



ASPO-USA 2007 World Oil Conference

A Strategic Perspective on 21st Century Energy Challenges

Thomas A. Petrie, CFA
Vice Chairman, Merrill Lynch

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Houston, Texas



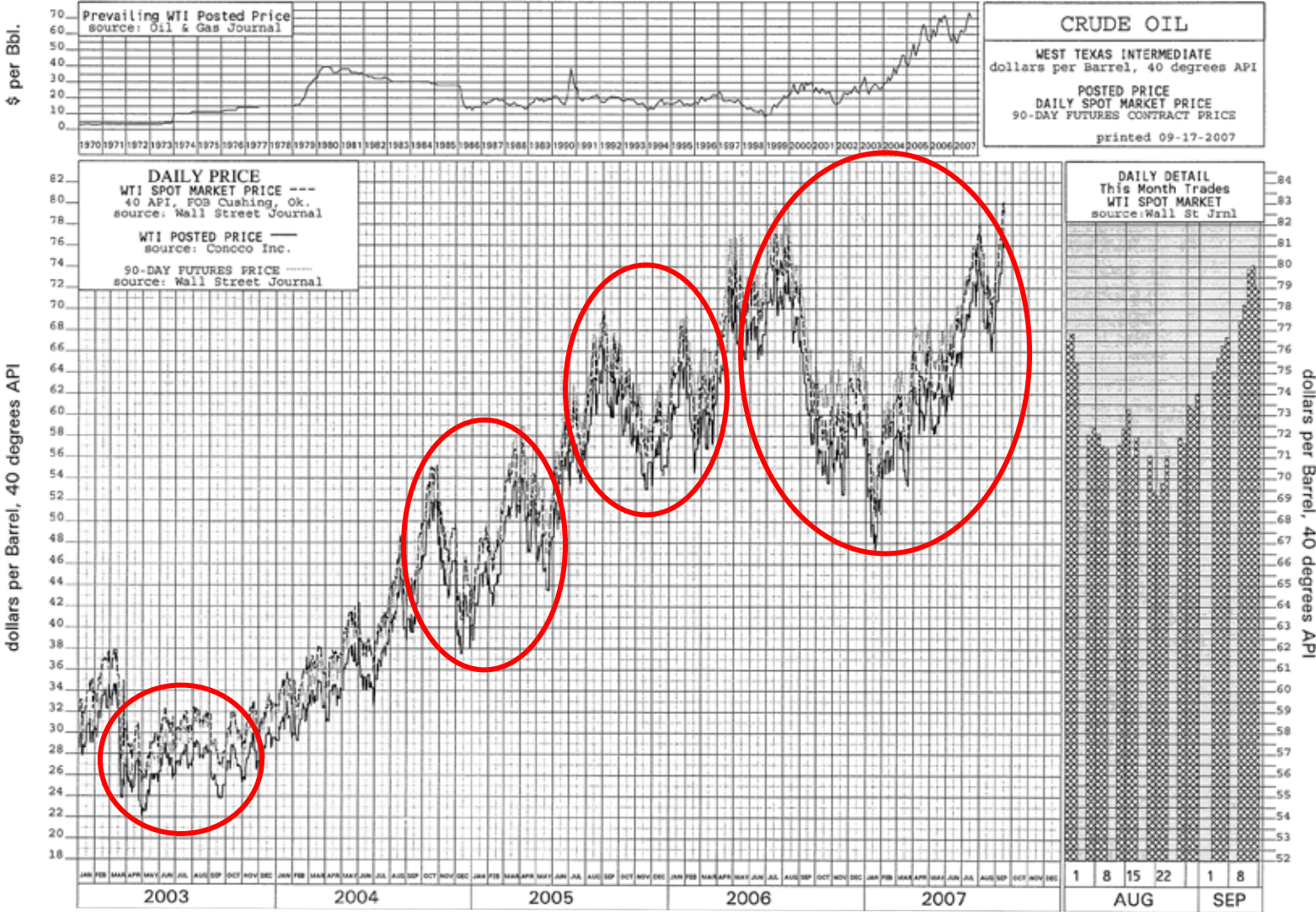
Global Markets & Investment Banking Group

Strategic Challenges (Drivers)

- Petroleum Price Trends
- Market Appreciation of Resource Maturity
- Rising Resource Nationalism
- Much Heightened Environmental Sensitivities
- Realignment of Economic and National Security Interests
- Practical Peak Oil
- Peak Gas?
- Petroleum “Black Swan Events”
- Concluding Observations



Petroleum Price Trends

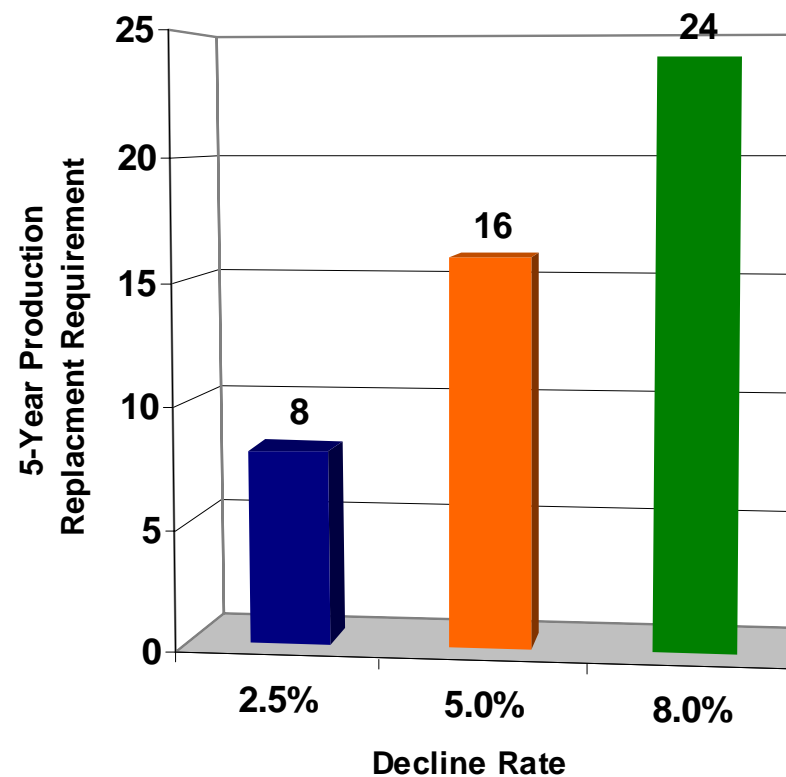


Source: Ferrill & Associates Price Watch.

Market Appreciation of Resource Maturity

Prospective Production Replacement Challenge

(Millions b/d)

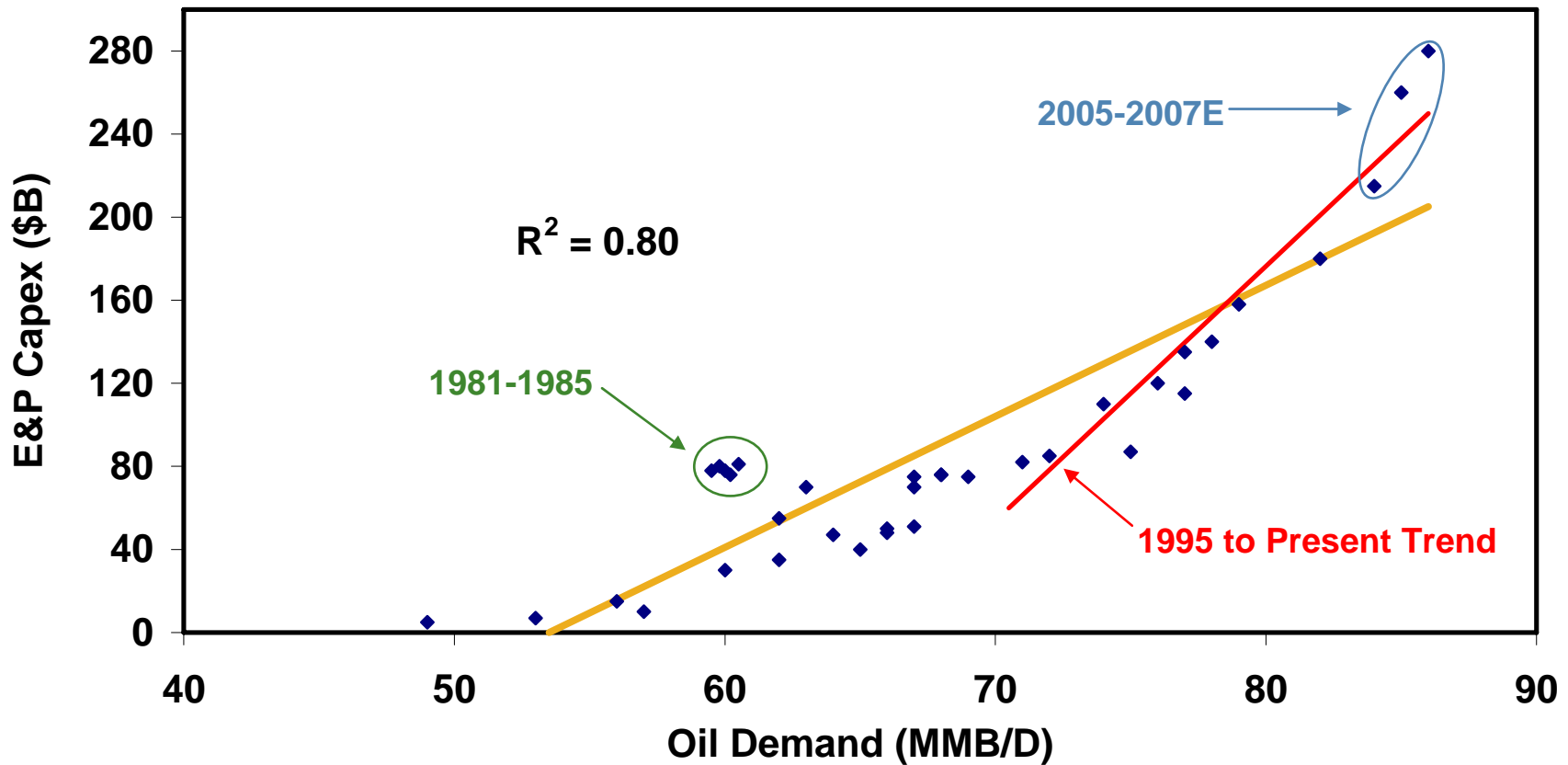


Conclusion: Depletion matters; this reality is only beginning to be understood and embraced by the market.



Market Appreciation of Resource Maturity

E&P Capex vs. Global Oil Demand



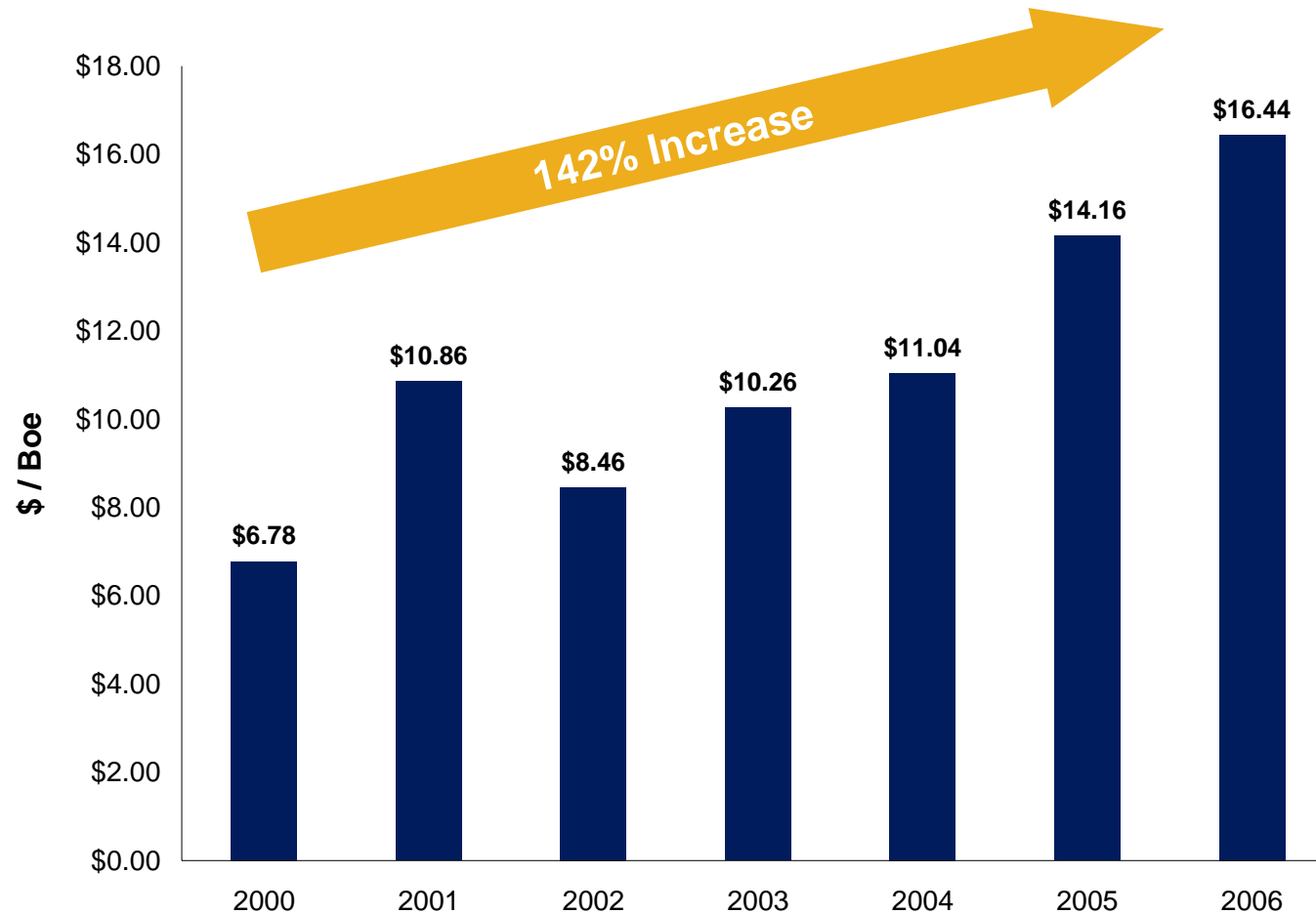
Development of new energy resources is becoming even more capital intensive.



Source: IEA and Calyon Securities (USA) estimates; (Presented at Enercom February 2007).

Market Appreciation of Resource Maturity

Recent Increase in F, D & A Costs ⁽¹⁾⁽²⁾



Finding and development cost trends incentivize buyers to bid aggressively and bolster acquisition economics.



(1) Source: Capital IQ and MLPD database.

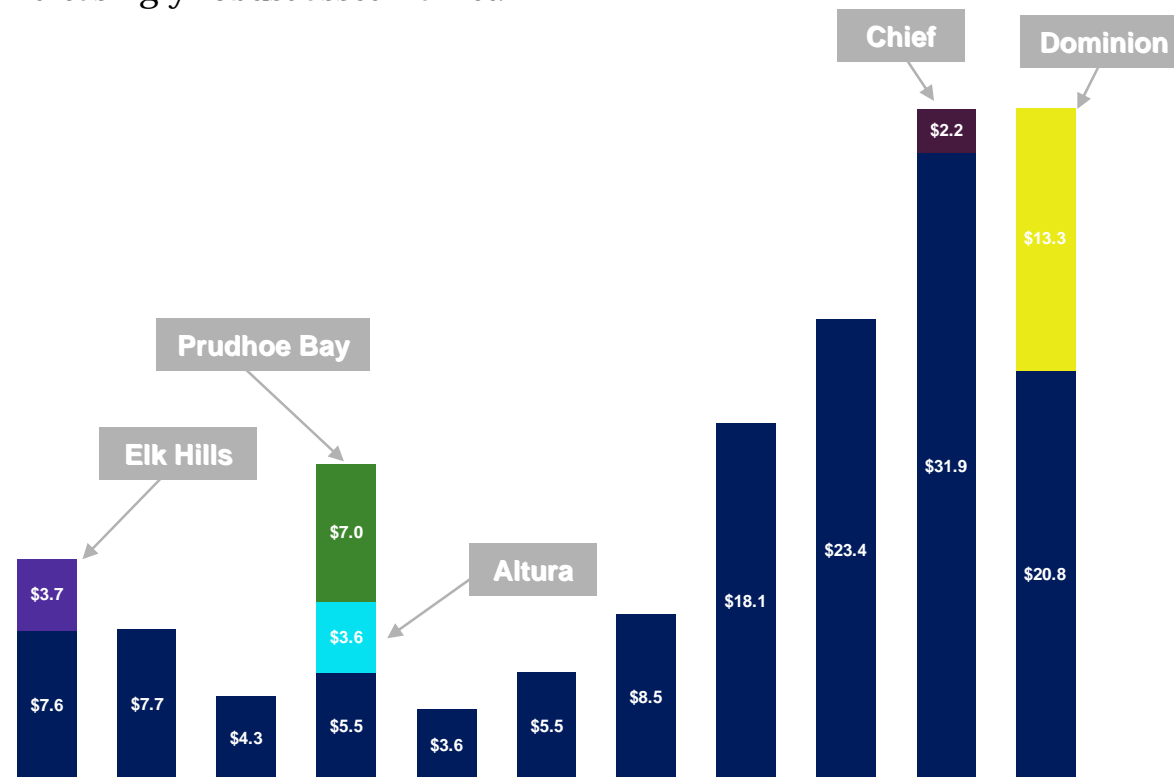
(2) Includes APA, APC, BBG, DNR, DVN, EAC, ECA, EOG, EPL, FST, KMG, NBL, NFX, POG, PPP, PXD, RRC, SFY, SM, SWN, THX, UCL, UPL, WGR, WLL, XEC and XTO.

Market Appreciation of Resource Maturity

North American – Oil & Gas Property Acquisitions (Announced between 1997 – 2007 YTD)⁽¹⁾

- Expectations for sustained higher prices, in combination with rebuilt liquidity and access to capital in the E&P sector, have supported an increasingly robust asset market.

\$Billions



Recent asset market deal flow has increased given ample capital and limited internal organic growth opportunities.

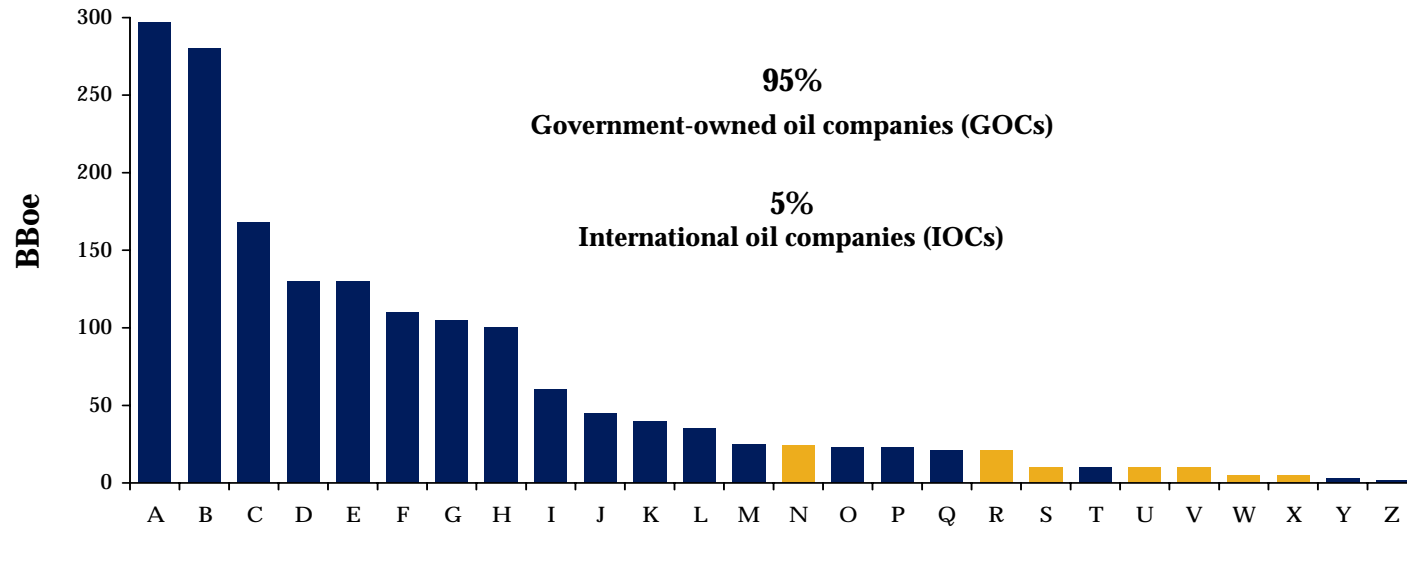


(1) Source: MLPD and JS Herold asset transaction databases.

Rising Resource Nationalism

Overview

- National oil companies control an overwhelming majority of global oil and gas resources.⁽¹⁾



Legend

- GOCs:** A: Saudi Aramco B: NIOC (Iran) C: Qatar Petroleum D: ADNOC (UAE) E: Iraq NOC F: Gazprom (Russia) G: KPC (Kuwait) H: PDVSA (Venezuela) I: NNPC (Nigeria) J: NOC (Libya) K: Sonatrach (Algeria) L: Rosneft (Russia) M: Petronas (Malaysia) O: Lukoil (Russia) P: Pemex (Mexico) Q: Petrochina (China) T: Petrobras (Brazil) Y: ONGC (India) Z: Sinopec (China).
- IOCs:** N: ExxonMobil R: BP S: Chevron U: Royal Dutch Shell V: Total W: ConocoPhillips X: ENI.

International major oils have been significantly marginalized by National Oil Companies.



(1) Source: Forbes Magazine.

Rising Resource Nationalism

Overview

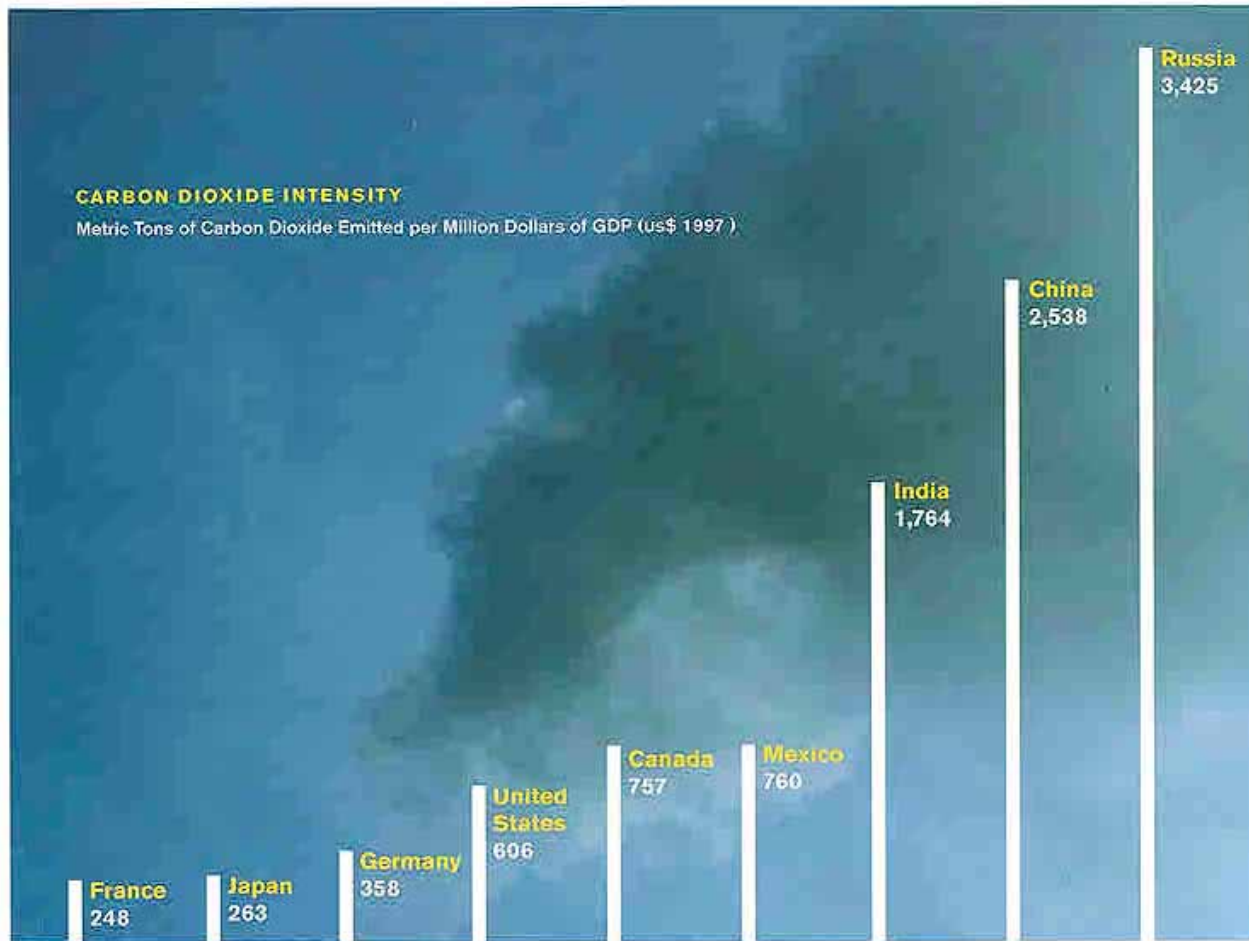
- Rising resource nationalism extending into areas previously more open to foreign investment.
 - Venezuela, Bolivia, Ecuador, Peru
 - Middle East
 - West Africa
 - Russia
 - Kazakhstan
 - Hungary
 - Canada

These adverse trends are likely to continue and may even gain momentum.



Much Heightened Environmental Sensitivities

Environmental Impact

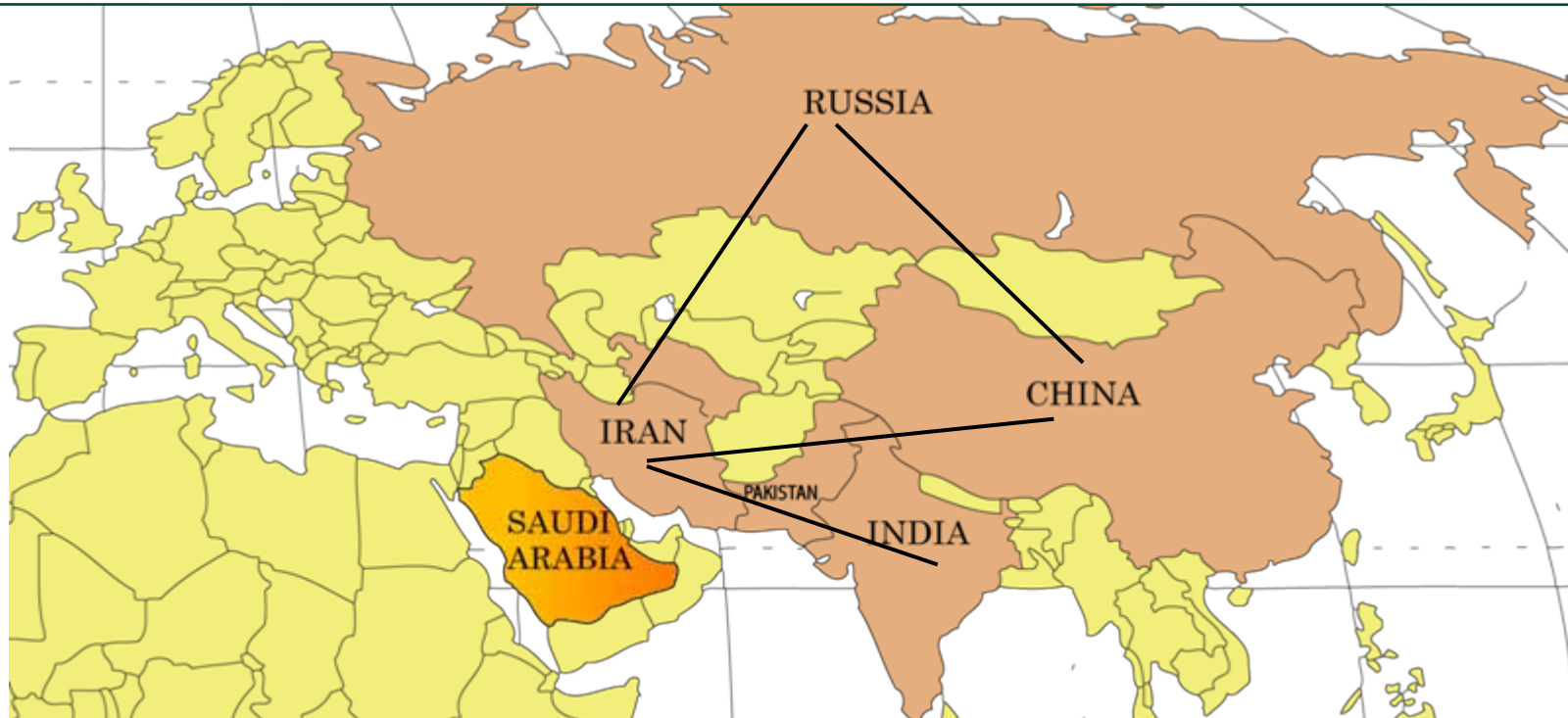


Without $\frac{3}{4}$ (BRICS) participation, emission controls will be seriously suboptimal.



Source: Energy Information Administration, 2001.

Realignment of Economic and National Security Interests



- Russia-China: Expanding both oil and gas linkages
- Iran-Russia: Nuclear cooperation for civilian reactor needs
- China-Iran: Large purchases of Iranian crude oil and products
- Iran-Pakistan-India: Considering a gas pipeline link

Conclusion: New and evolving resource priorities are trumping historic relationships.



THE
BLACK SWAN



The Impact of the
HIGHLY IMPROBABLE

Nassim Nicholas Taleb



Petroleum Black Swan Events

Recession Concerns?

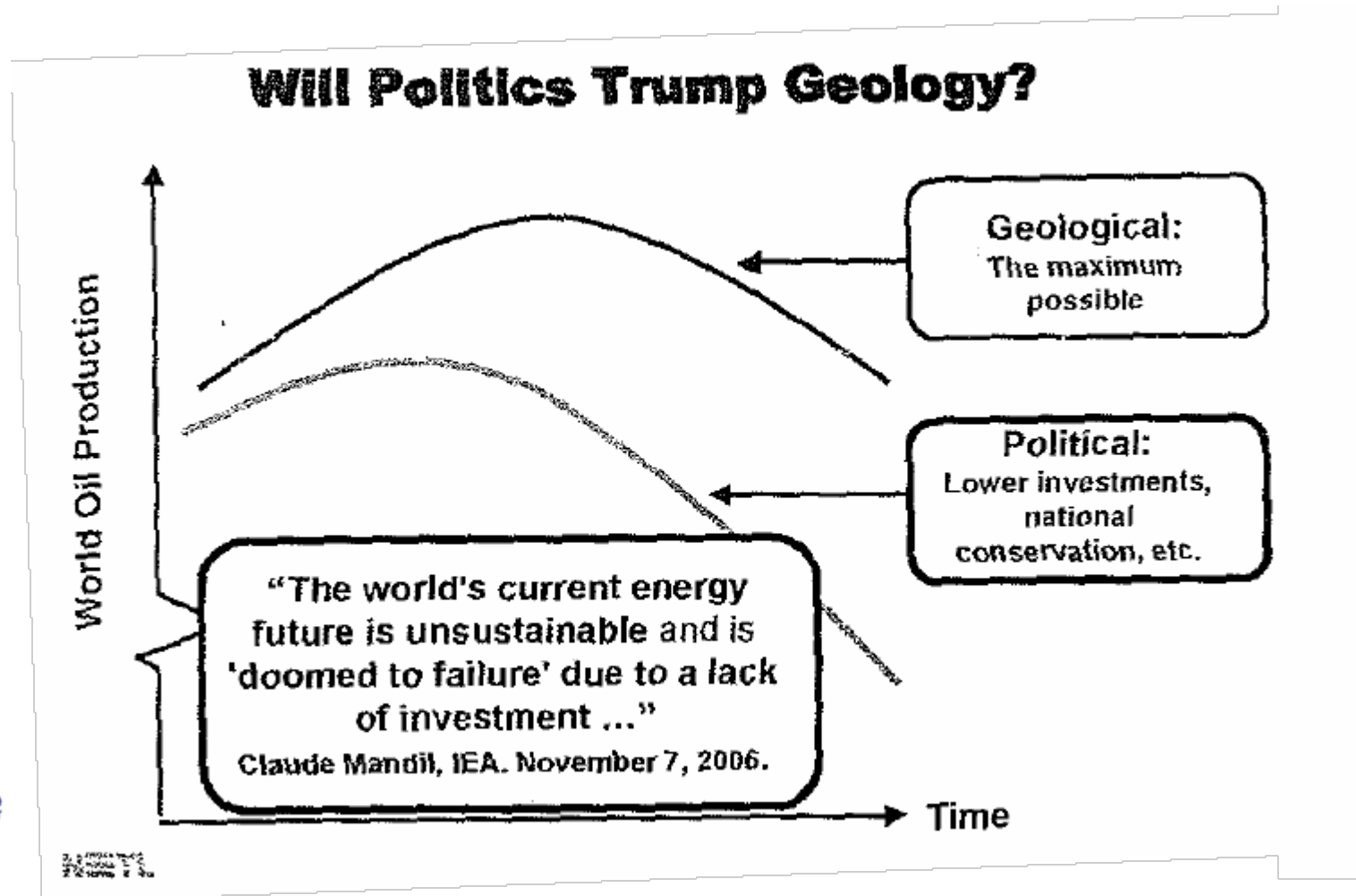


Petroleum Black Swan Events

Recession Concerns?



Practical Peak Oil?

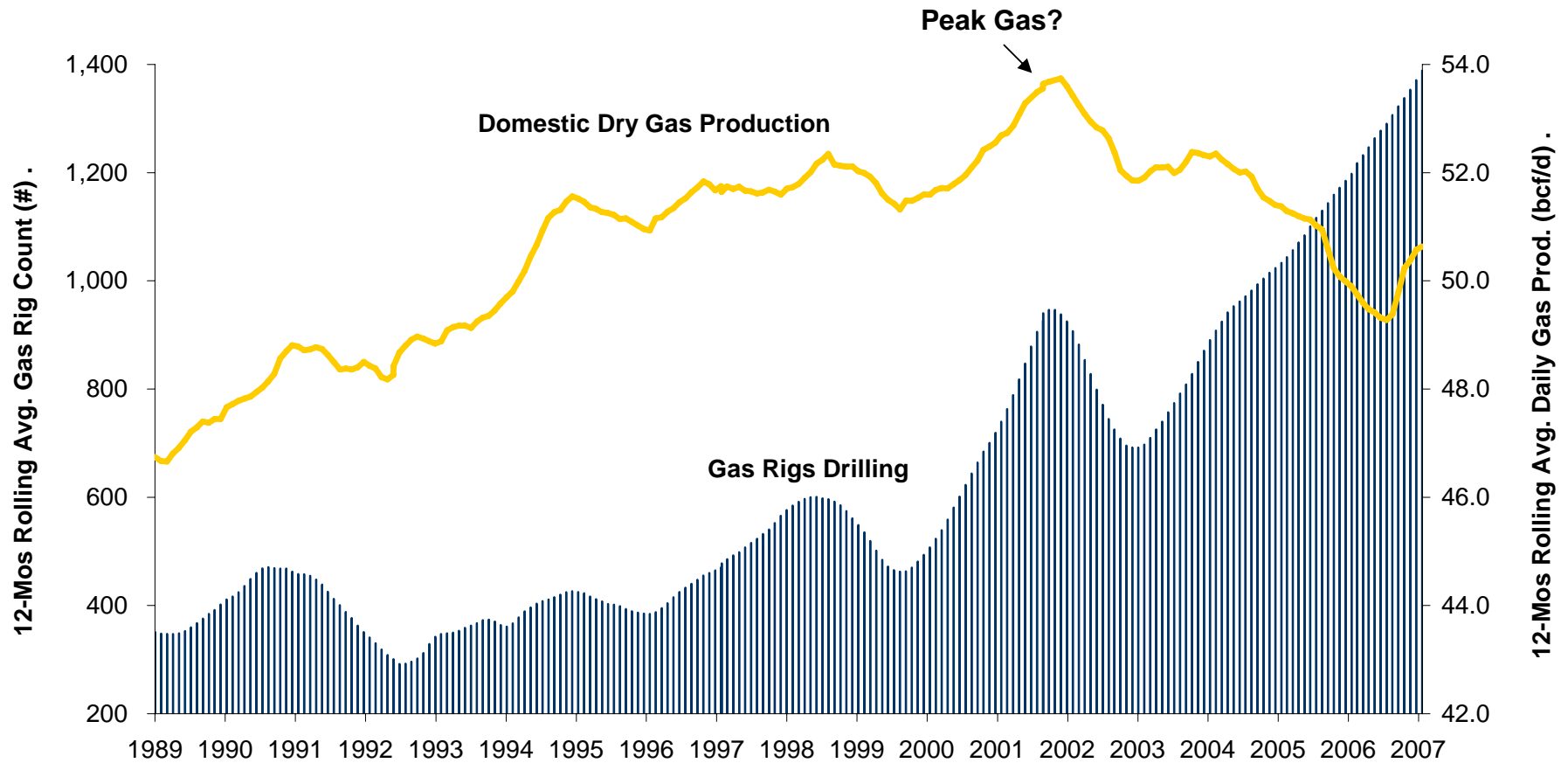


Source Robert L.
Hirsch of:



Peak Gas?

Perspective on Drilling Activity

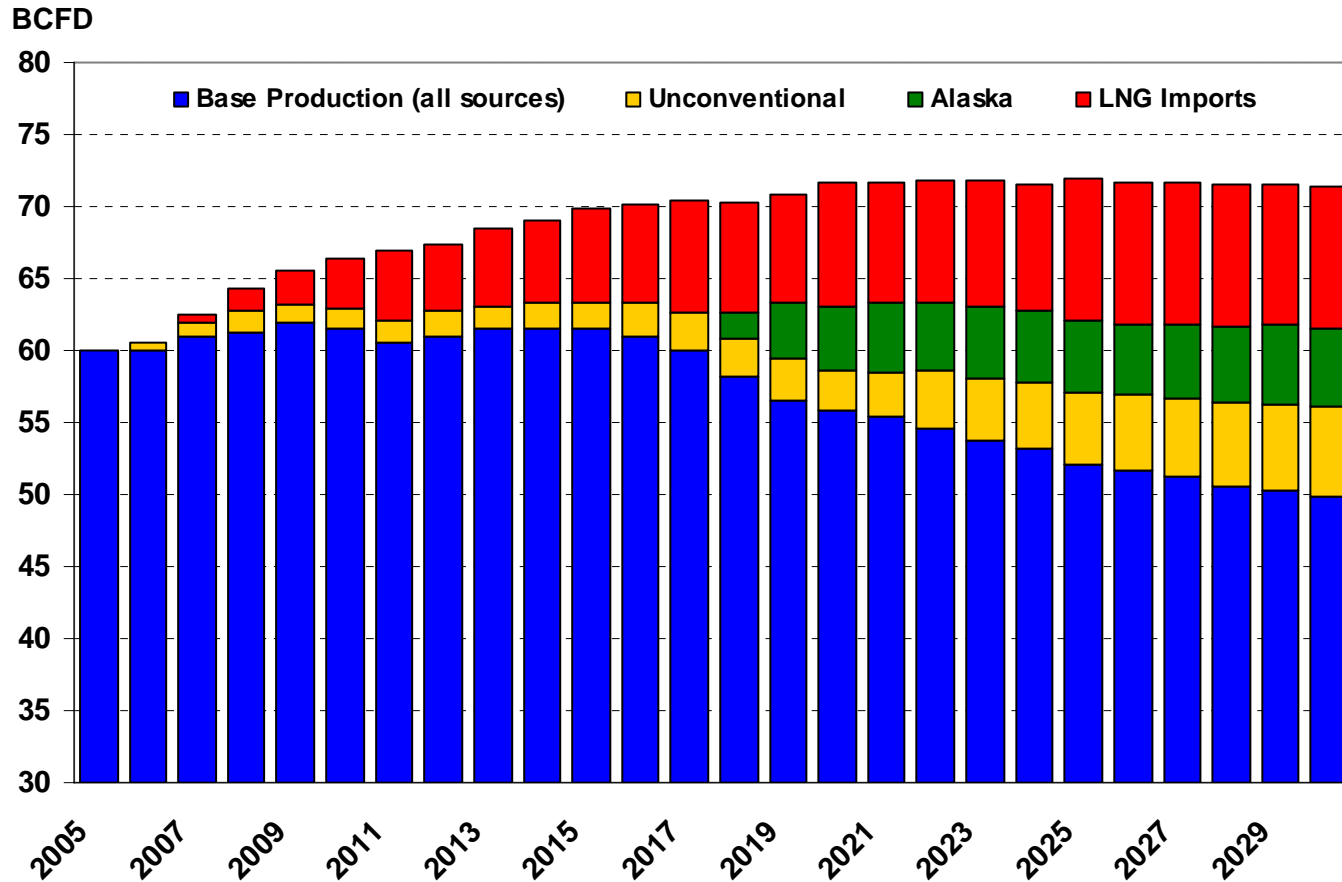


Gas production response to much increased drilling activity is still lagging.



Peak Gas?

Components of U.S. Gas Supply



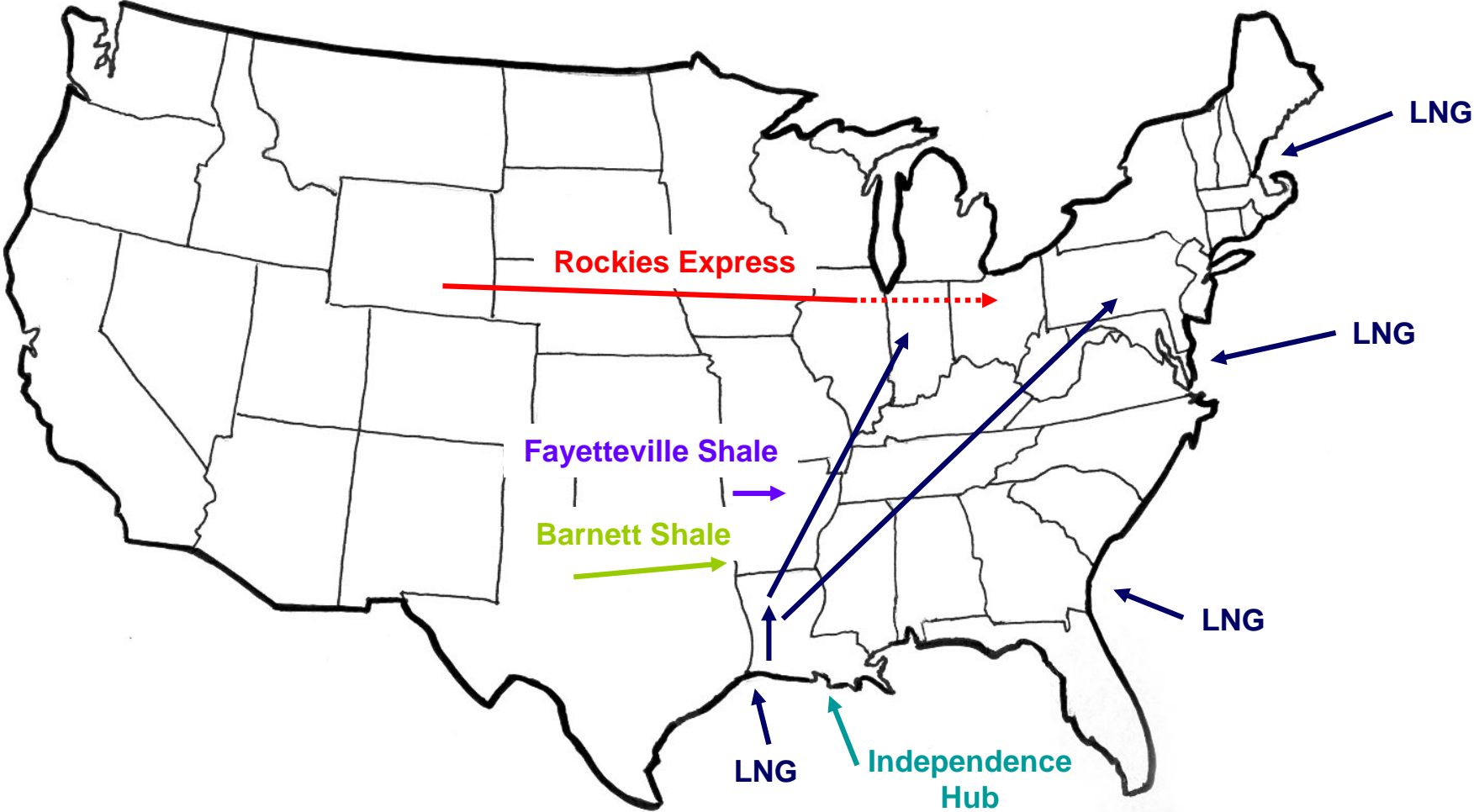
Conclusion: U.S. gas supply is dependent on a combination of growing unconventional, LNG, and ultimately Alaskan production.



Source: EIA AEO 2007; (from Petro-Canada February 6, 2007 presentation).

Peak Gas

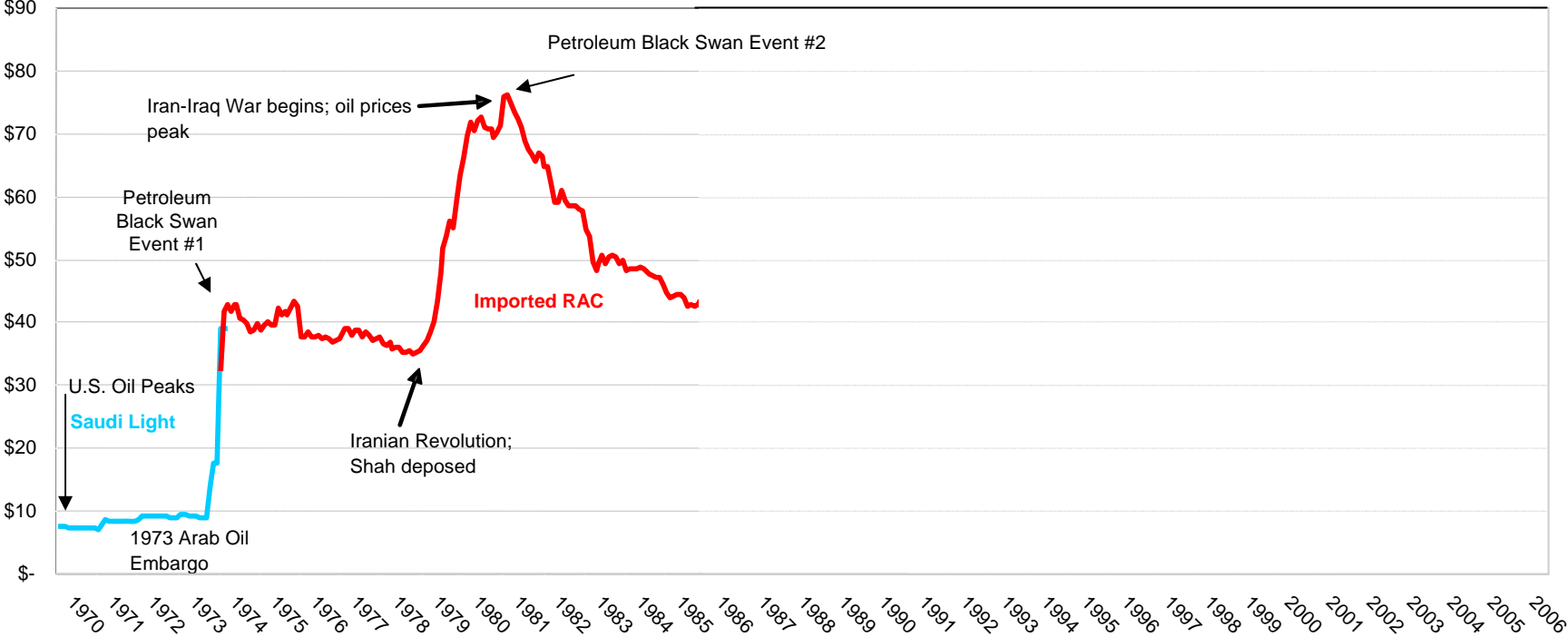
The Evolving U.S. Natural Gas Grid



Petroleum Black Swan Events



Major Events and Real World Oil Prices, 1970-2006
 (Prices Adjusted by Quarterly GDP deflator, 2Q 2005 Dollars)



Conclusion: In a broad sense: "past is likely to be prologue."



Concluding Observations

Likely Trends

- Proscribed opportunities and project access especially in the international arena point to the looming reality of “Practical Peak Oil”.
- Rising F&D costs reinforce the foregoing trend.
- While possibly slightly lagging peak oil, the prospect of “Peak Gas” limits the likelihood of methane supplies as a meaningful mitigant to liquid supply constraints.
- As “peak petroleum” unfolds, historical economic behavioral patterns will have limited predictive utility.
- The prospect of a series of petroleum driven “Black Swan” events is increasingly likely.
- In sum, energy issues are likely to remain at center stage for the balance of this decade and well into the next with significant adverse implication for U.S. National and Economic security.



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