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Key Pieces of the Gas-to-Power Puzzle for North America

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Outline

- Introduction
- Gas and electric power market interactions
- Important regulatory developments
- Implications

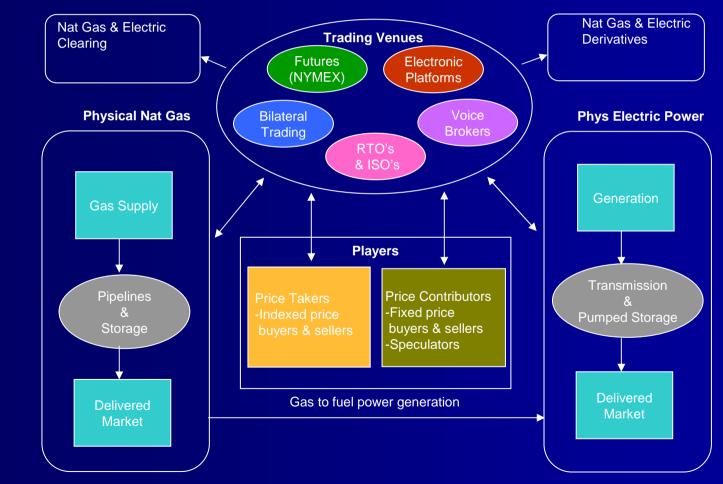
Markets

The "Wonder Years" for Gas-Fired Power are over.

- Confluence of factors allowed natural gas to dominate new power generation through 2005.
 - Low P_{NG}
 - Capital cost/lead time/environmental advantages
 - Competition shifted investment decisions to Merchant Generators
- Recently,
 - High P_{NG}
 - NG availability concerns
 - Merchant Generator financial difficulties
 - Utilities return to generation
 - Some political opposition to gas-fired power

Markets

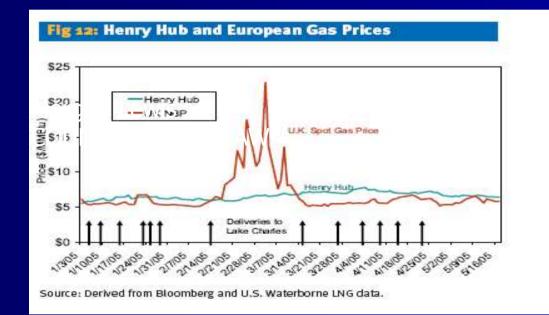
The relevant energy market interactions are complex.



Source: FERC-OMTR&OMOI

<u>Markets</u>

North American and European Power and Gas Markets Now Interact Occasionally through LNG.



Regulation

As always for natural gas and power, regulatory policy matters significantly.

- Federal
 - FERC
 - -- markets
 - -- reliability
 - Environmental
 - -- fossil
 - -- nuclear
- Other
 - NERC/ERO: self regulatory organization
 - NAESB (SRO)
 - Rail rates
 - Political issues

- State PUCs
 - Fuel policies
 - Market policies
 - -- generation investment
 - -- retail
 - -- renewables

Implications

Politicians are demanding intense scrutiny of energy markets.

<u>Scrutiny</u>

- Energy Policy Act of 2005
- State Attorneys General
 - California/New York/Connecticut
 - Midwest coalition
- Senate Democratic Policy Reform Committee Hearing (May 2006) "Manipulation of our natural gas and electricity markets is still an ongoing threat." (witness)

Implications

Politicians are demanding intense scrutiny of energy markets. – cont'd and Beyond

House Government Reform Committee Report

- (May 2006)
 - Rep. T. Davis (R), Chair
 - Congressman Issa (R): "imperative ... take steps to avoid unnecessary reliance on natural gas for electricity generation."

Implications

Natural Gas Industry needs to accept and engage in the New Era.

- Focus on market and customer needs.
- Be pro-active and articulate on regulatory policy.
- Lead the movement to Market Transparency and Integrity Assurance.
- Expect your job to remain interesting.

Attachments

<u>Markets</u>

Role of Natural Gas for Power Varies by Area

SE Power Generation	Gas Power at the Margir
	(2004)
Florida (FRCC)	>90%
Southern Co.	50-70%
Entergy	70-90%
TVA	25-50%
VACAR	25-50%

Source: FERC, SOM, June 2005, citing Platts and CERA, p. 120.

Regulations

FERC has changed its strategy.

- Standard Market Design: dropped
- New emphasis:
 - Power Reliability
 - Infrastructure Investments
 - -- LNG
 - -- pipelines
 - -- power transmission lines
 - Open Access Reform

Regulations

FERC has changed its strategy. - Cont'd

- Enforcement
 - Marketing Oversight and Investigations
 ⇒Enforcement
 - -- New penalty authority (Energy Policy Act of 2005)
- No continental market for power.
 Hybrid conditions will last.
 Market participants may become cautious.

Regulation

Environmental Regulations will determine how coal returns.

Fossil

- SO_x/NO_x
- Carbon
- Mercury (major cost)

<u>Nuclear</u>

- Approvals of nuclear facilities directly affects coal
- Yucca Mountain waste disposal environmental issues affect nuclear.

Regulation

State Regulators are implementing important changes.

- A joint Task Force (NARUC/IOGCC) has recommended
 - Long term planning
 - Long term contracts under certain condition
- Utilities are getting approvals to acquire generation assets.
- Hedging is generally accepted
 - GAO tallies >25 states allow >50% hedging for gas supplies
- Renewable power requirements (20 states)

Self-Regulatory Organizations also affect gas and power.

- After a severe New England cold snap (January 2004), ISO-New England and the gas industry worked to coordinate dispatch and nomination procedures to avoid unnecessary conflicts.
- NERC, as ERO, will have authority for reliability standards compliance.