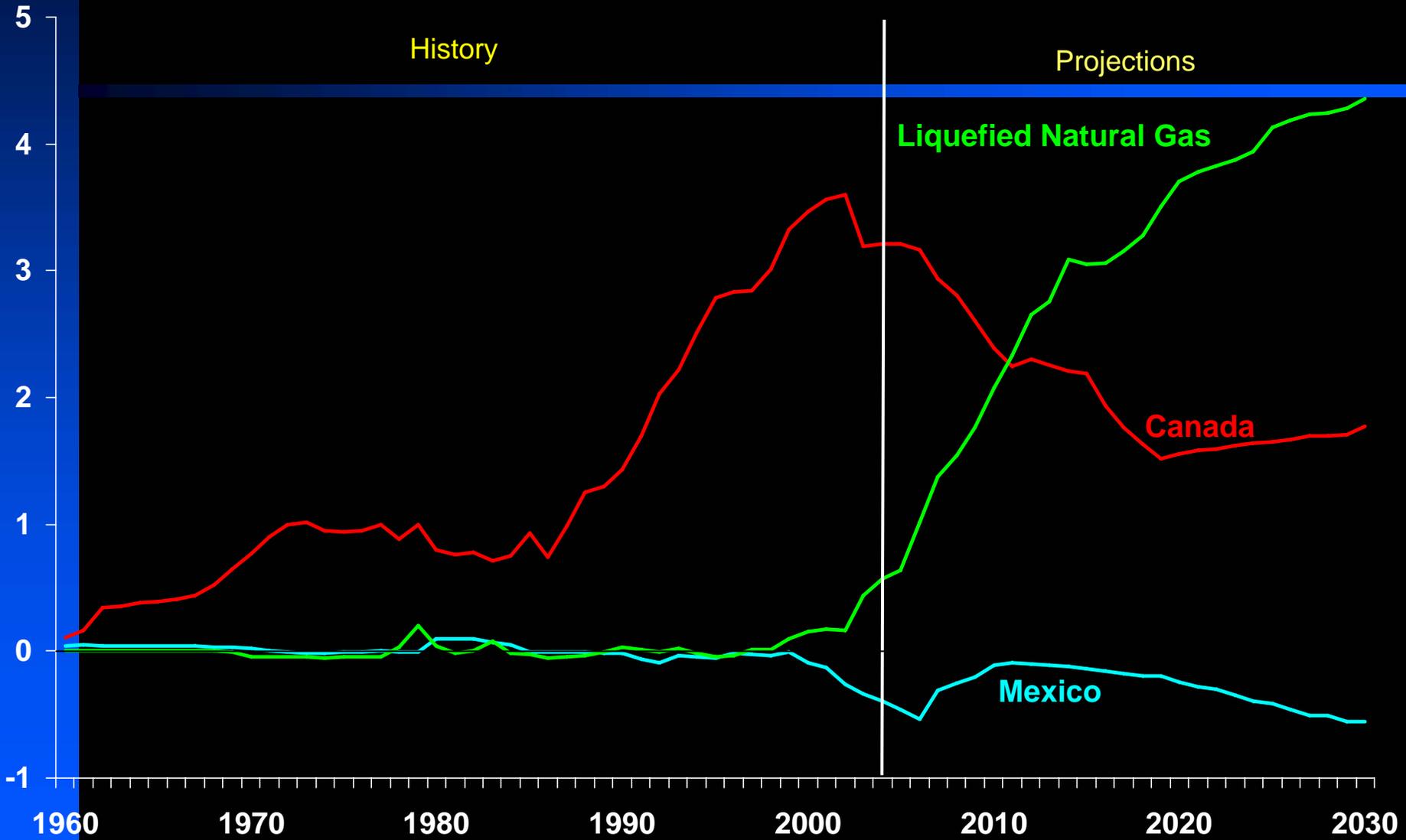


Source: US Annual Energy Outlook 2005 and 2006

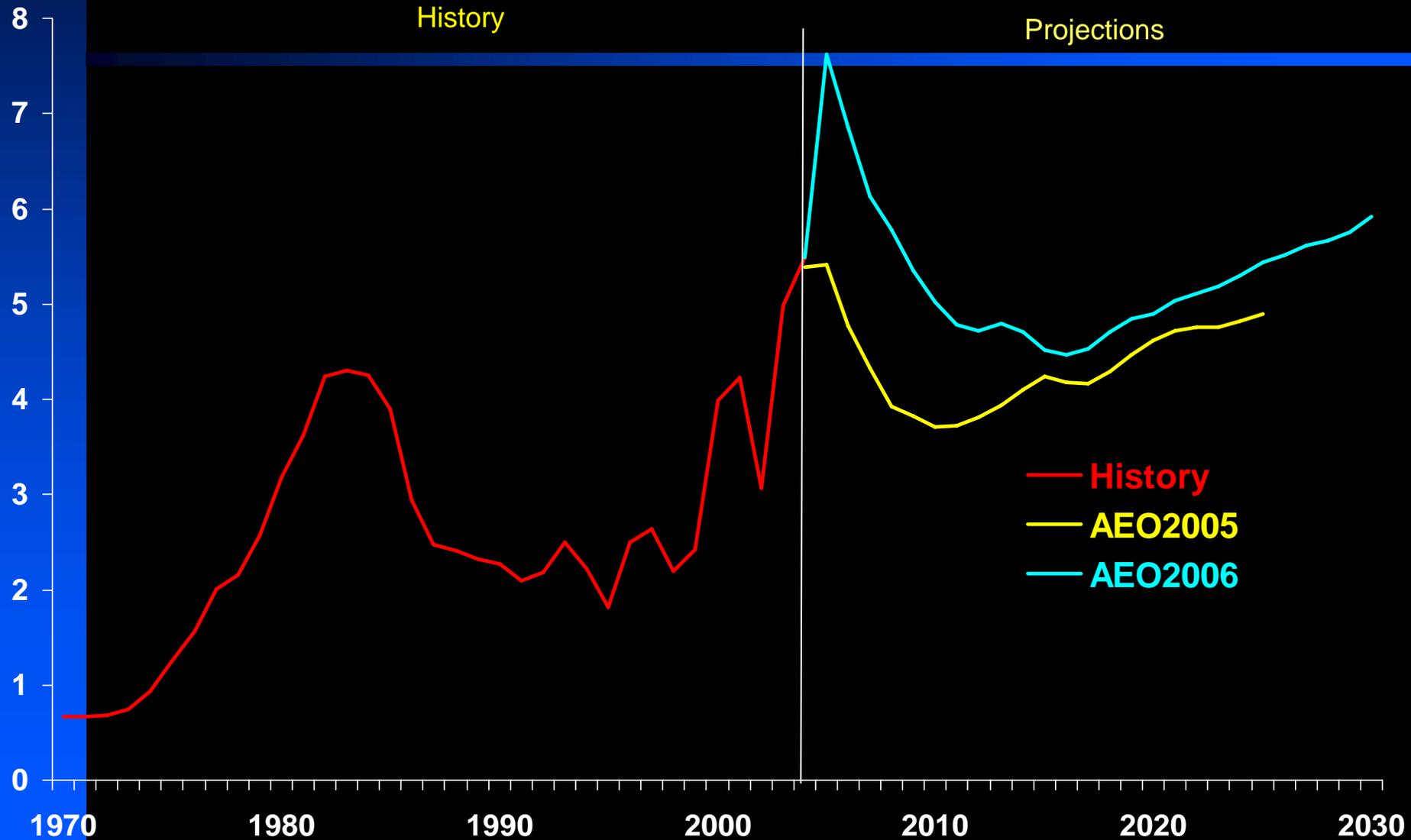
# Major Sources of Incremental U.S. Natural Gas Supply, 2004-2030 (trillion cubic feet)



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

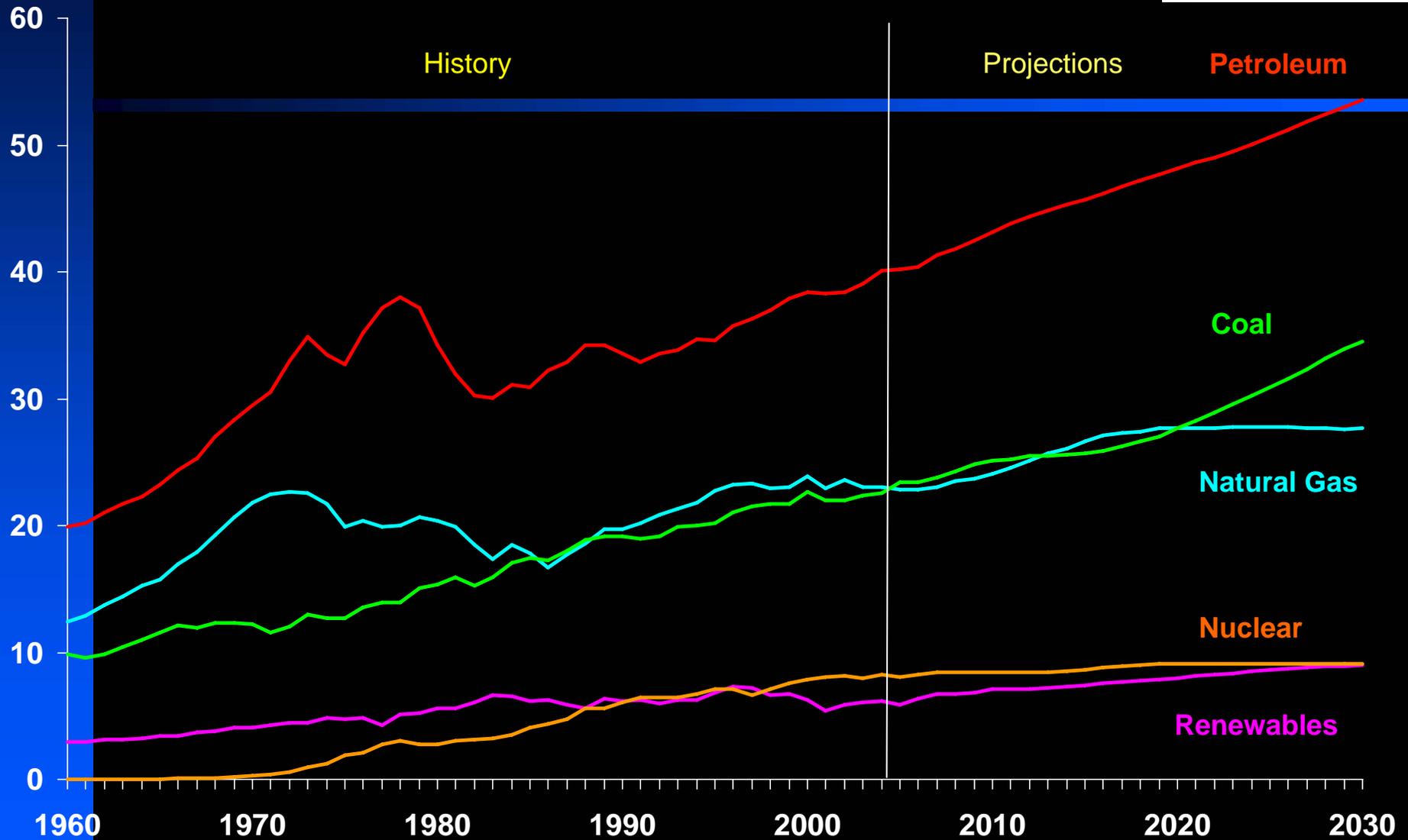


# U.S. Natural Gas Wellhead Price, 1970-2030 (2004 dollars per thousand cubic feet)



U.S. EIA, Annual Energy Outlook 2005 and 2006

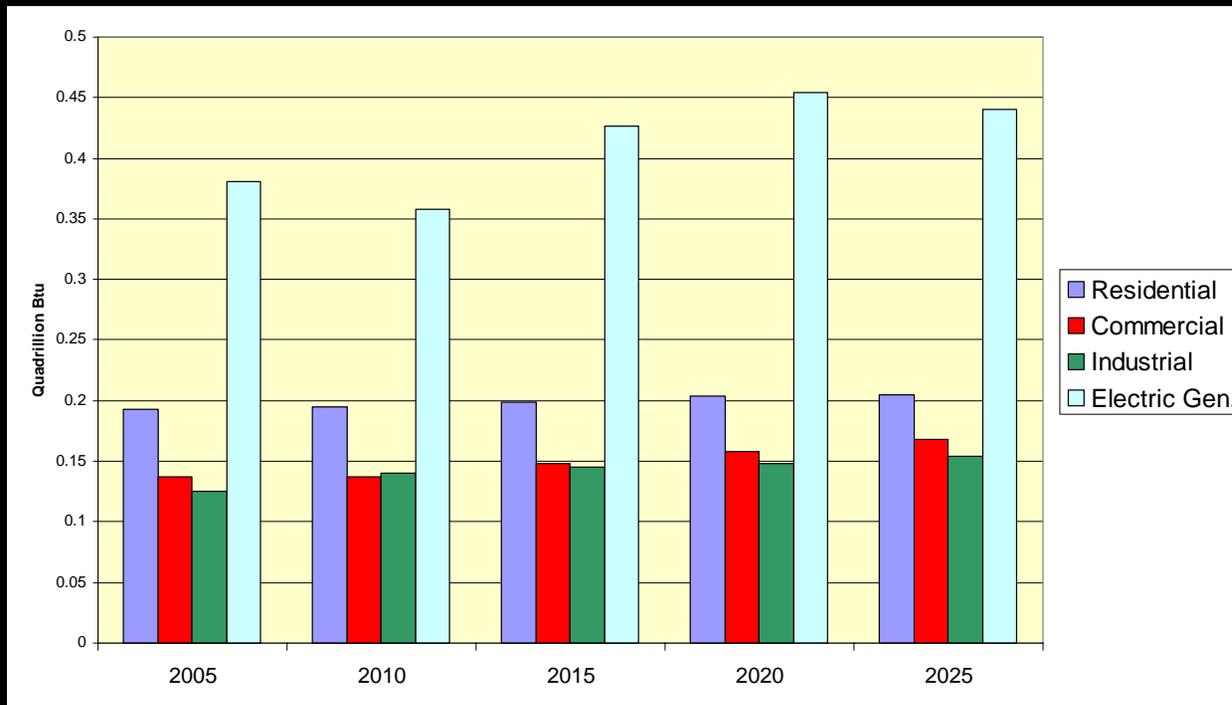
# U.S. Primary Energy Consumption by Fuel, 1960-2030 (quadrillion Btu)



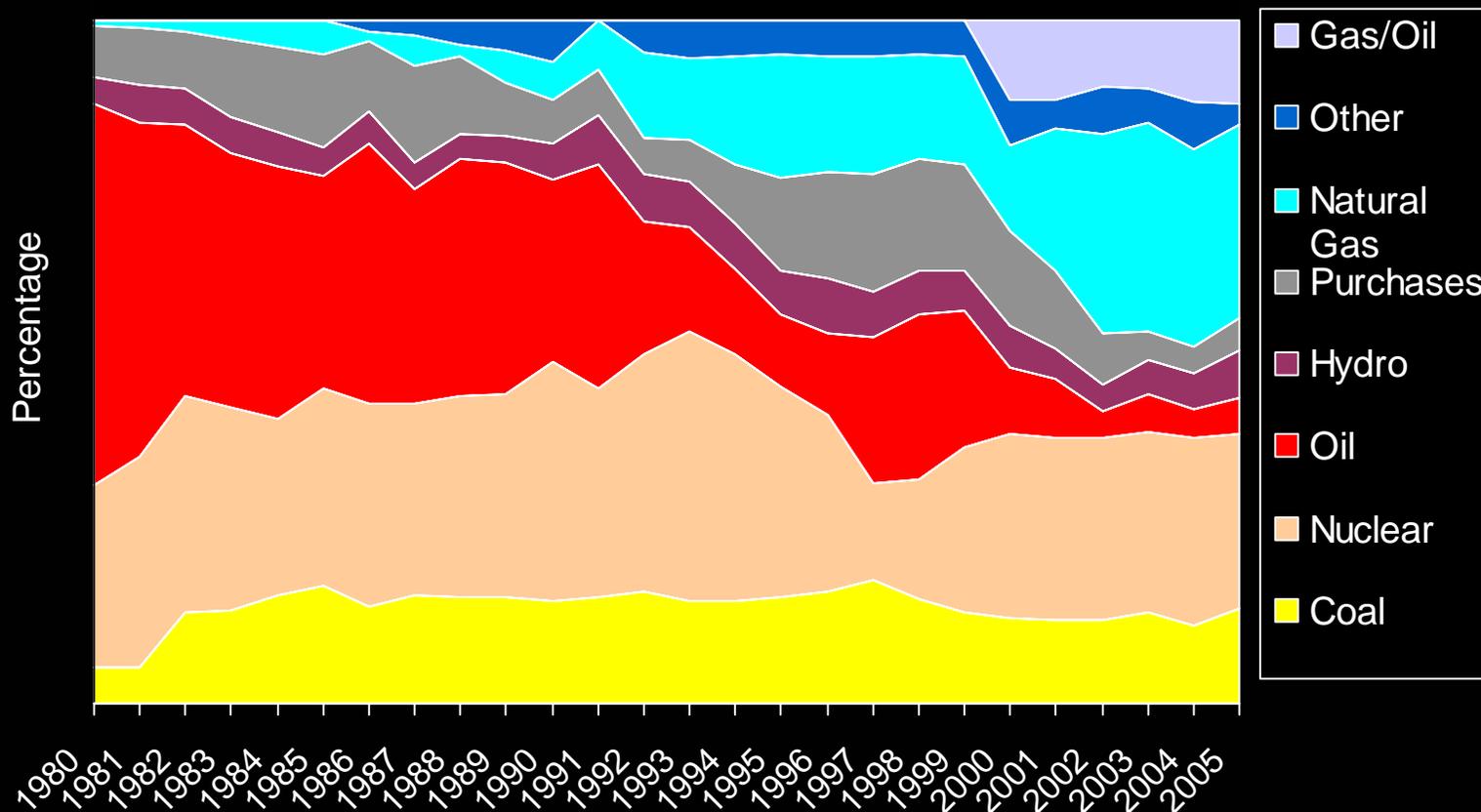
Source: U.S. EIA, Annual Energy Outlook 2006

# Projected Demand Growth by Sector, New England

Power generation remains the leading projected growth sector. Possible constraint: Will price volatility/supply concerns dampen market growth? Possible spur: If not gas in the next few years, what significant generating source will emerge?



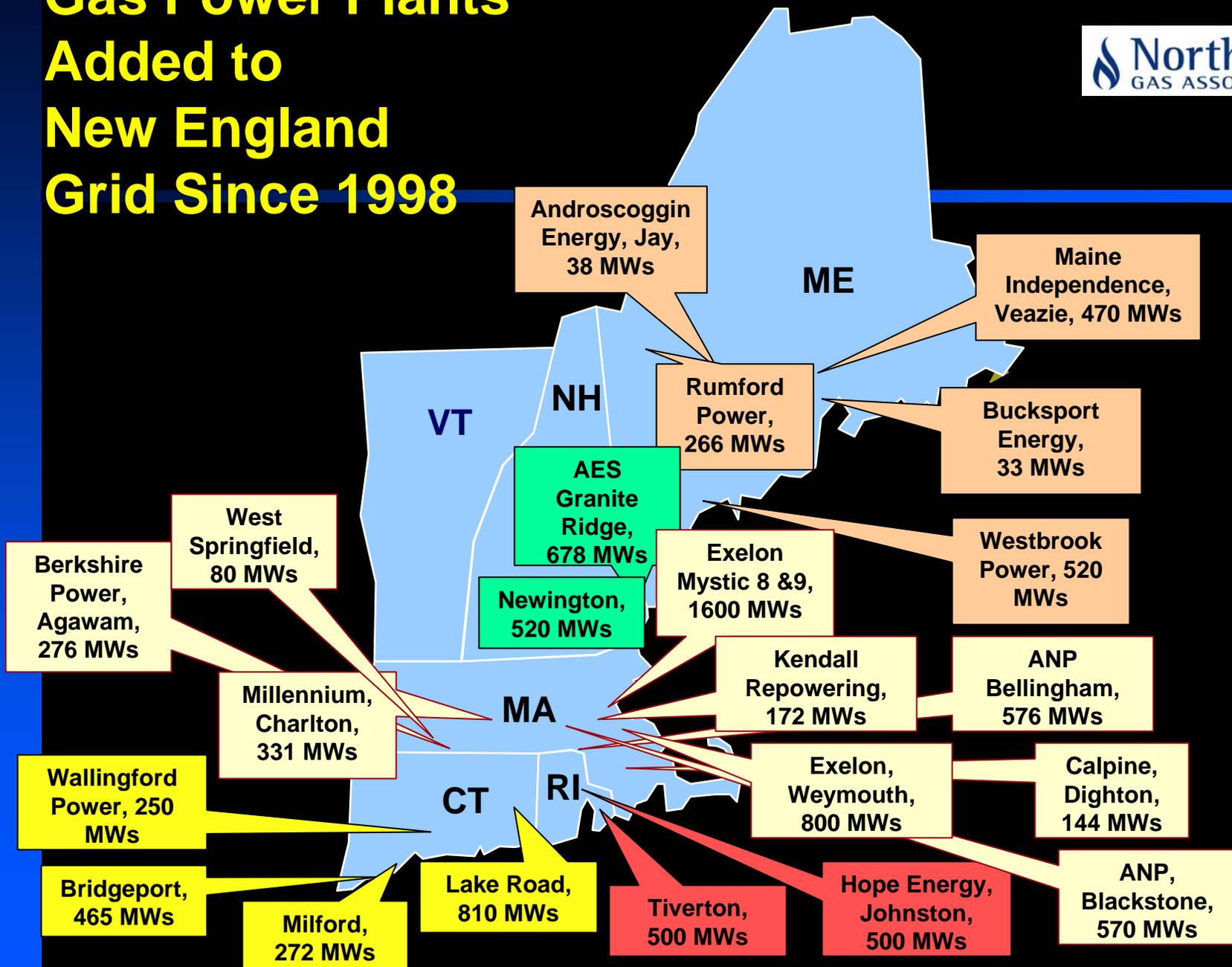
# A Changing Fuel Mix: New England's Electric Generation, 1980-2005



**2005: Gas was 28% of mix, with Gas/Oil another 12%**

Source: ISO New England

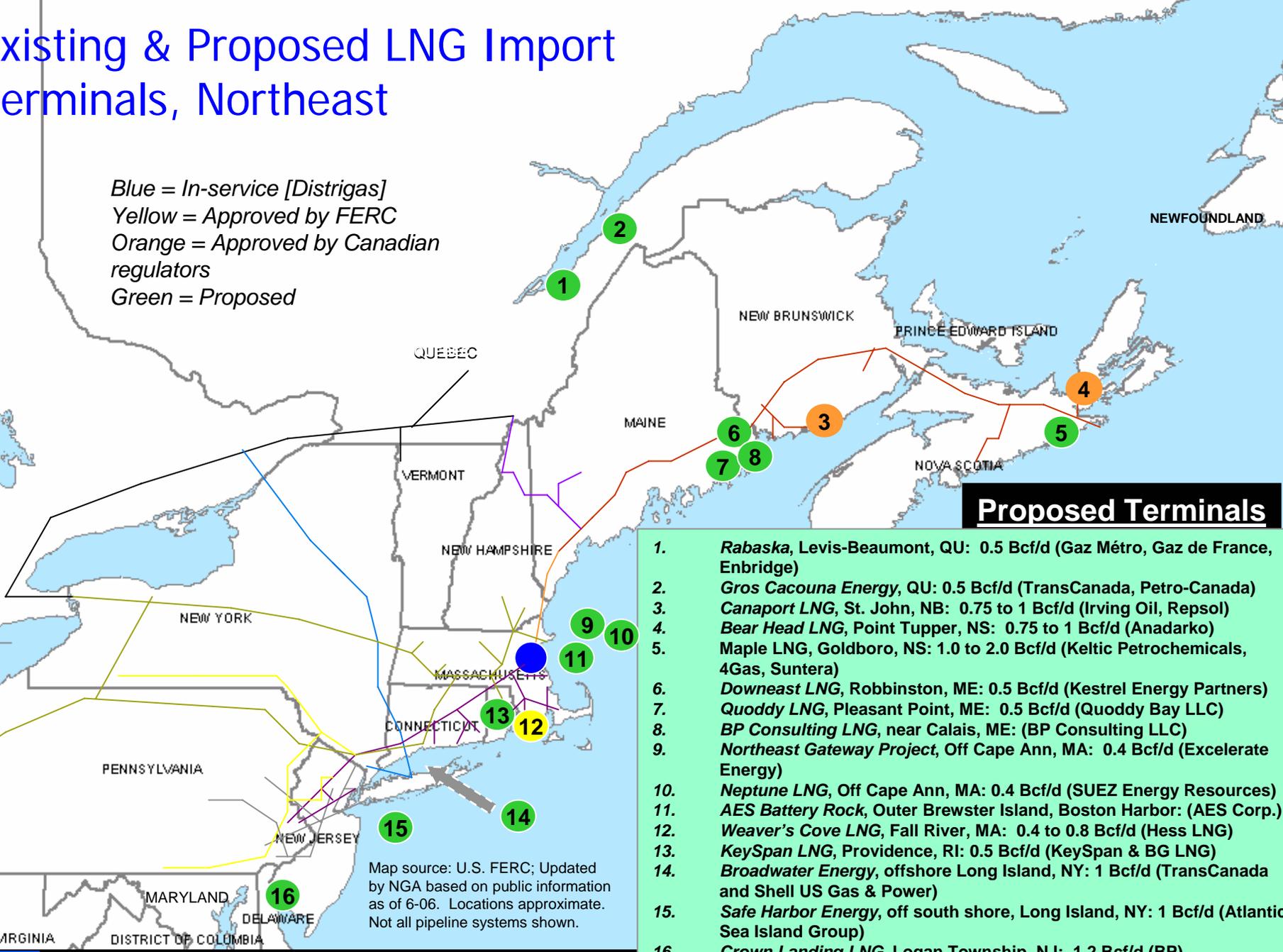
# Gas Power Plants Added to New England Grid Since 1998



# Proposed Supply Projects

# Existing & Proposed LNG Import Terminals, Northeast

Blue = In-service [Distrigas]  
 Yellow = Approved by FERC  
 Orange = Approved by Canadian regulators  
 Green = Proposed



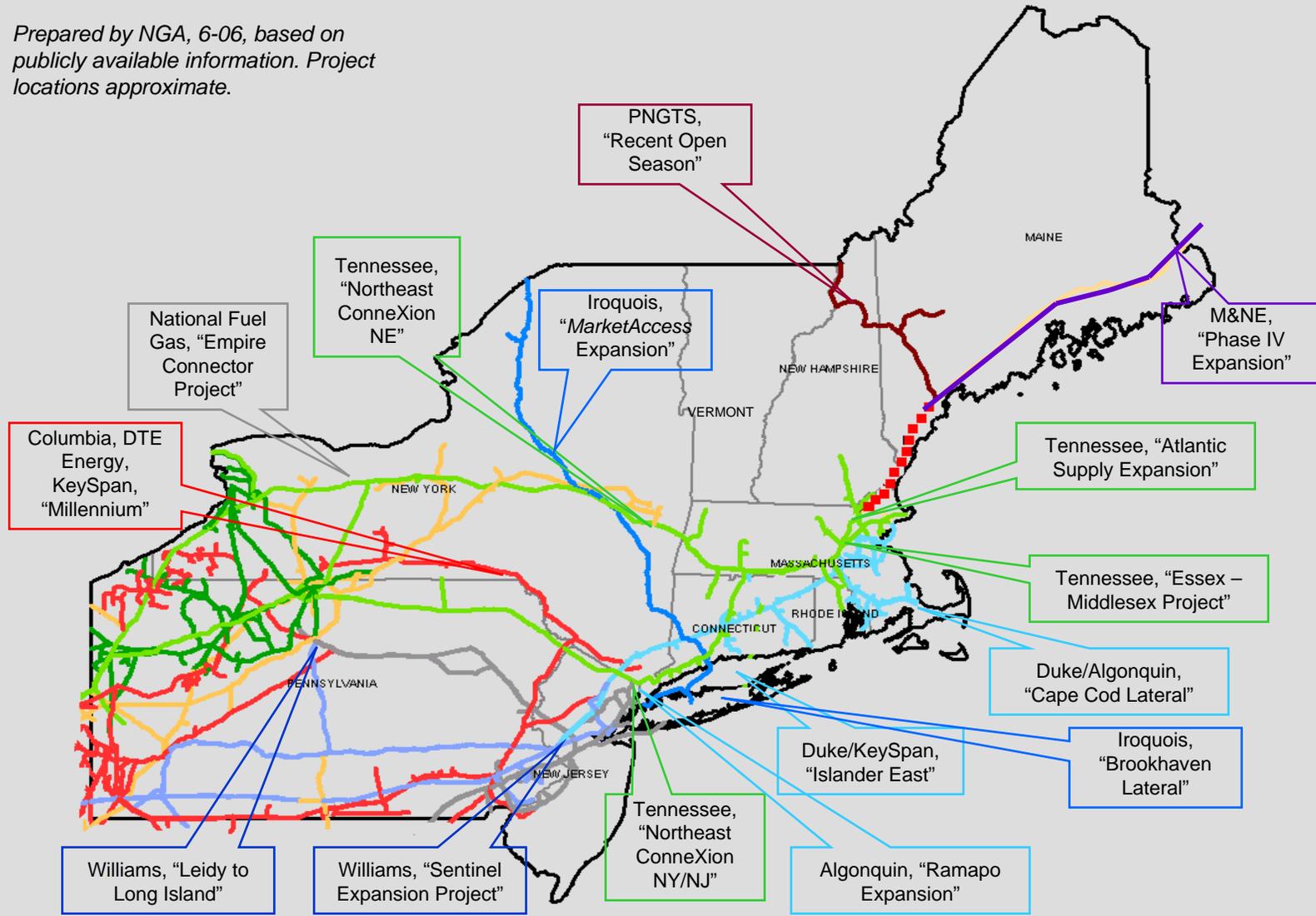
## Proposed Terminals

1. **Rabaska, Levis-Beaumont, QU:** 0.5 Bcf/d (Gaz M tro, Gaz de France, Enbridge)
2. **Gros Cacouna Energy, QU:** 0.5 Bcf/d (TransCanada, Petro-Canada)
3. **Canaport LNG, St. John, NB:** 0.75 to 1 Bcf/d (Irving Oil, Repsol)
4. **Bear Head LNG, Point Tupper, NS:** 0.75 to 1 Bcf/d (Anadarko)
5. **Maple LNG, Goldboro, NS:** 1.0 to 2.0 Bcf/d (Keltic Petrochemicals, 4Gas, Suntera)
6. **Downeast LNG, Robbinston, ME:** 0.5 Bcf/d (Kestrel Energy Partners)
7. **Quoddy LNG, Pleasant Point, ME:** 0.5 Bcf/d (Quoddy Bay LLC)
8. **BP Consulting LNG, near Calais, ME:** (BP Consulting LLC)
9. **Northeast Gateway Project, Off Cape Ann, MA:** 0.4 Bcf/d (Excelerate Energy)
10. **Neptune LNG, Off Cape Ann, MA:** 0.4 Bcf/d (SUEZ Energy Resources)
11. **AES Battery Rock, Outer Brewster Island, Boston Harbor:** (AES Corp.)
12. **Weaver's Cove LNG, Fall River, MA:** 0.4 to 0.8 Bcf/d (Hess LNG)
13. **KeySpan LNG, Providence, RI:** 0.5 Bcf/d (KeySpan & BG LNG)
14. **Broadwater Energy, offshore Long Island, NY:** 1 Bcf/d (TransCanada and Shell US Gas & Power)
15. **Safe Harbor Energy, off south shore, Long Island, NY:** 1 Bcf/d (Atlantic Sea Island Group)
16. **Crown Landing LNG, Logan Township, NJ:** 1.2 Bcf/d (BP)

Map source: U.S. FERC; Updated by NGA based on public information as of 6-06. Locations approximate. Not all pipeline systems shown.

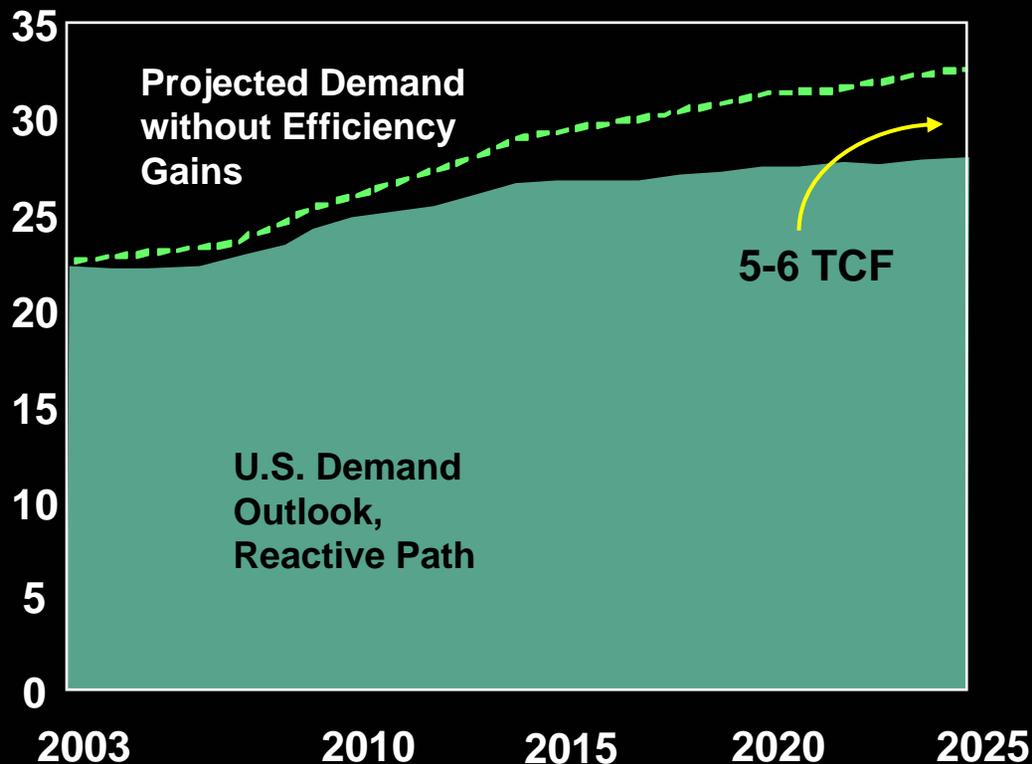
# Proposed Northeast Pipeline Projects

Prepared by NGA, 6-06, based on publicly available information. Project locations approximate.



# Efficiency

# NPC: “Continued Energy Efficiency is Critical: Innovation, Technology, Markets”



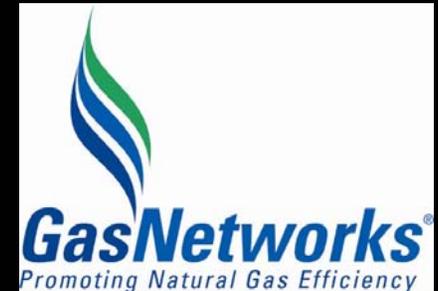
- **Efficiency gains key to NPC outlooks**
  - industrial boiler and process technology
  - power generation technology, including cogeneration
  - demand response in power markets
  - commercial/residential demand responses
- **Public policy can facilitate greater efficiency gains**

# Example: GasNetworks®

- ◆ GasNetworks® is a nationally-recognized and award-winning collaborative consisting of local natural gas companies serving residential and commercial & industrial customers throughout New England. It has been promoting energy efficiency and the use of high efficiency natural gas technologies since 1997. Through its contractor training and education programs, GasNetworks has provided expert training to over 4,000 contractors and publishes *GasNetworks News*®, a quarterly newsletter distributed to over 20,000 subscribers.

#### Current Members:

- ◆ Bay State Gas
- ◆ Berkshire Gas
- ◆ KeySpan Energy Delivery (New England)
- ◆ New England Gas (MA)
- ◆ Northern Utilities (NH and ME)
- ◆ NSTAR Gas
- ◆ Unital (MA)



# Concluding Points

- ◆ **Natural gas demand continues to grow...**
  - But are all market participants stepping forward to support system growth and infrastructure investment?
  - Infrastructure requires long-term commitments, but power generators face short-term financial pressures
  - Who pays for reliability?
  
- ◆ **Natural gas infrastructure projects are timed to meet market need...**
  - But will siting issues continue delays that add to consumer cost and impact system reliability?
  
- ◆ **A balanced portfolio remains the best policy...**
  - Fuel diversity, yes, but also supply source diversity
  - New England's done well in diversifying its gas sources, and 2005 Gulf hurricanes remind us of need for greater diversity of infrastructure system locations – closer to market centers
  - Efficiency needs to play an increasing role

# Recommendations

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