

Natural Gas

Tuesday, May 1, 2012; 4:00 PM – 5:15 PM

Moderator:

Joel Kurtzman, Senior Fellow and Executive Director of the Center for Accelerating Energy Solutions, Milken Institute

Speakers:

Ralph Eads, Chairman, Energy Investment Banking, Jefferies & Co. Inc.

Rick Grafton, CEO and Chief Investment Office, Grafton Asset Management

Shaia Hosseinzadeh, Principal, WL Ross & Co. LLC

Alex Szewczyk, Analyst, BP Capital

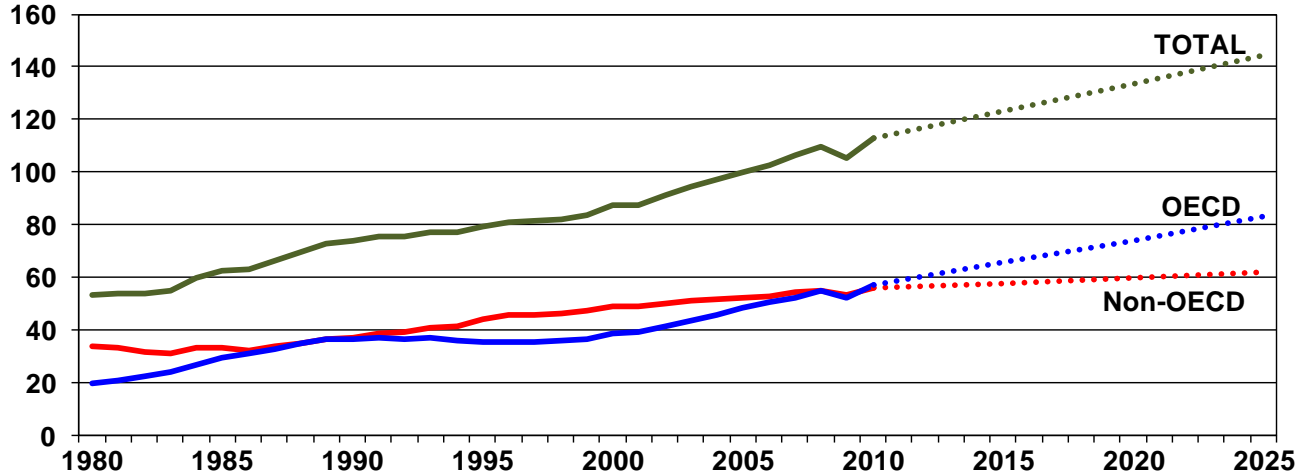
Global natural gas consumption on the rise



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Non-OECD nations will lead the way

Trillion Cubic Feet



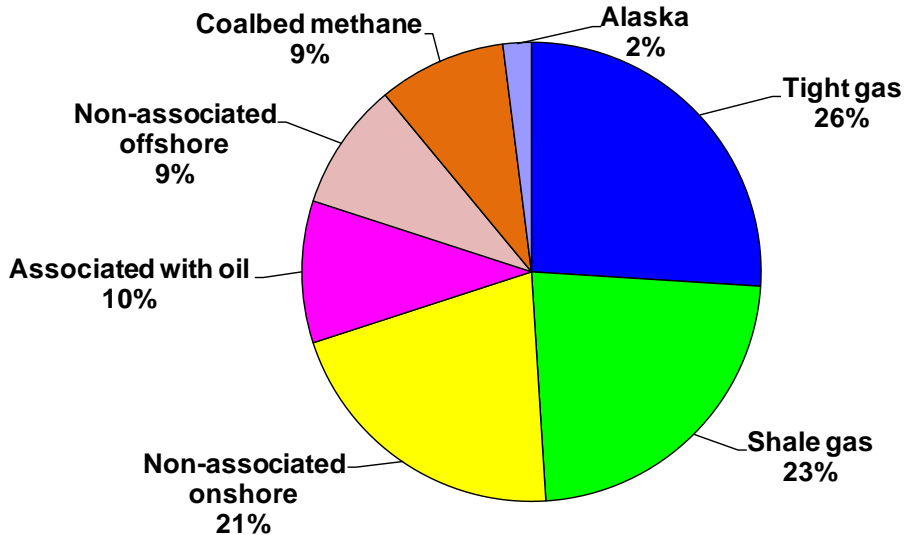
Source: U.S Energy Information Administration.

*Projection begins from 2010.

U.S. natural gas withdrawals

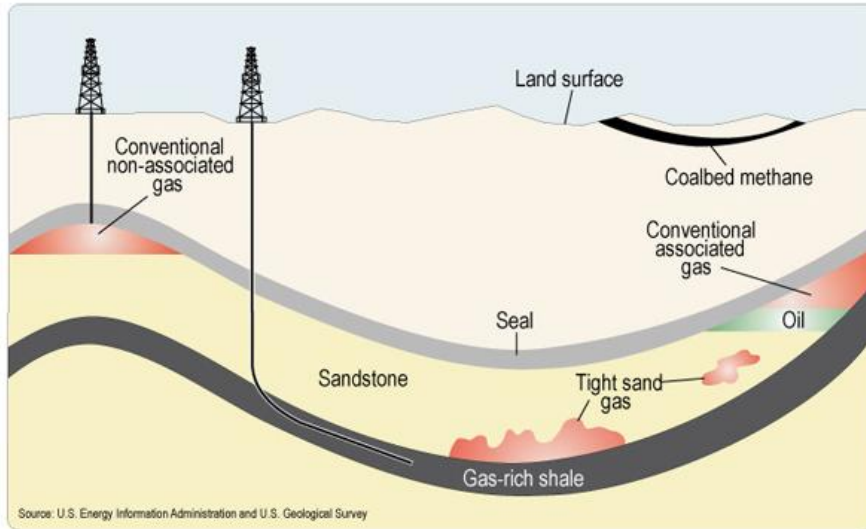


Shale gas withdrawals increased by 95 percent between '09 – '10



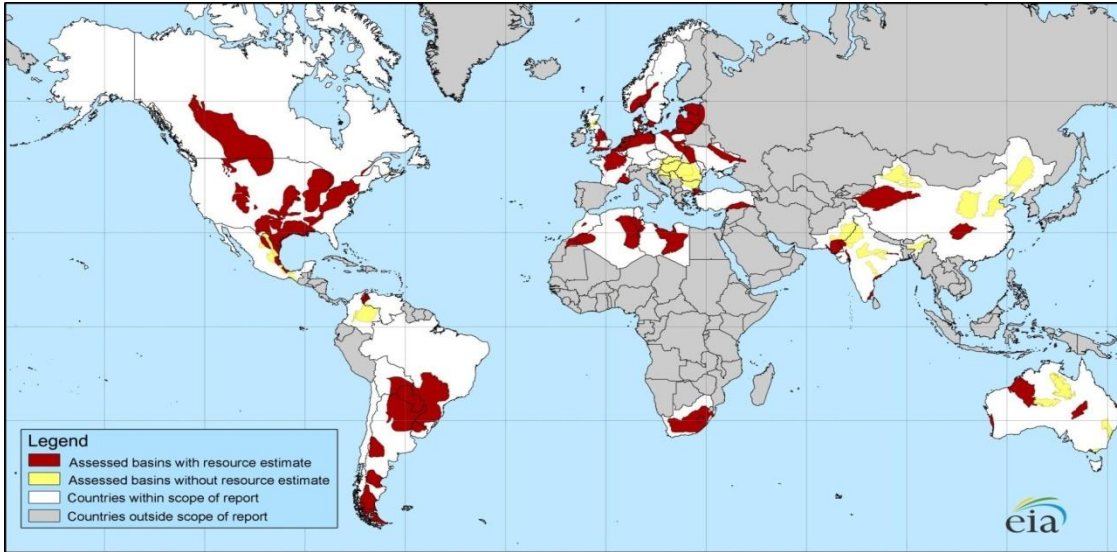
Source: U.S. Energy Information Administration.

Where does shale gas come from?



Source: U.S Energy Information Administration.

Major shale basins around the world



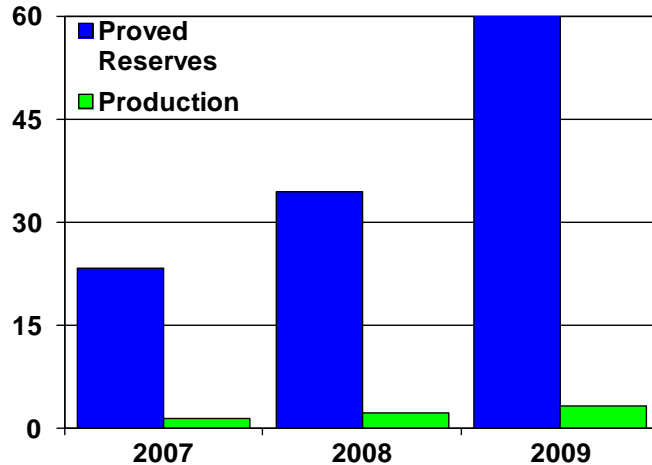
Source: U.S Energy Information Administration.

Discovery of wells and low-cost extraction methods increase shale gas production



U.S. domestic shale gas production

Trillion cubic feet



- Shale gas makes up 23 percent of current U.S. production
- EIA estimates that production could double or triple over the next 25 years

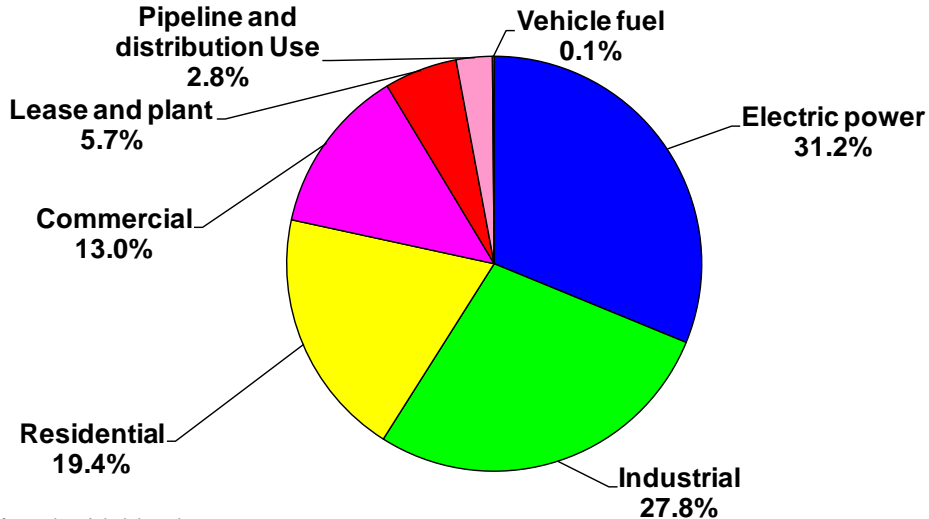
Source: U.S Energy Information Administration.

Electric power, residential and commercial heating consume the most natural gas

U.S. natural gas consumption by end use, 2011



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Source: U.S. Energy Information Administration.

Increase in supply, shale gas production, and a mild winter have contributed to current low prices

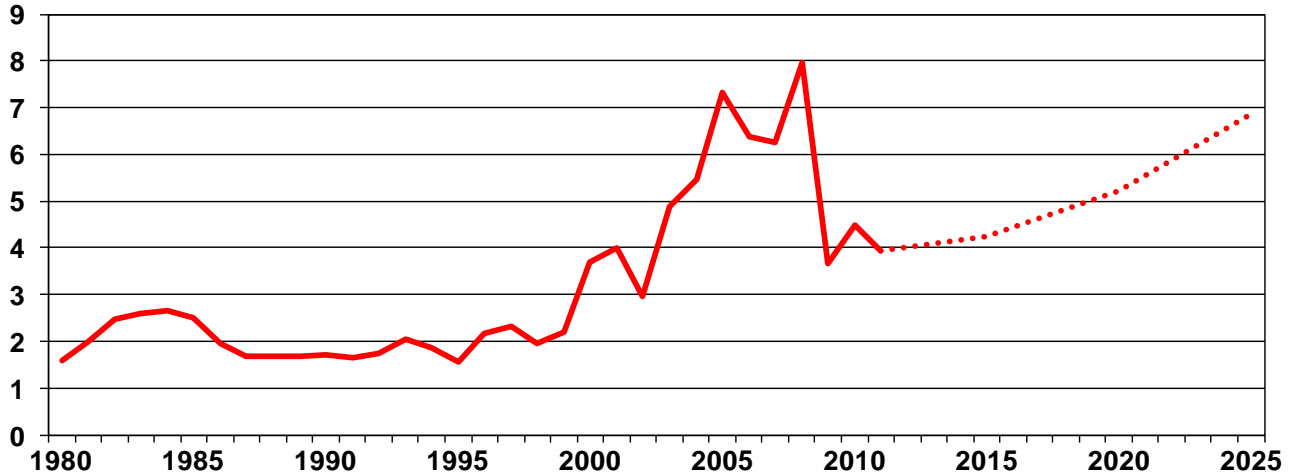


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U.S. natural gas wellhead prices

US\$ per thousand cubic feet

.....Projected



Source: U.S Energy Information Administration.

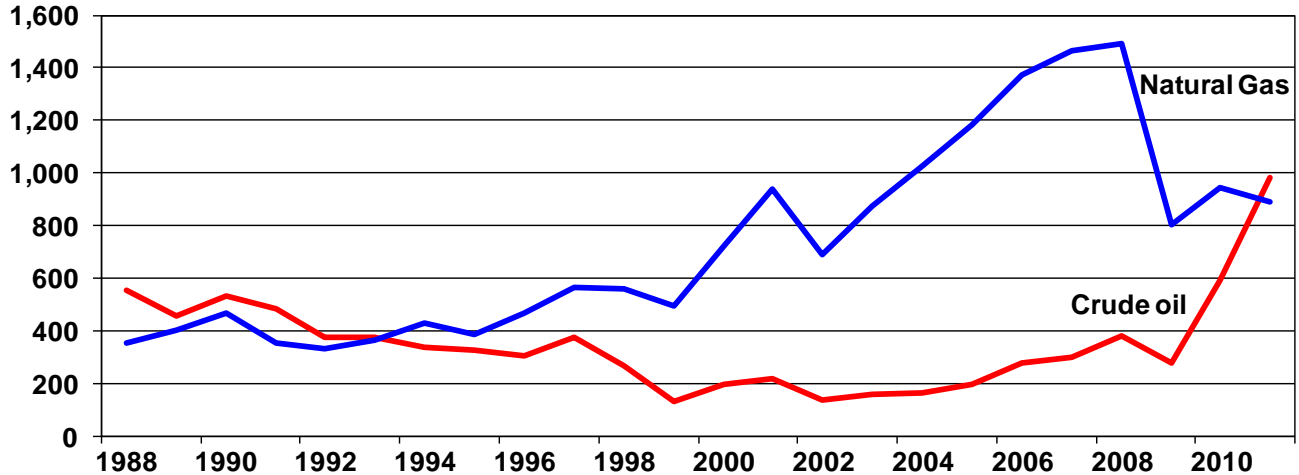
Operational natural gas rigs have surpassed crude oil rigs



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U.S. rotary rigs in operation

Number of rigs



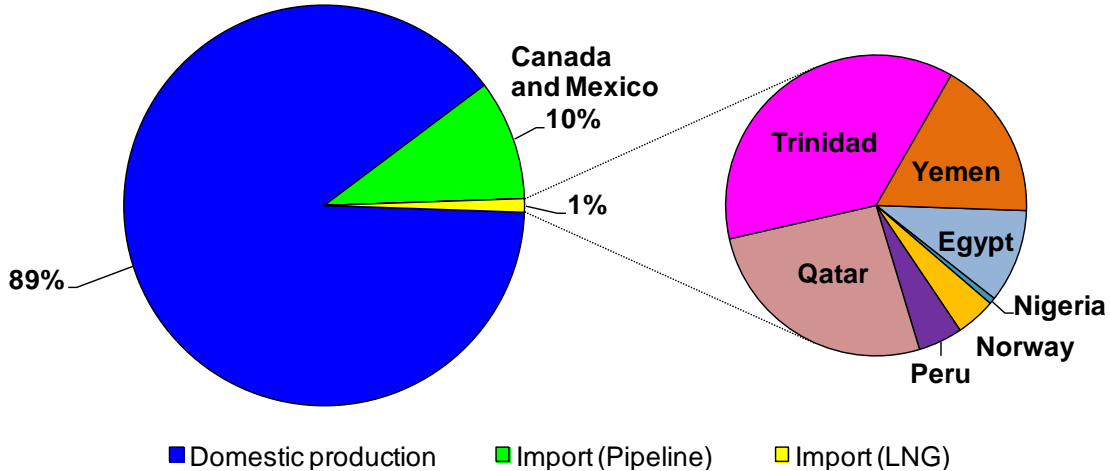
Source: U.S. Energy Information Administration.

Natural gas production is supplied mostly by domestic reserves



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U.S. natural gas sources, 2011



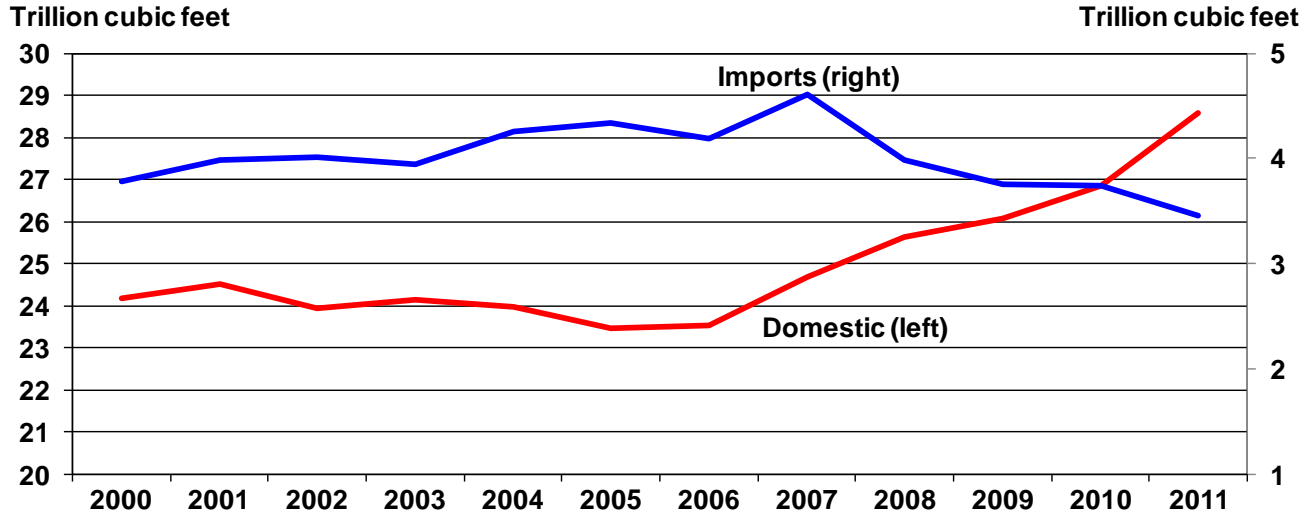
Source: U.S Energy Information Administration.

Discovery of domestic natural gas reserves is reducing import volume



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Import vs. domestic production



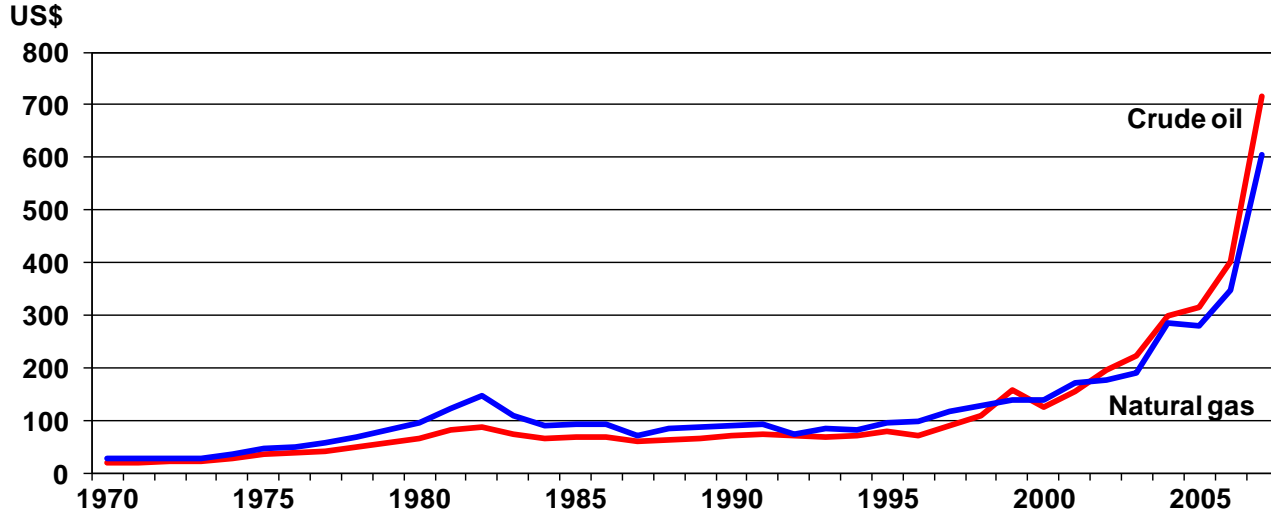
Source: U.S Energy Information Administration.

Crude oil drilling costs remain higher than natural gas



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Cost of drilling per foot



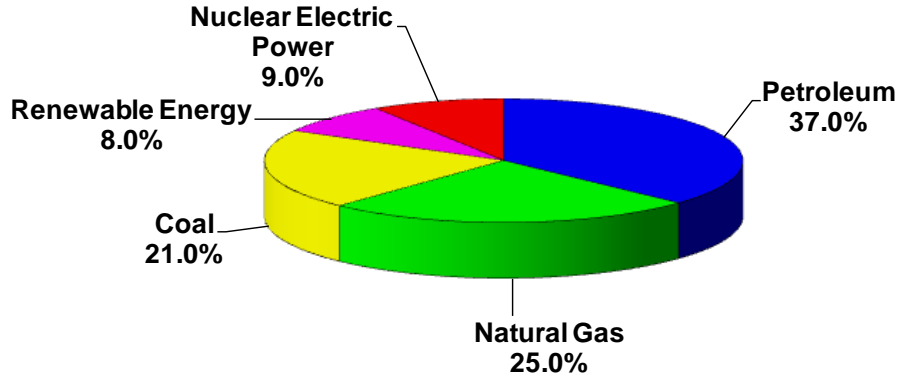
Source: U.S Energy Information Administration.

How is America powered?

Primary energy sources in the U.S., 2010



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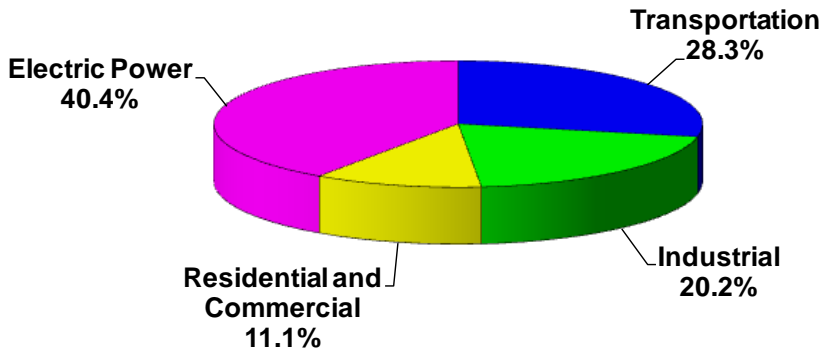
Source: U.S Energy Information Administration.

Electric power and transportation consume the most natural gas



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Primary consumers of energy by sector, U.S., 2010



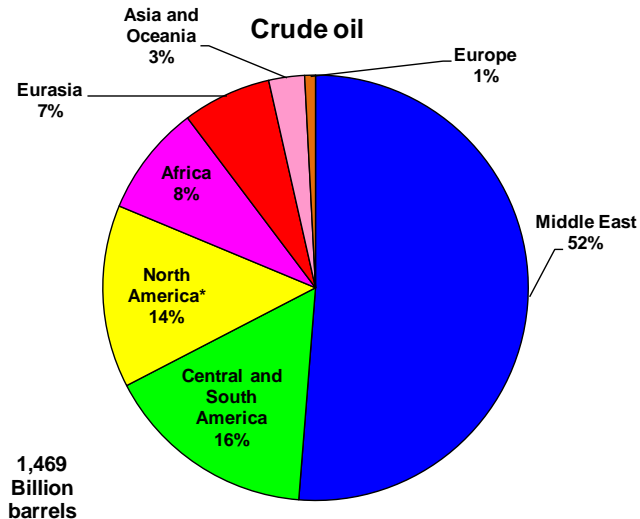
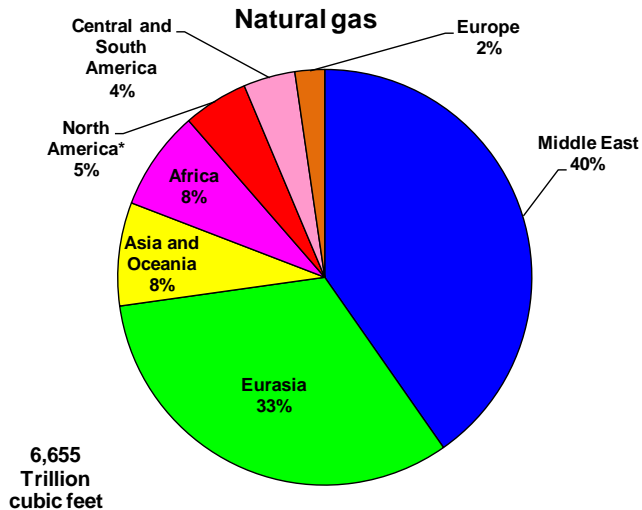
Source: U.S Energy Information Administration.

Natural gas and crude oil reserves global make-up



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By geographic region, 2011



Source: U.S Energy Information Administration.

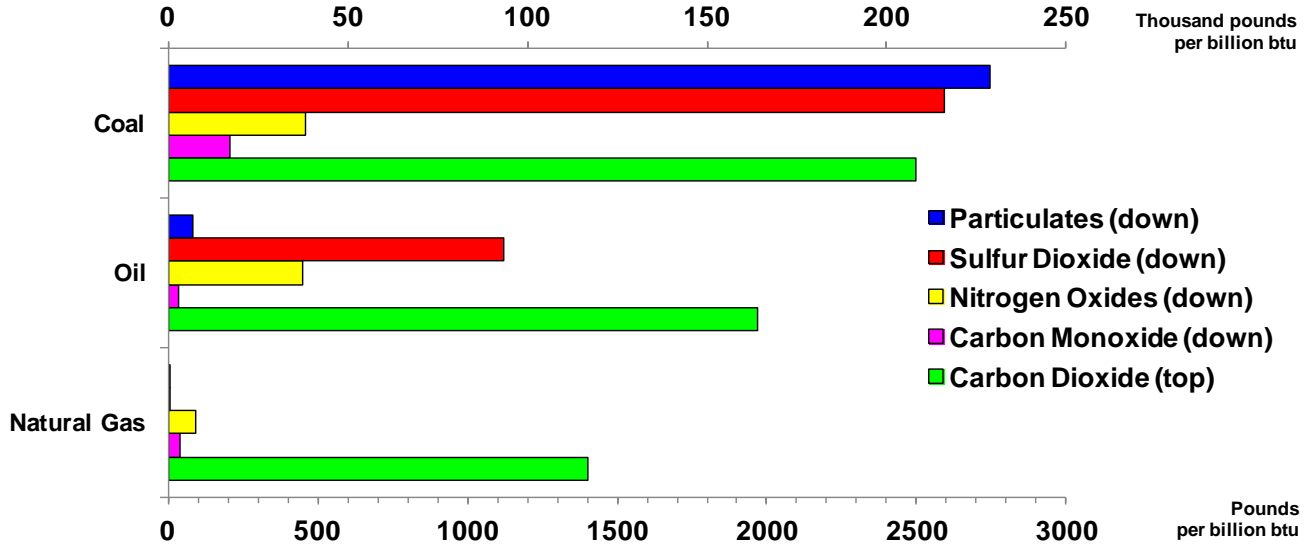
*Does not include Alaska

Natural gas is the least polluting fossil fuel



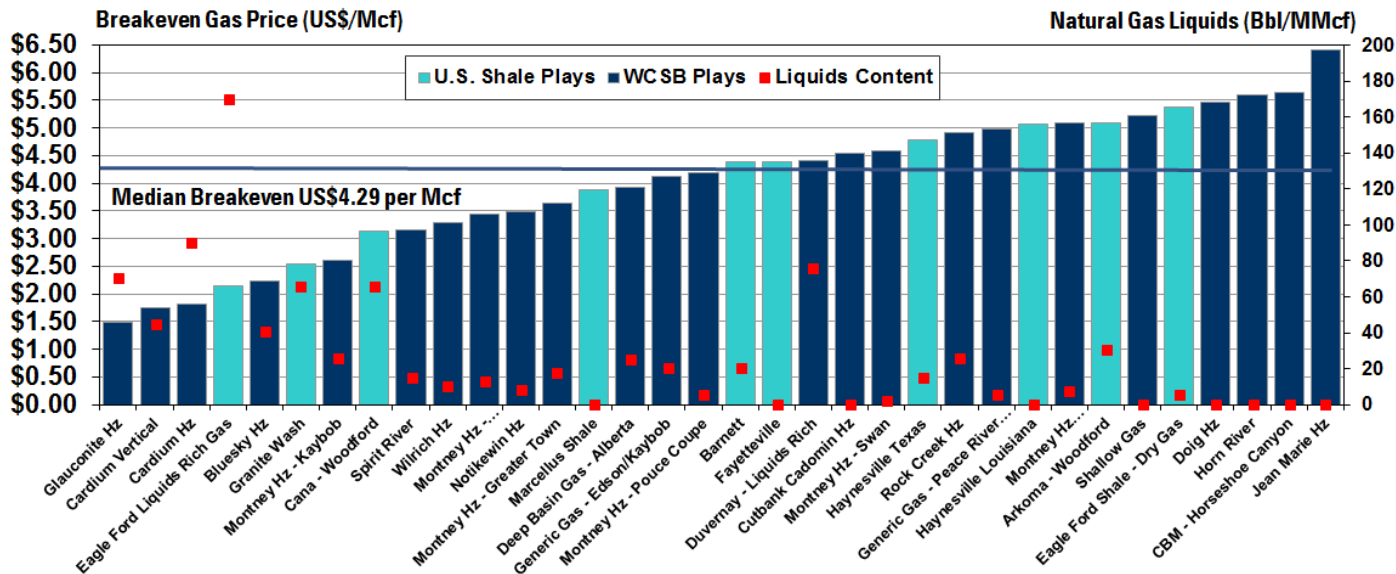
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Pollutant breakdown of the top fossil fuels



Source: U.S Energy Information Administration.

North American Natural Gas Play Economics

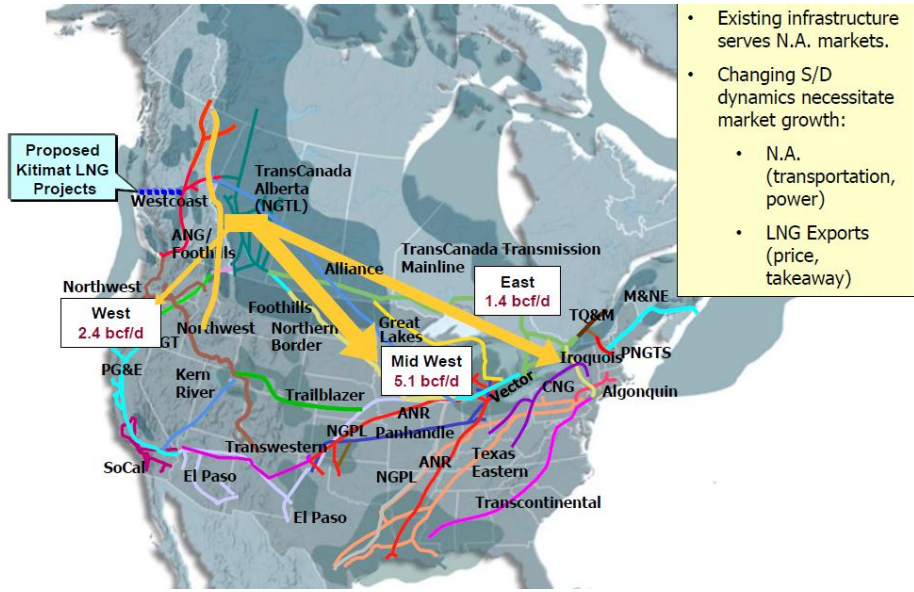


Source: Peters & Co.

Note: Limited estimates based on 10% discount rate and current strip prices.

North America Natural Gas Pipelines

2011 Canadian Exports to the United States



Market Environment

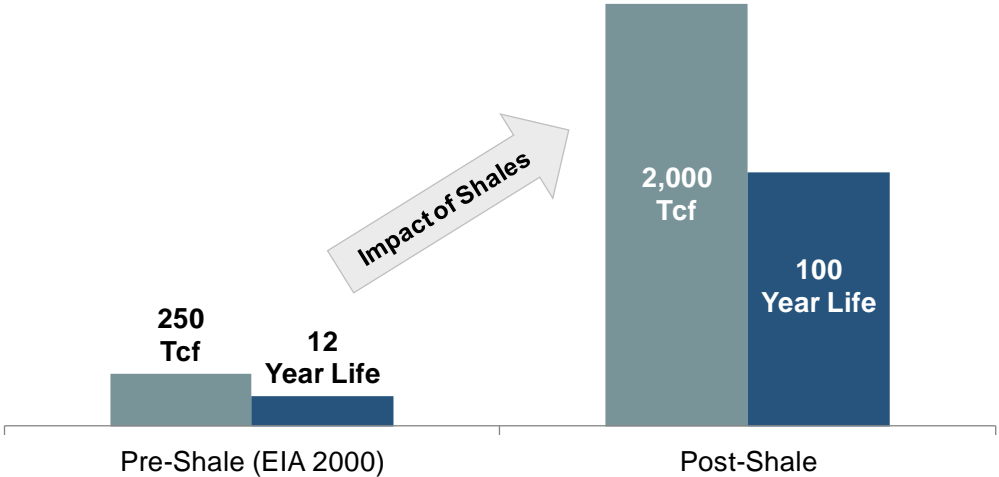


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- The emergence of unconventional plays is a “game changer” for the energy industry
 - Very large resources
 - Little technical risk
 - Technological upside
- Unconventional activity likely to be concentrated in North America
- Huge opportunity as supply of assets exceed available capital
 - \$35 B / year of external capital needed
 - Project returns exceed 20%
 - Public equity valuations are cheap
- The key challenge today is the ability to develop these assets in a timely manner

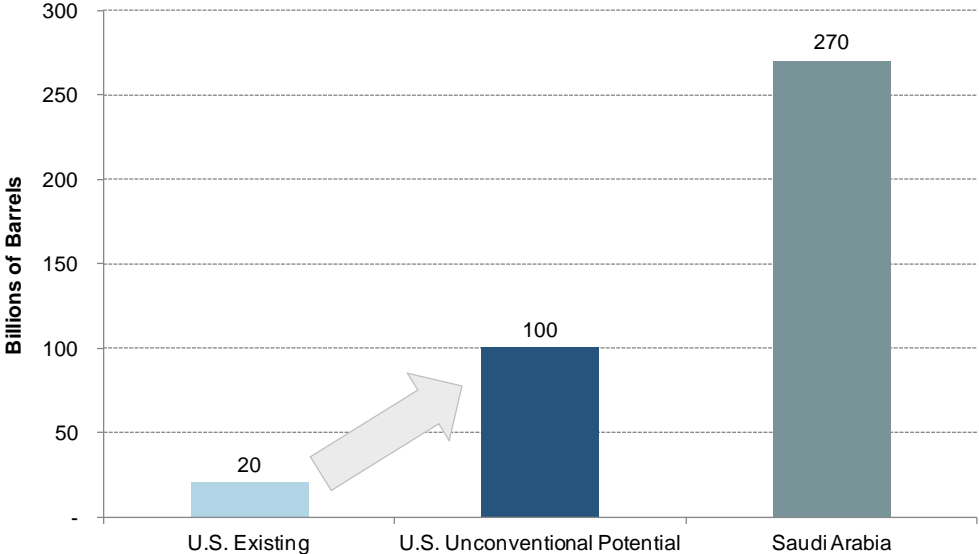
Unconventional plays represent an unprecedented resource boom

U.S. Natural Gas Reserves / Reserve Life



Natural gas can now be viewed as a long-term energy solution

U.S. Oil / Liquids Reserves



Increase in U.S. liquids production will reduce imports

Commodity Price Backdrop



Oil:

- OPEC (especially Saudis) holds a strong hand
- Global excess deliverability at all-time low
- Price movement driven by demand change and/or supply disruption

North American Natural Gas:

- Huge resource discovered
- Excess drilling plus warm weather have created oversupply
- Rigs migrating to liquids plays; oversupply will abate
- Long-term price should trend to marginal cost, which is \$5-\$6 / Mcf
- Demand growing as natural gas displaces coal and industrial demand builds
- LNG exports are key future variable

Key M&A Themes

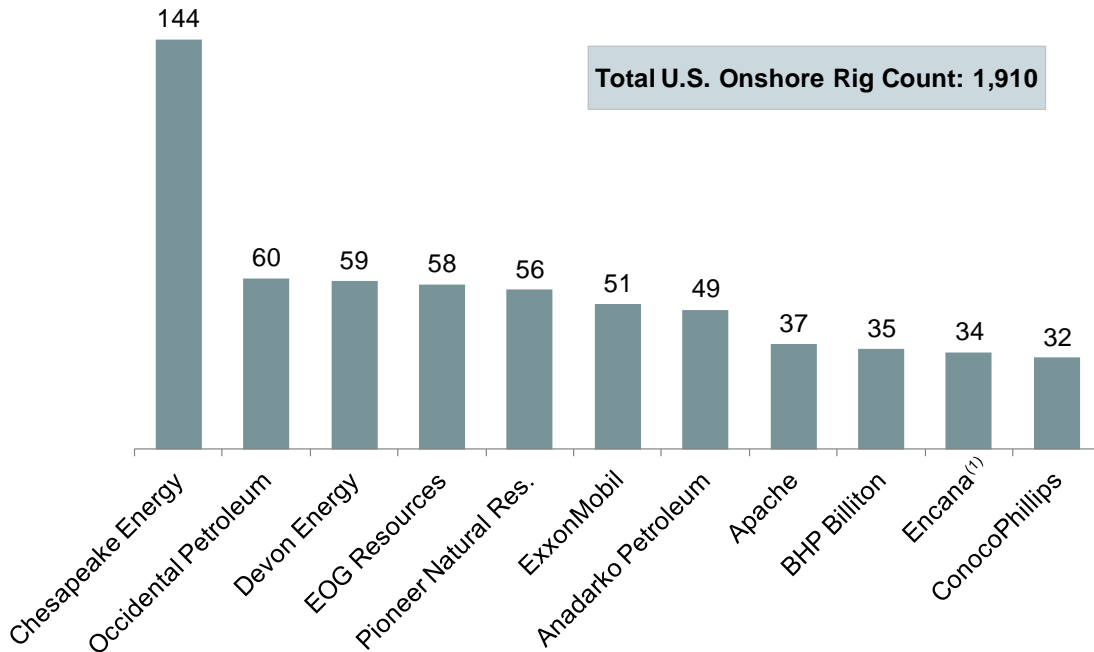
- Resource boom has created a wealth of opportunities
- Operating capability is a key constraint
- Continuing need for capital among smaller companies is driving activity
 - JVs, asset sales, company sales
 - Limited equity issuance given low valuations
- Property level returns for liquids plays are excellent
- Gas plays uneconomic at the current price
- Few natural gas assets are being sold except those related to planned LNG



Top Operators in the U.S. by Onshore Rig Count



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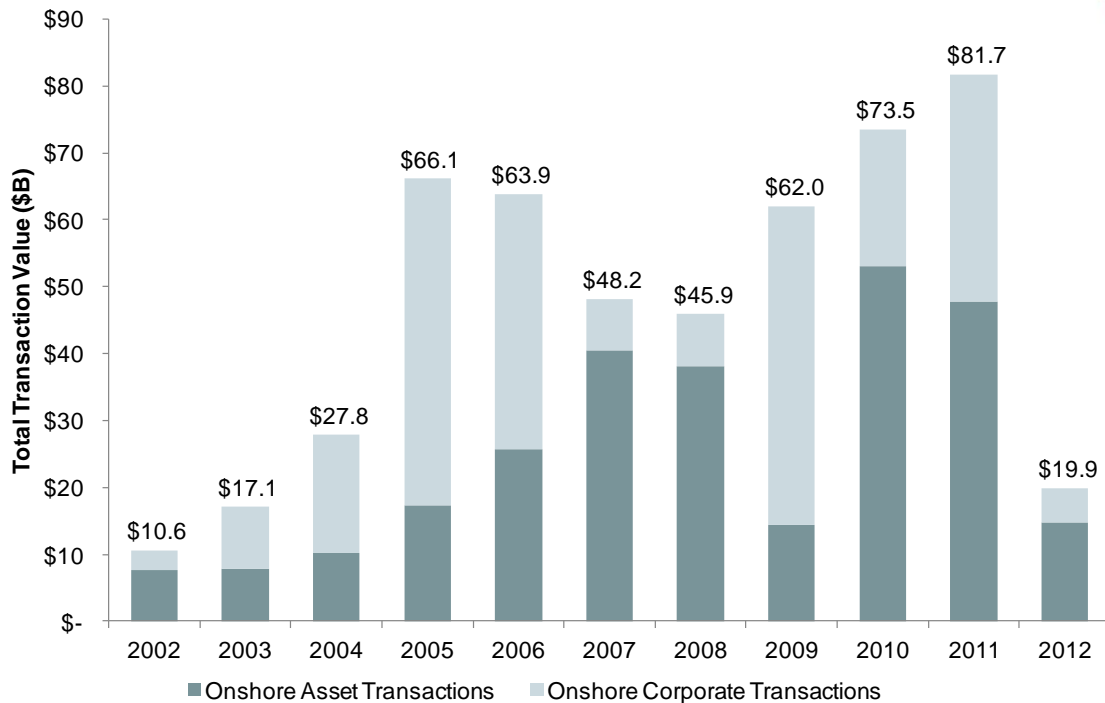
Source: Operator rig counts per *The Land Rig Newsletter Biweekly Report*. U.S. onshore rig count per Baker Hughes.

(1) Encana currently employs 19 U.S. onshore rigs and 15 Canadian onshore rigs.

U.S. Onshore M&A Summary

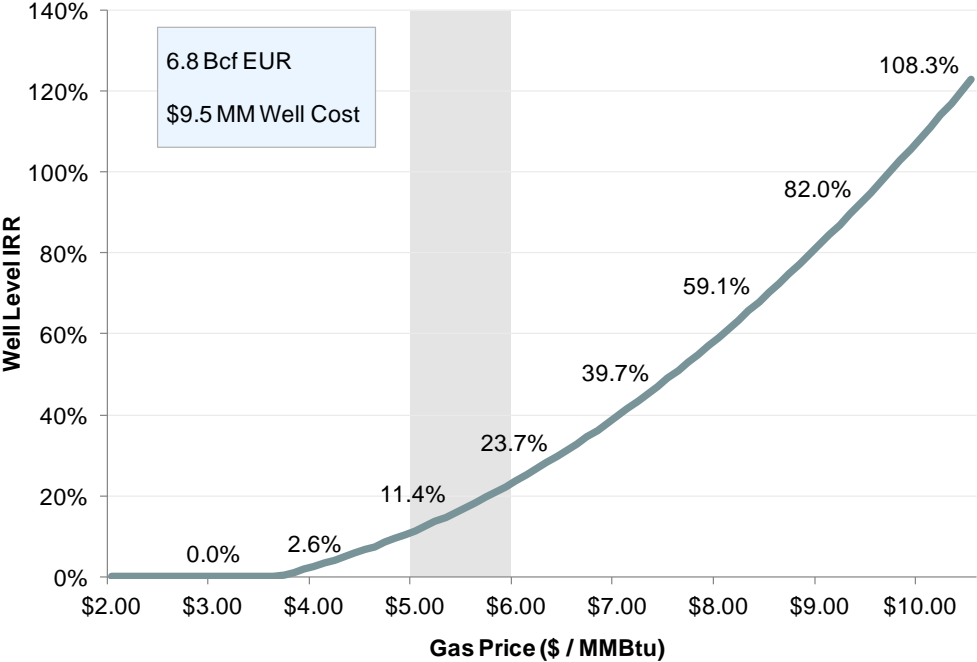


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Source: IHS Herold. U.S. onshore asset and corporate deals since 2002 with disclosed transaction values.

Haynesville Shale Drilling Economics



Source: Jefferies internal estimates.

Jefferies' Role

- Since 2007, 41 deals for \$112 billion in total value for approximately 60% sell-side market share
- Advised on 11 of the 15 largest U.S. onshore transactions since 2008
- Pioneered the Joint Venture transaction model
- Have completed deals involving 15 of the 20 largest oil companies in the world
- Have brought several new entrants to the North American energy market, including Chinese National Oil Company, Korean National Oil Company, Sasol and Gas Authority of India



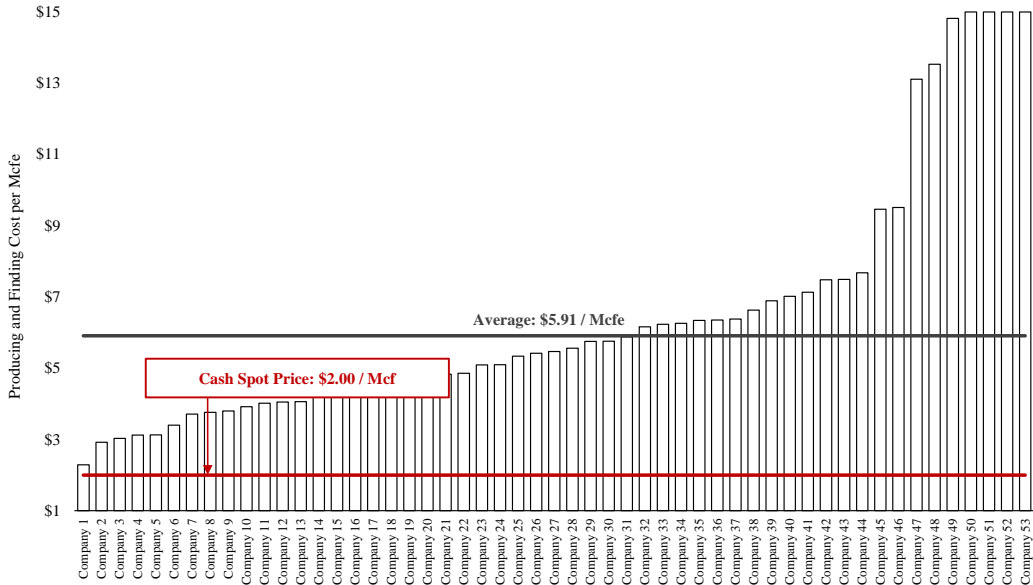
Industry Full Cycle Development Costs

Low Prices Weigh Heavily on Production Economics



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Unit Producing and Finding Costs

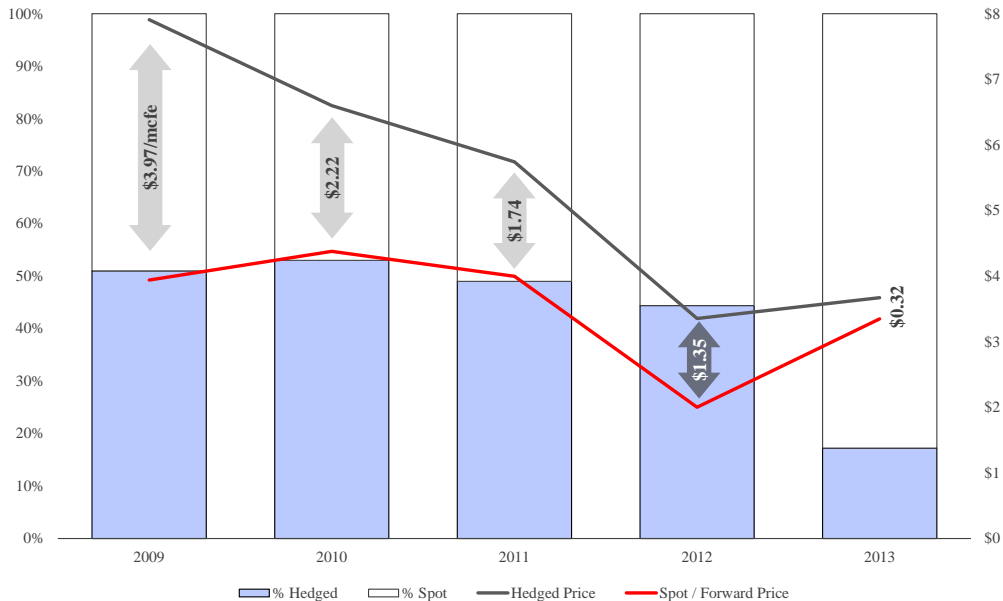


Subsidy Effect from Legacy Hedges Now Rolling Off

Gas Price Realizations are Dramatically Lower



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Note: Average reflects US dry-gas producers including CHK, COG, CRK, DVN, GDP, NFX, RRC, SWN, UPL and XCO.
Source: WL Ross analysis; public company SEC filings; Wall Street analyst research.

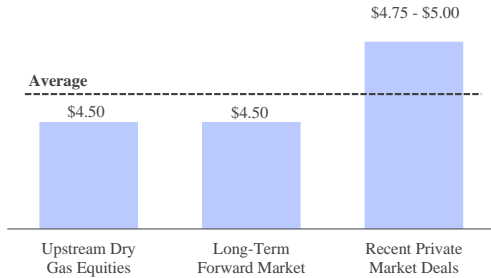
Comparison of Gas Price Expectations

Financial Markets are Disjointed from the Physical Markets

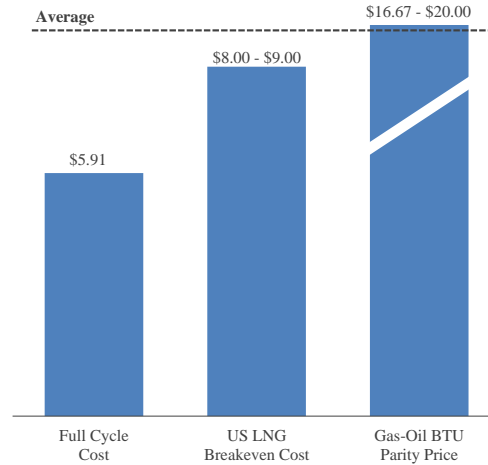


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Financial Market



Physical Market



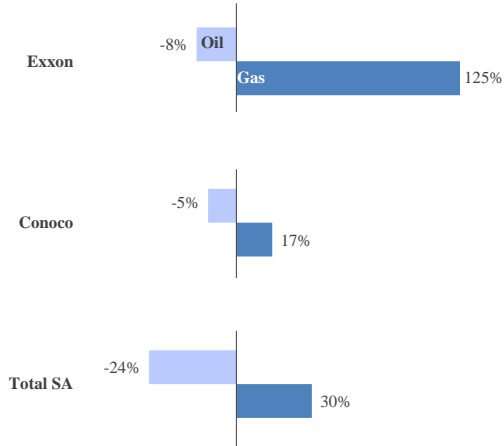
The Majors are Shifting Towards Natural Gas

Changing Landscape Makes Independents Increasingly Attractive Targets



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Production Growth (2005-2011)



Top 10 Independents (% US Gas Production)

