

How to Survive and Thrive in Volatile Energy Industry Finance

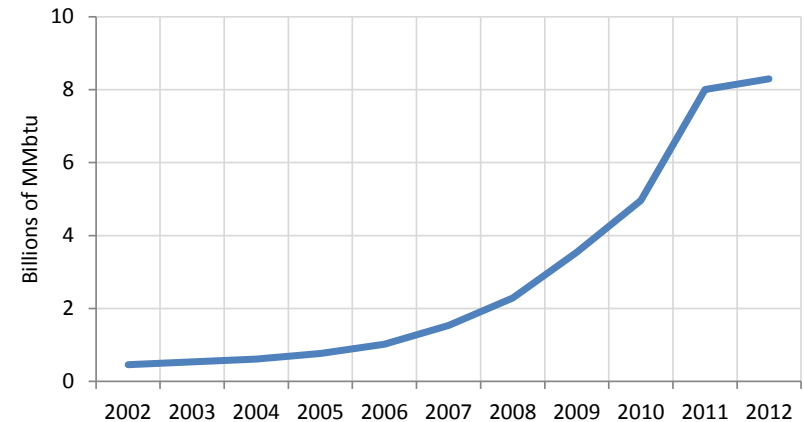
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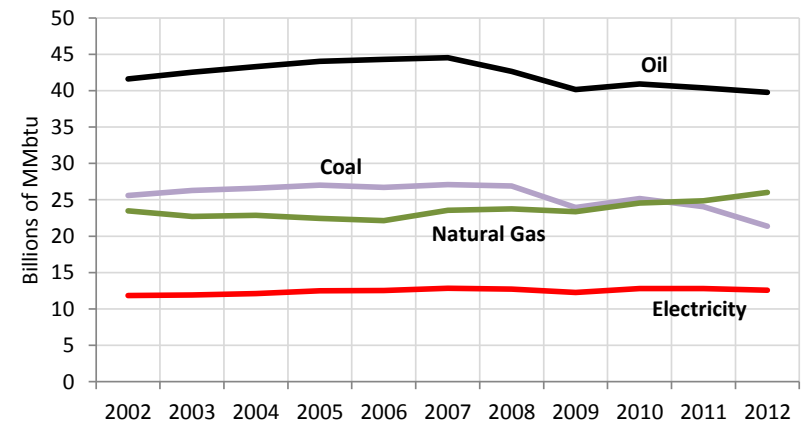
Market Outlook: Where are we now?

- 1) Enormous growth in shale gas production
- 2) Stagnant energy demand
- 3) Heightened environmental concerns
 - a) Threats from actual damage (oil spills, gas leaks, coal mines, CO₂, etc)
 - b) Threats from competitors (natural gas was a “bridge,” now it’s a threat)
 - c) Support for alternative energy

Shale Natural Gas Production



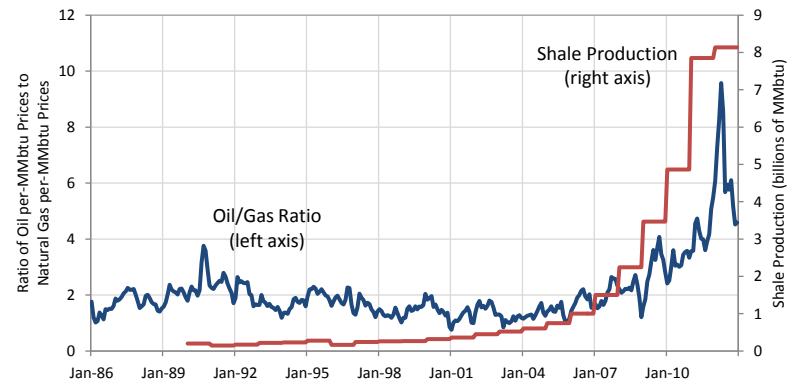
Energy Consumption



Key Trends: Oil & Gas Market Dynamics

- Boundaries

- Powerful forces operate at the boundaries of markets
- Why do differences exist/persist between markets?
- Technological or legal boundaries?



- Oil vs Natural Gas, Wet vs Dry Plays

- NGLs as an incentive to produce even when NG economics are unfavorable

- Global vs Local Markets

- LNG exports have value



Key Trends: Demand

- Demand and determination of economic useful life for equipment
 - “Lack of demand”-induced retirements
 - Examples: Kewaunee, Hatfield’s Ferry power plants
 - Is the lack of demand due to a reduction in aggregate demand or to factors unique to a technology or industry?
 - Lack of demand vs lack of demand *for coal*
 - Lack of demand vs *forced* lack of demand *due to regulation*
 - Does Hatfield’s Ferry tell us more about coal or about capacity market structure or about demand for electricity?
- Tension between natural and “artificial” demand
 - “Economic” demand vs. “incentivized” demand
 - Impact on equipment residual values

Key Trends: Environmental Issues

- “Headline” risk: perceived vs actual risk

- E.g., pipelines vs rail transport

- Fracking regulation

- Federal vs state regulation

- Wider disclosure of chemicals (“mud”)

- Water management plans for surface fluids

- Wastewater disposal requirements

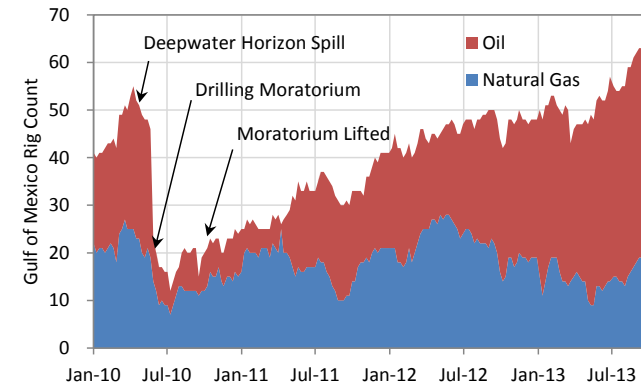
- Recovery of Gulf E&P activity

- Alternative Energy

- EPA’s Alphabet Soup (MATS, CSAPR/CAIR, 316(b), CCRs, CO₂)

- Obama administration’s “Climate Action Plan”

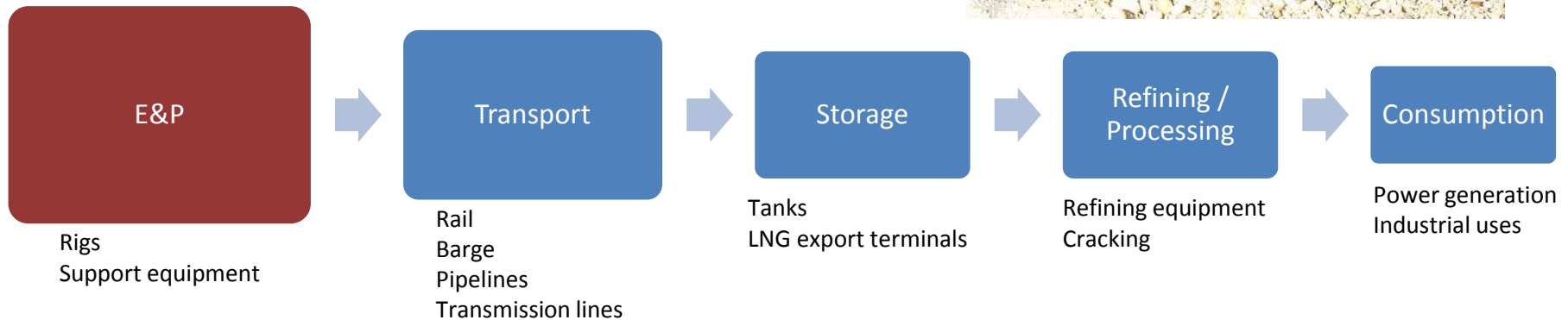
- Continued support for wind and solar, with costs rapidly approaching grid parity in many areas



Where are the opportunities now?

- The shale “pig” in the energy “python”

(not to scale!)



- Demand needs to catch up. E&P is not an intermediate-term growth area without demand or export growth; more production is occurring with fewer rigs.
- Transport is interesting (minimizing links between source-sink captures differentials); the existing infrastructure was designed for different flow patterns.
- End users (demand pull vs supply push; demand creates a virtuous cycle).

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Appraisal & Valuation

- Energy Market Forecasting
- Fair Market Value Appraisal
- Equipment Appraisal
- Residual Value Determination
- Liquidation Value Determination
- Tax Analysis/Support
 - Alternative Energy Property Allocations
 - Property Tax Valuation

Consulting Engineering Support

- Independent Engineer Analysis
- Construction Monitoring
- Plant Operation and Maintenance
- Equipment and Loan Collateral Analysis
- Feasibility Studies
- Regulatory Review

Market Analysis and Forecasting

- Commodity Price Forecasts
- Electric Market Studies/Forecasts
- Production Forecasts
- Simulation Analysis

Decision Analysis

- Merchant Dispatch Modeling
- Statistical Analysis of Asset Performance
- Project Support Development
- Hedging Strategy Analysis
- Analysis of Capital Cost Uncertainty
- Acquisition and Divestiture Advisory
- Expert Witness Testimony/Litigation Support

Asset Management

- Acquisition & Divestiture Support and Sale Advisory
- Operations Efficiency Analysis
- Outage Management
- On-Site Operations and Maintenance
- Environmental Compliance Review
- Permitting, Licensing, and Accounting
- Contracts Management
- Portfolio Management

Regulatory and Litigation Support

- Energy Litigation Support
- Regulatory Proceeding Support
- Valuation Expert Witness Services



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