

# Natural Gas Costs in an “O”volving World

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# Where is Natural Gas Going

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- Supply is determined by price
- Price is determined by demand
- Demand is determined by price
- Price is determined by supply

# A F''O''rmula for Change

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Sound energy policy is necessary to avoid  
an energy crisis.....

**Usually an energy crisis is necessary to  
produce reasonable (sound) energy  
policy**

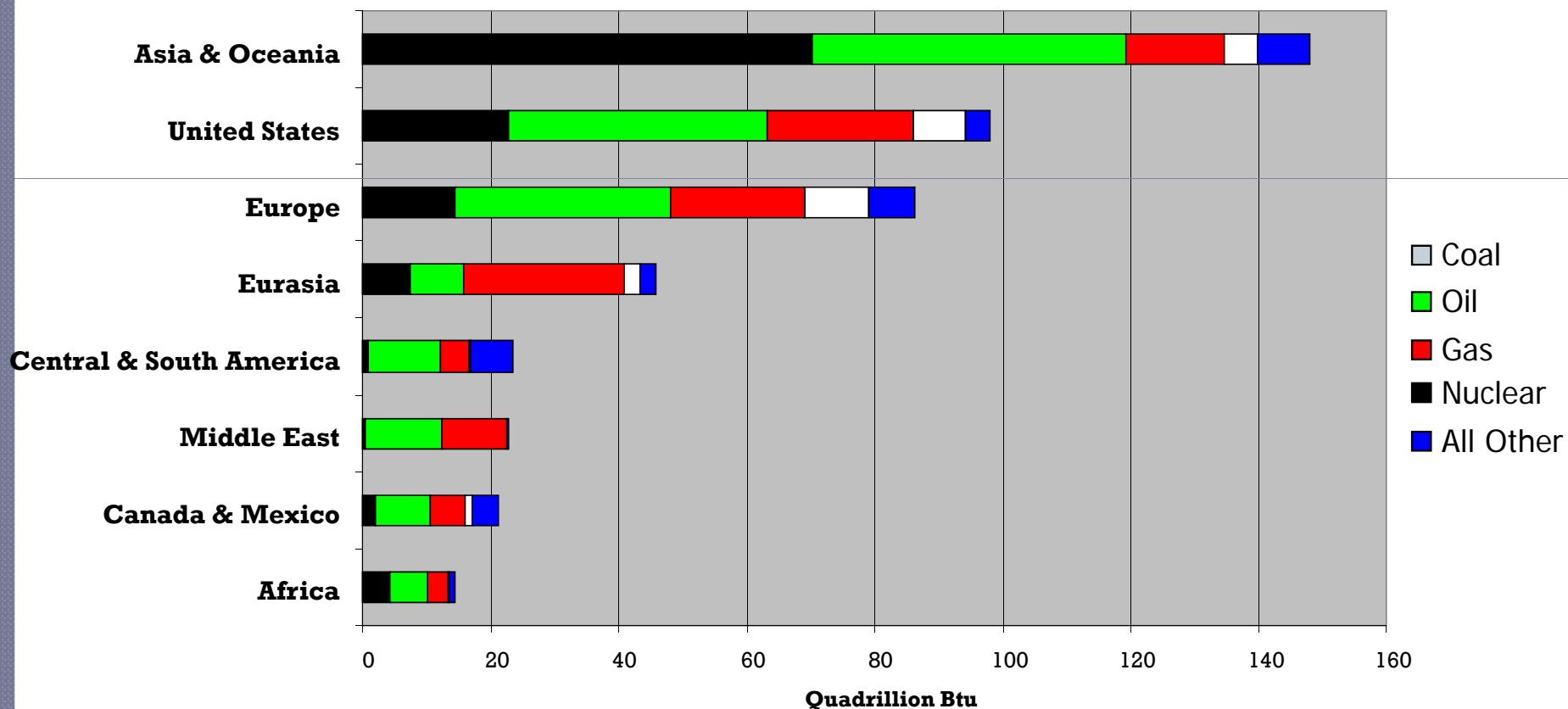
# Reality v. P''O''litics

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- Energy Commodities v. Energy Independence
- Bio fuels v. cheap gasoline
- Electric reliability v. wind energy
- Carbon fuels v. renewables
- More productive economy v. Global warming
- Electric generation v. Clean electric cars
- Toxic waste disposal v. Solar power
- Energy prices v. Energy subsidies

# GI"O"bal Energy

Energy Use (Quadrillion Btu)

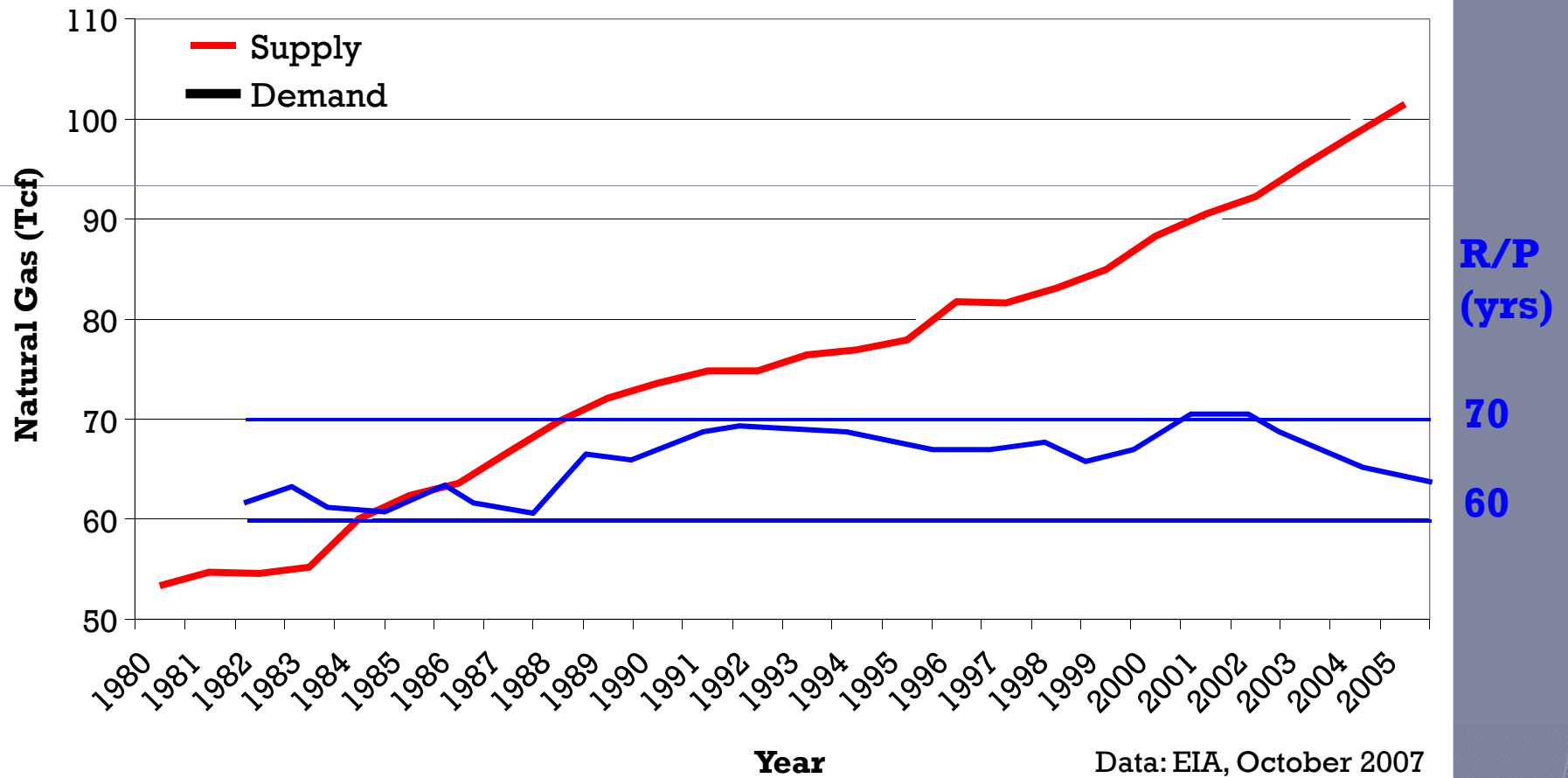


Data: EIA, October 2007

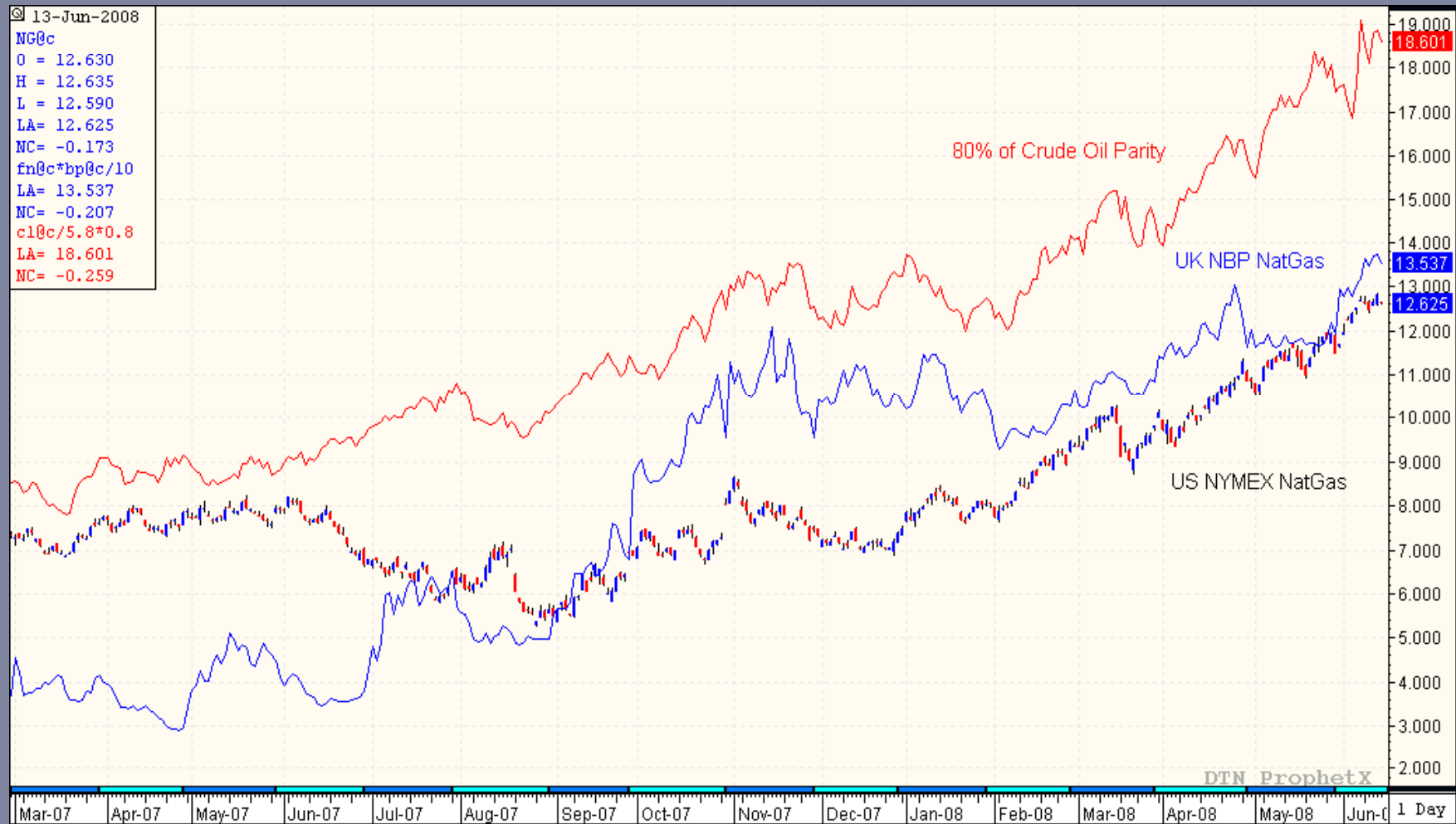
*We depend upon fossil fuels today.*

# Global Natural Gas Supply and Demand

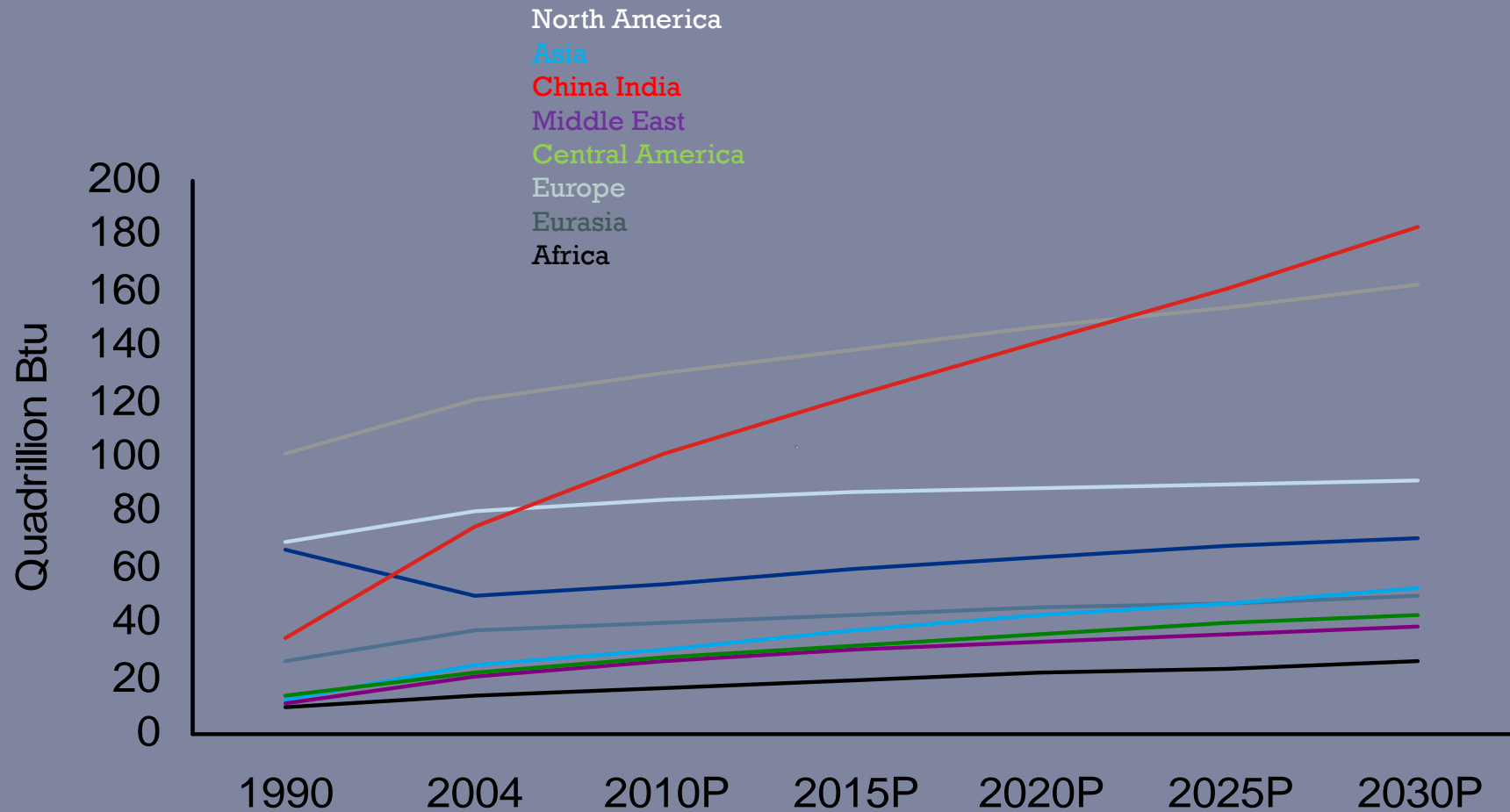
\*Supply = world natural gas production & Demand = world natural gas consumption.



# World Gas Prices Led Higher by Crude "O"il Advance

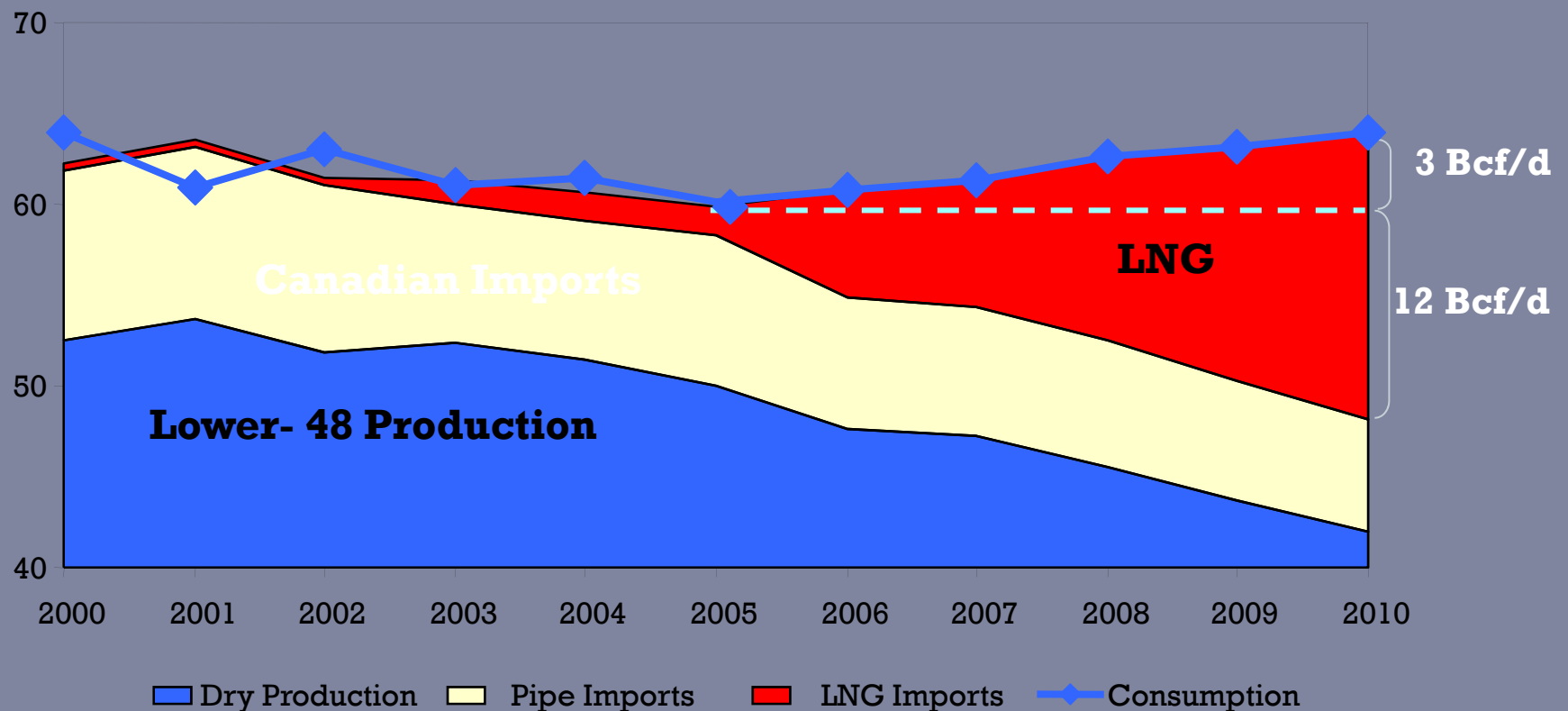


# Global Demand Driven By Asia





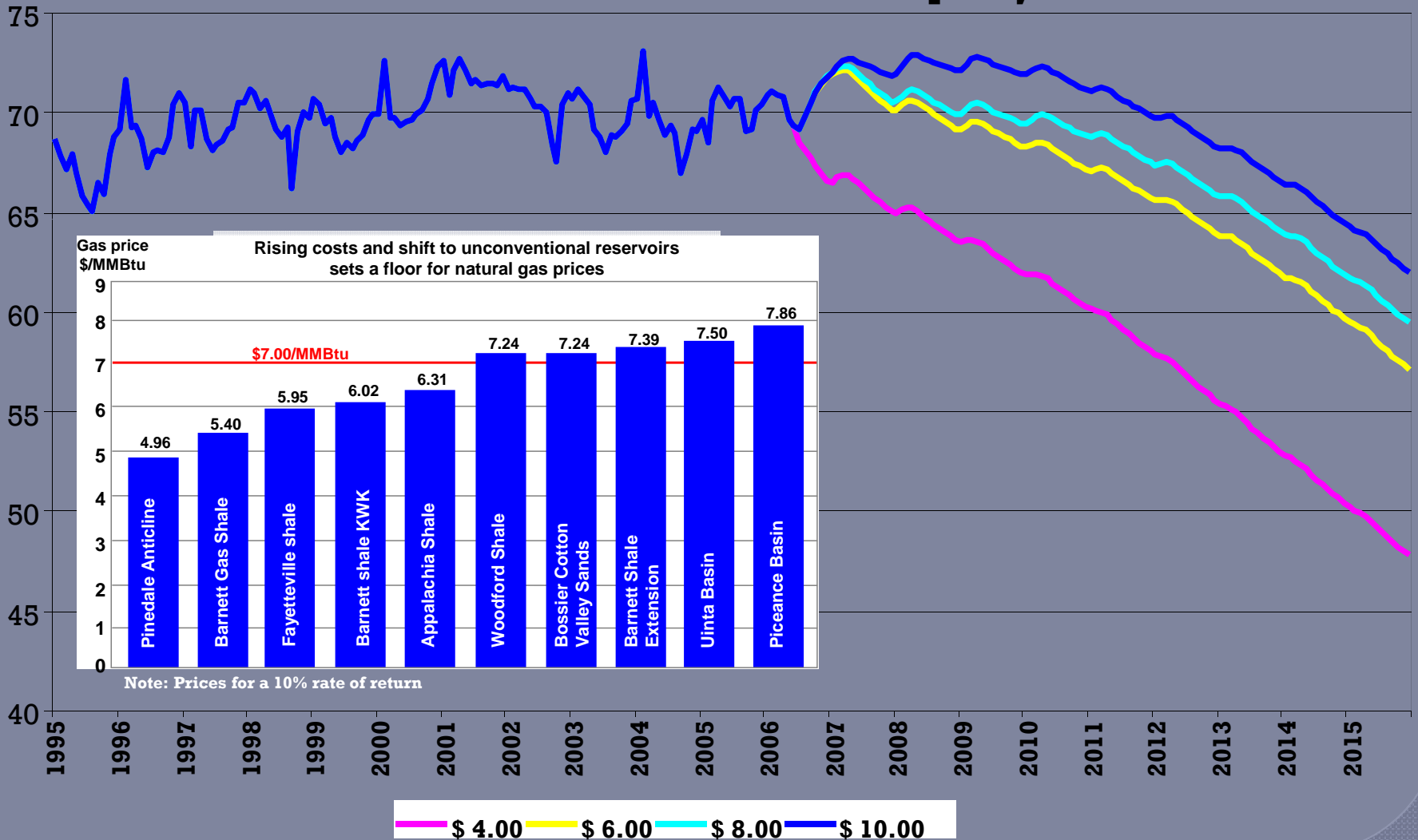
# Production and Imports vs. Consumption



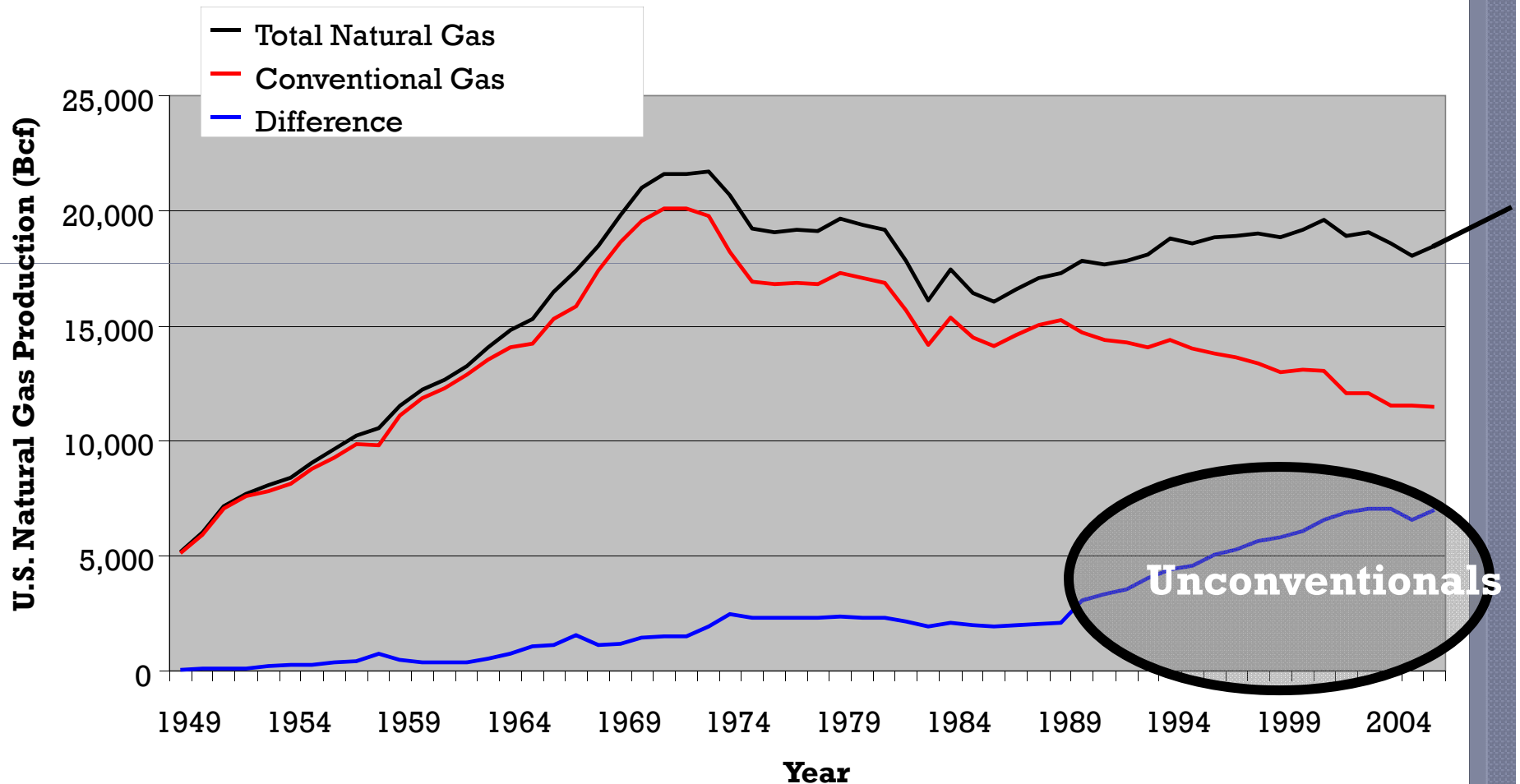
Source: Lower- 48: IHS 2006; Canadian Imports & Consumption: EIA, AEO 2006

# CERA/IHS: North American Production N"O"t Sustainable @ \$10/Mcf

## Lower 48 & Canada Productive Capacity



# U.S. Natural Gas Production

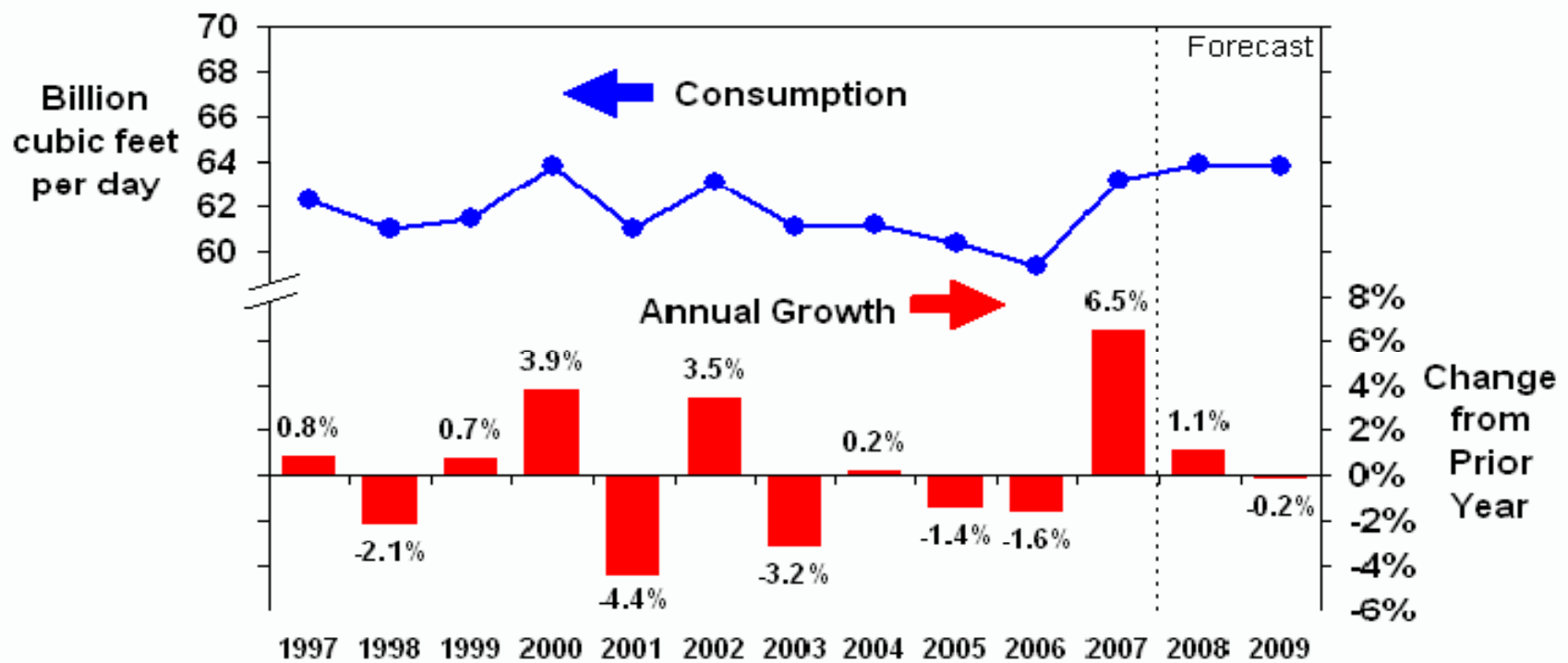


Conventionals: EIA (1949-1990) and NPC (1991-2015)

Unconventionals: 1970-1988 data from GRI, 1999. Updated data from 1989-2005 is from EIA, 2007

# Where will the consumption of Gas G"O"?

## U.S. Total Natural Gas Consumption

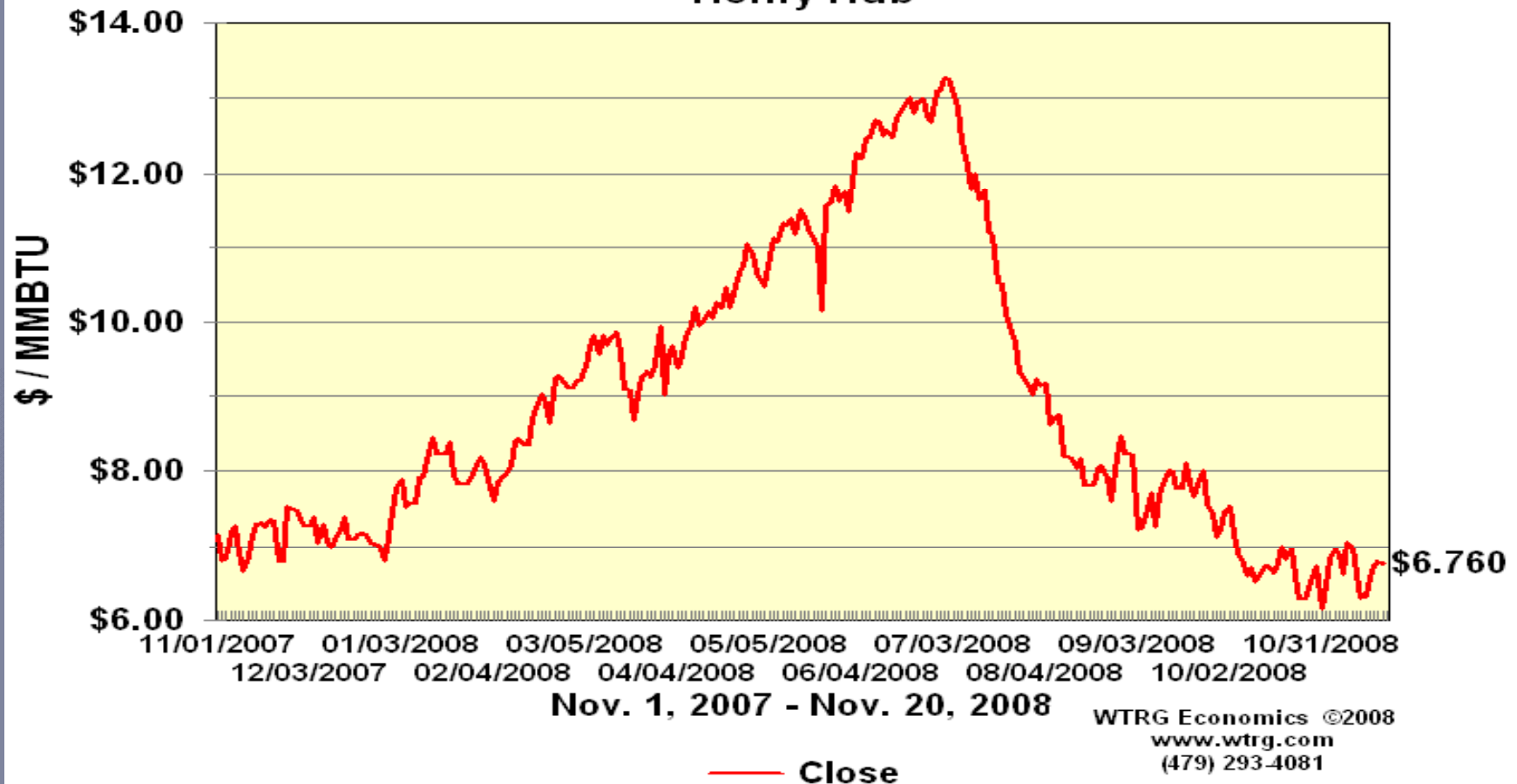


Short-Term Energy Outlook, November 2008

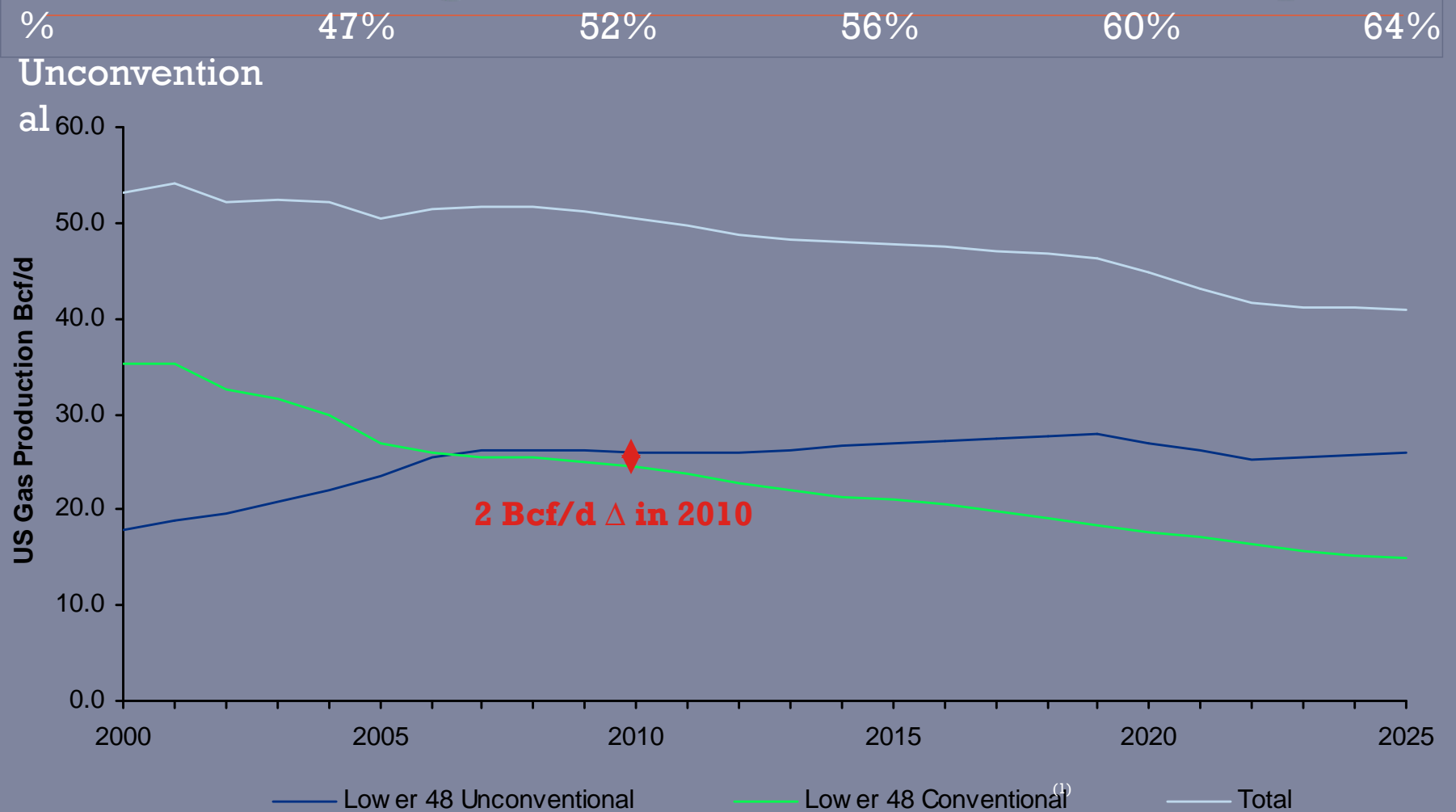


# Where is the Price of Gas G"O"ing?

Natural Gas Spot  
Henry Hub



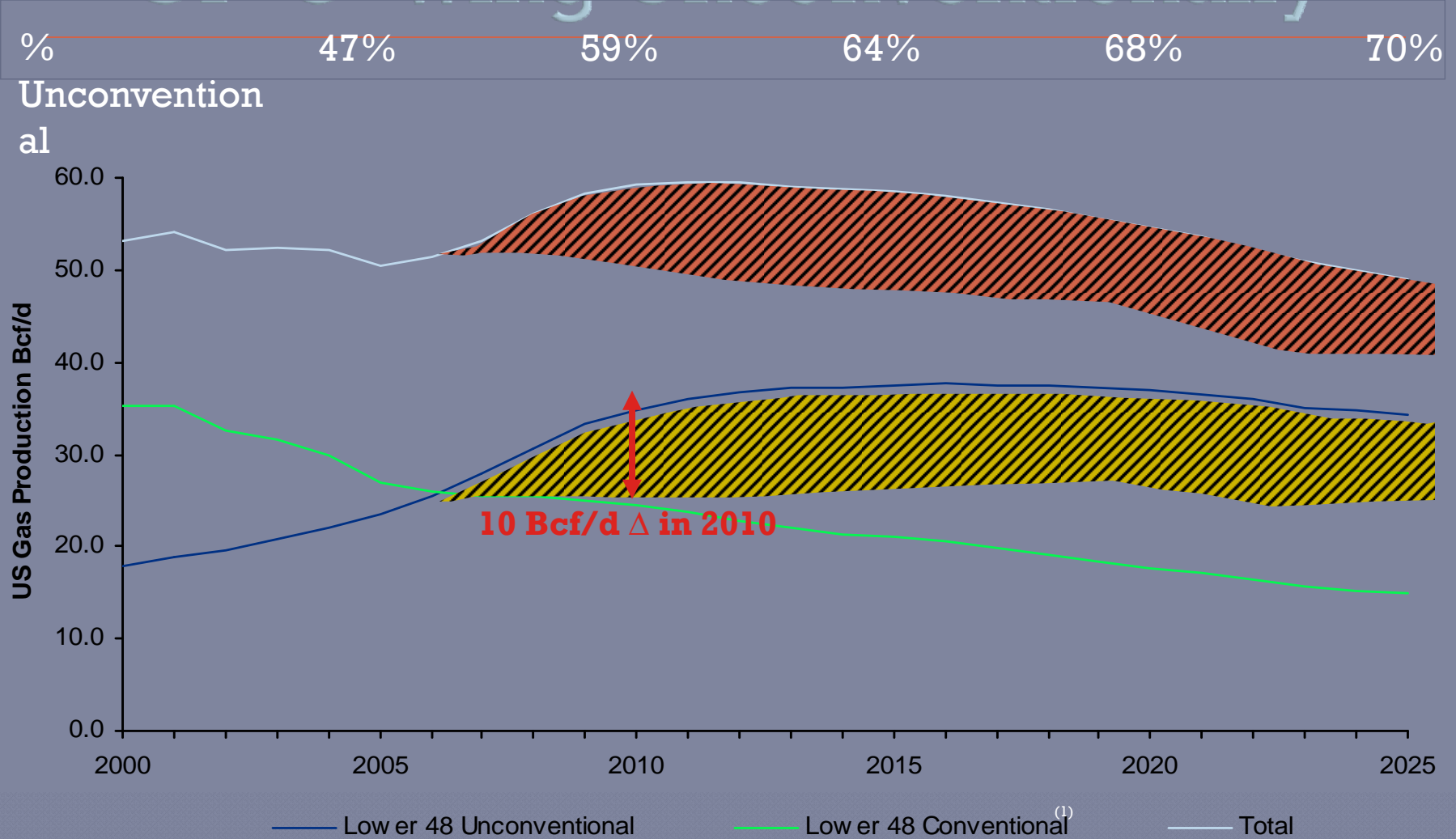
# U.S. Natural Gas Supply is Growing Unconventionally



4 Source: EIA (for unconventional) and Wood Mackenzie (for conventional). Does not include Alaska.

(1) Includes onshore and offshore conventional.

# U.S. Natural Gas Supply is Growing Unconventionally

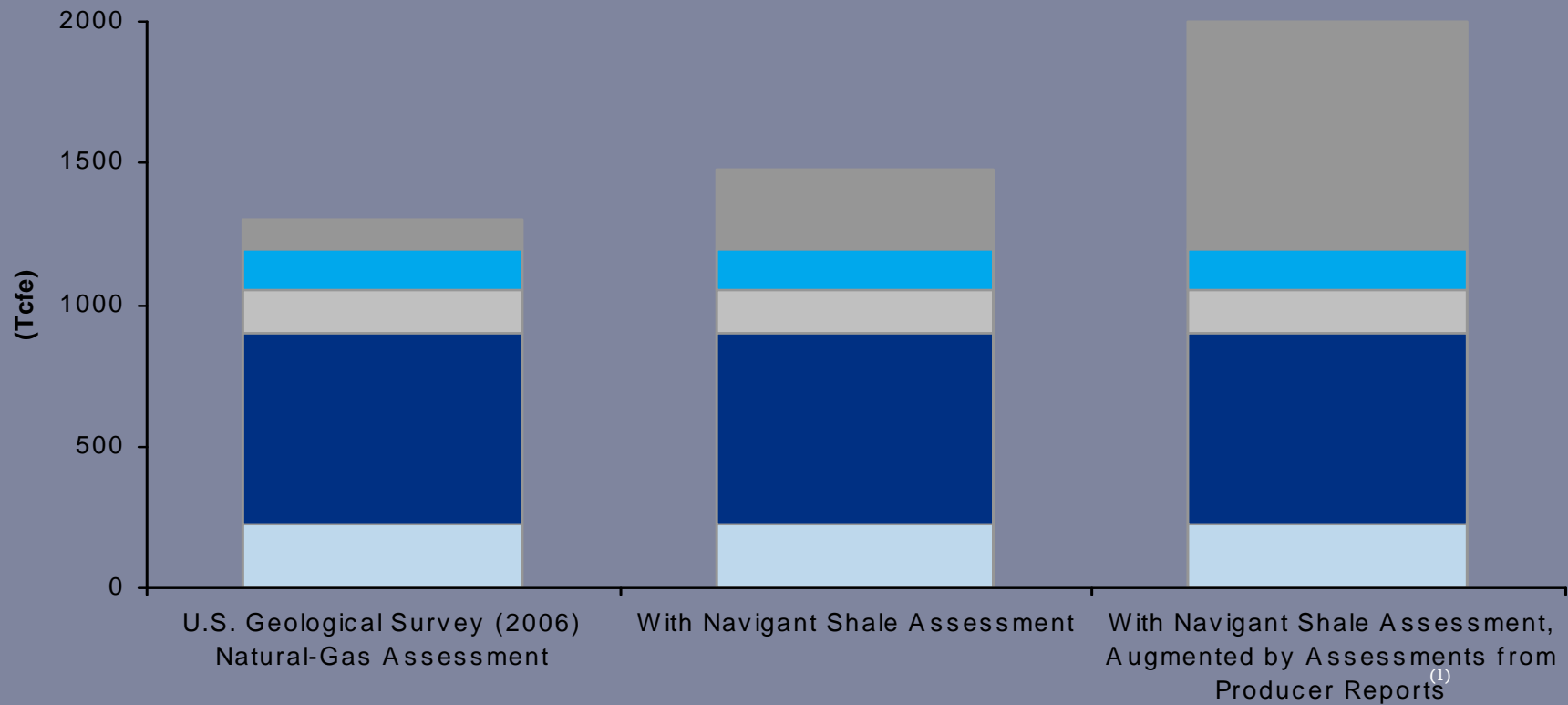


5 Source: Wood Mackenzie. Does not include Alaska.  
 (1) Includes onshore and offshore conventional.

# Views on Shale P"O"tential Are Changing

## U.S. Natural Gas Resources likely to be Recovered

- Proved Reserves
- Alaska
- Shale Assessment
- Traditional Natural Gas less Shale
- Total Coalbed Methane





# Resource P”O”tential: “Land Grab” is the Recent M&A Driver

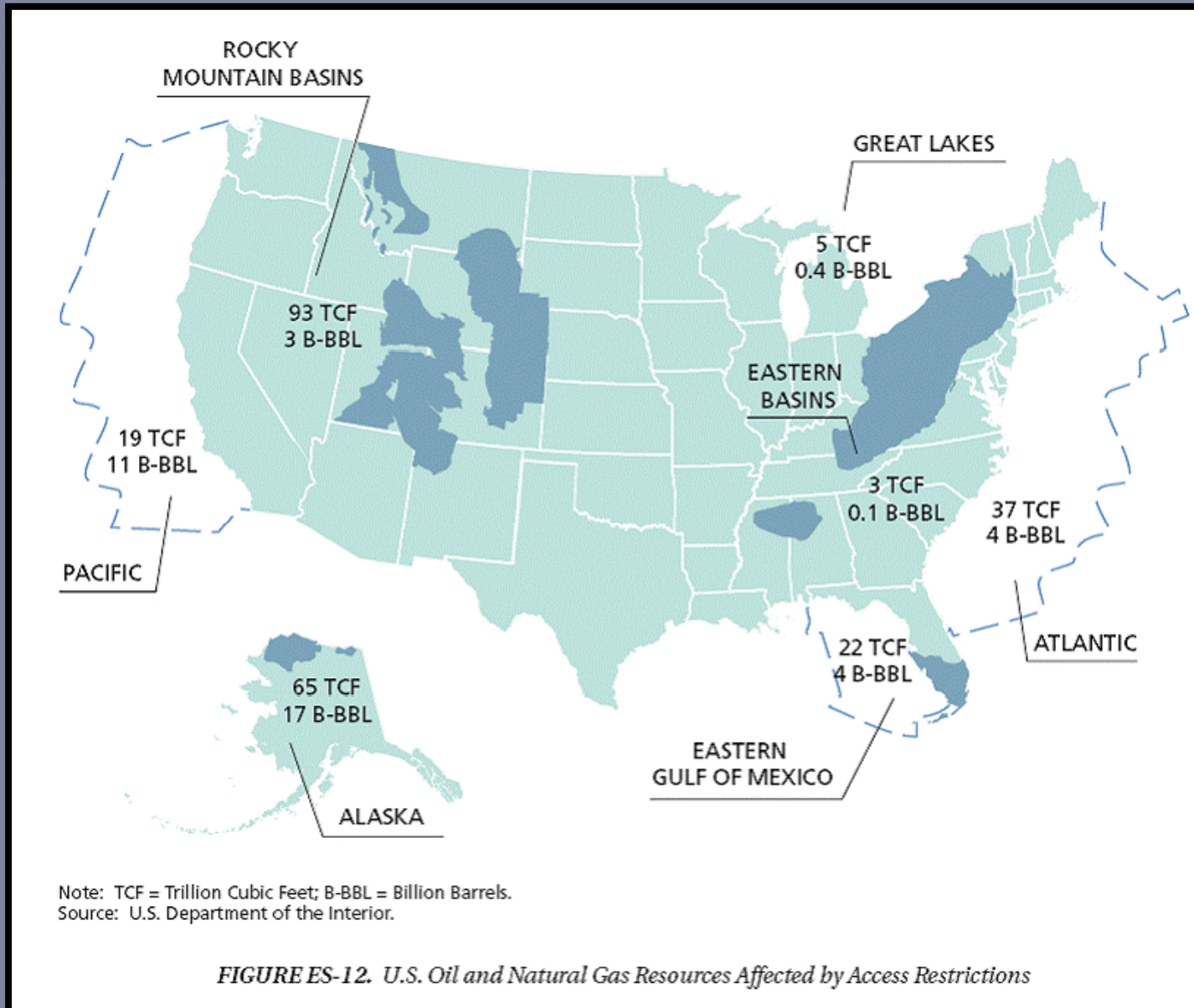
## Barnett Shale (2001-2006)

Year	Buyer	Seller	Trans. Value (\$MM)	TV / Proved (\$/Mcfe)	\$ / Acre
2001	Devon Energy	Mitchell Energy	\$3,500	\$1.47	\$1,100
2006	Devon Energy	Chief Oil & Gas	\$2,200	\$3.57	\$7,100
2006	Chesapeake	Sinclair Oil & Gas	\$800	\$5.28	\$6,400

## Haynesville Shale (2008)

Year	Buyer	Seller	Trans. Value (\$MM)	TV / Proved (\$/Mcfe)	\$ / Acre
2008	Plains Exploration	Chesapeake	\$1,650	NA	\$15,000
2008	Chesapeake	International Paper	\$300	NA	\$20,200

# More "O"ptions with More Access



Thank You f''O''r your attention

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