

# AOBA Utility Committee

## *Energy Price Outlook for 2009*

*With a Deepening Economic Recession Will the  
Downward Spiral in Energy Prices Continue?*

Presented By

**Bruce R. Oliver**

*President, Revilo Hill Associates, Inc.*

# 2008 Energy Pricing in Review

*A Year of Extreme Energy Price Volatility*

*Sharp Rise in Energy Prices Contributed to Nation's  
Economic Slowdown ...*

*Will Dramatic Declines in Energy Prices Stimulate  
Renewed Economic Growth?*

# Changes In Projected 2009 Energy Prices During 2008

	% Increase 1 <sup>st</sup> Half 2008	% Decrease 2 <sup>nd</sup> Half 2008	Net Change
* Crude Oil	56%	-65%	-45%
* Natural Gas	45%	-57%	-27%
* Gasoline	34%	-58%	-43%
* Heating Oil	99%	-67%	-33%
* Electricity	31%	-57%	-29%

# Turmoil in Financial Markets

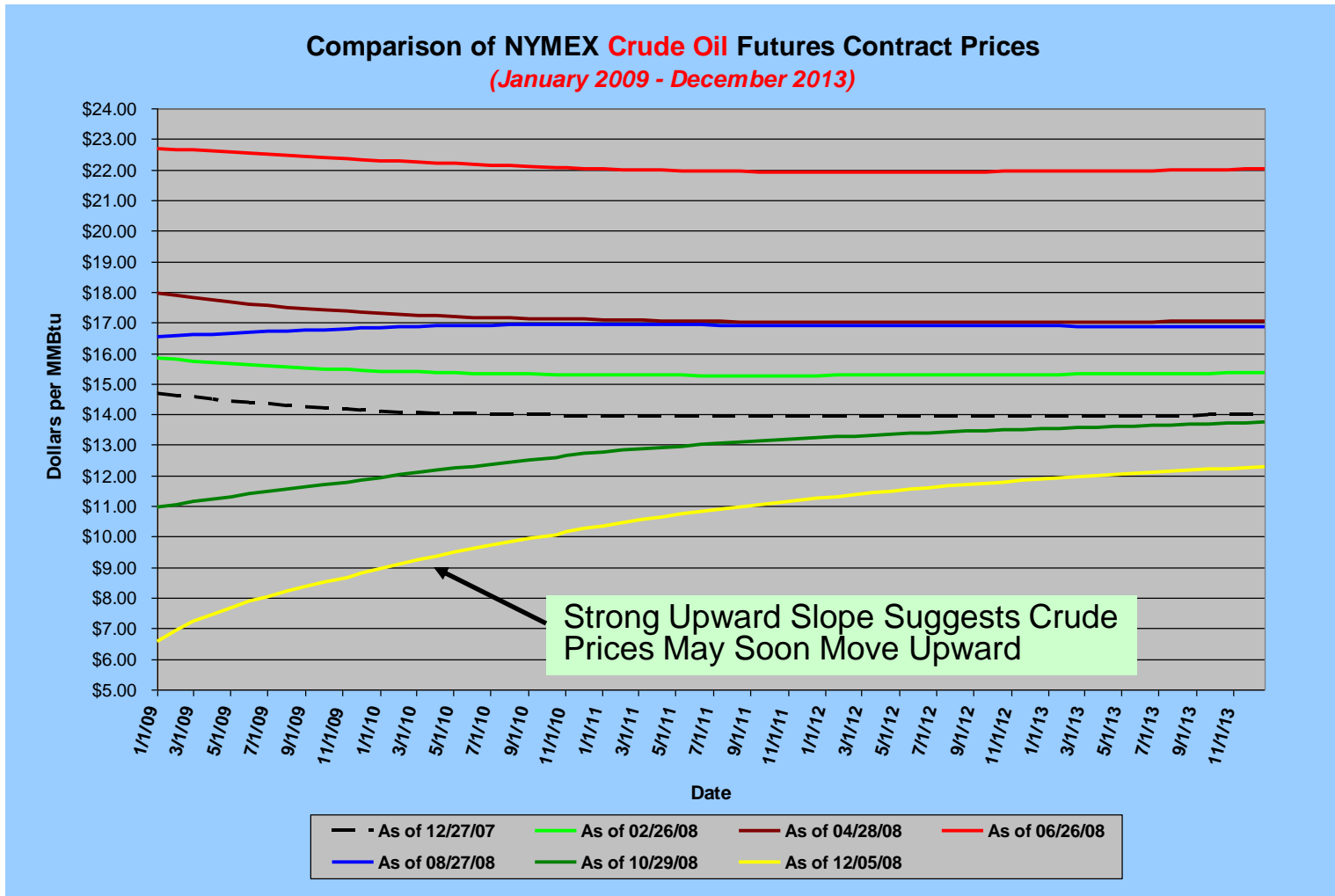
## *Impedes Energy Market Activity*

- ✧ Concerns Regarding **Credit Worthiness** of both Energy Suppliers and Customers Are Renewed
- ✧ The Number of Wholesale Suppliers Declines as Several **Financial Houses Curtail or Eliminate Energy Trading** Activity
- ✧ Trading Volumes in NYMEX and Other Energy Commodities Exchanges Decline
- ✧ Declining Market Prices, **Collateral Requirements** on Futures Contracts, and **Tight Credit** Strain the Liquidity of Many Energy Suppliers and Traders

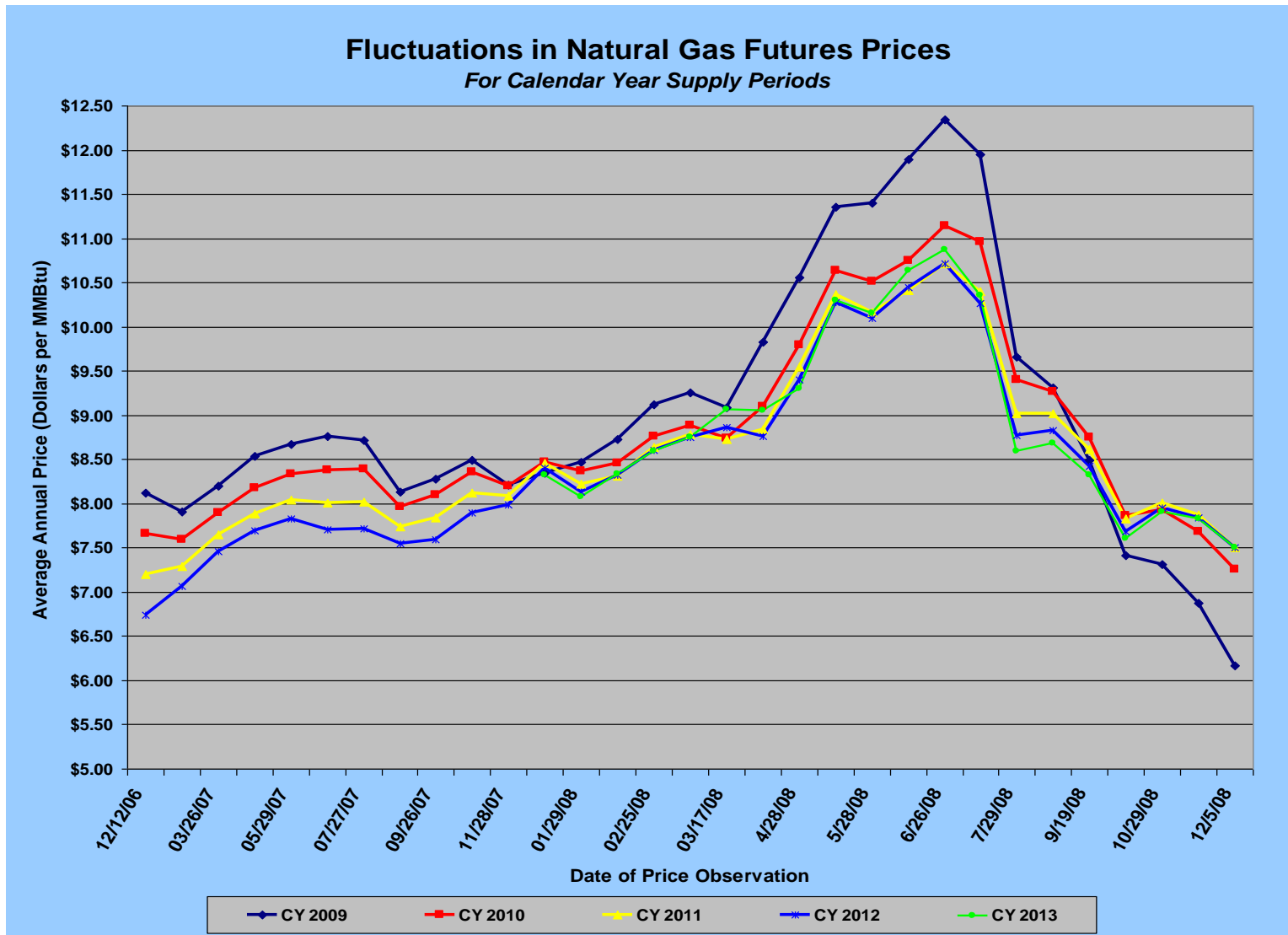
# Drivers of Crude Oil Price Run-Up

- ✳ Growth in International Oil Demand  
*(particularly to fuel expanding automobile fleets in China and India)*
- ✳ Increased Speculative Buying of Energy Futures and Options *(as investors move funds out of equities and into commodities in search of better returns)*

# The Tumble in Crude Oil Prices



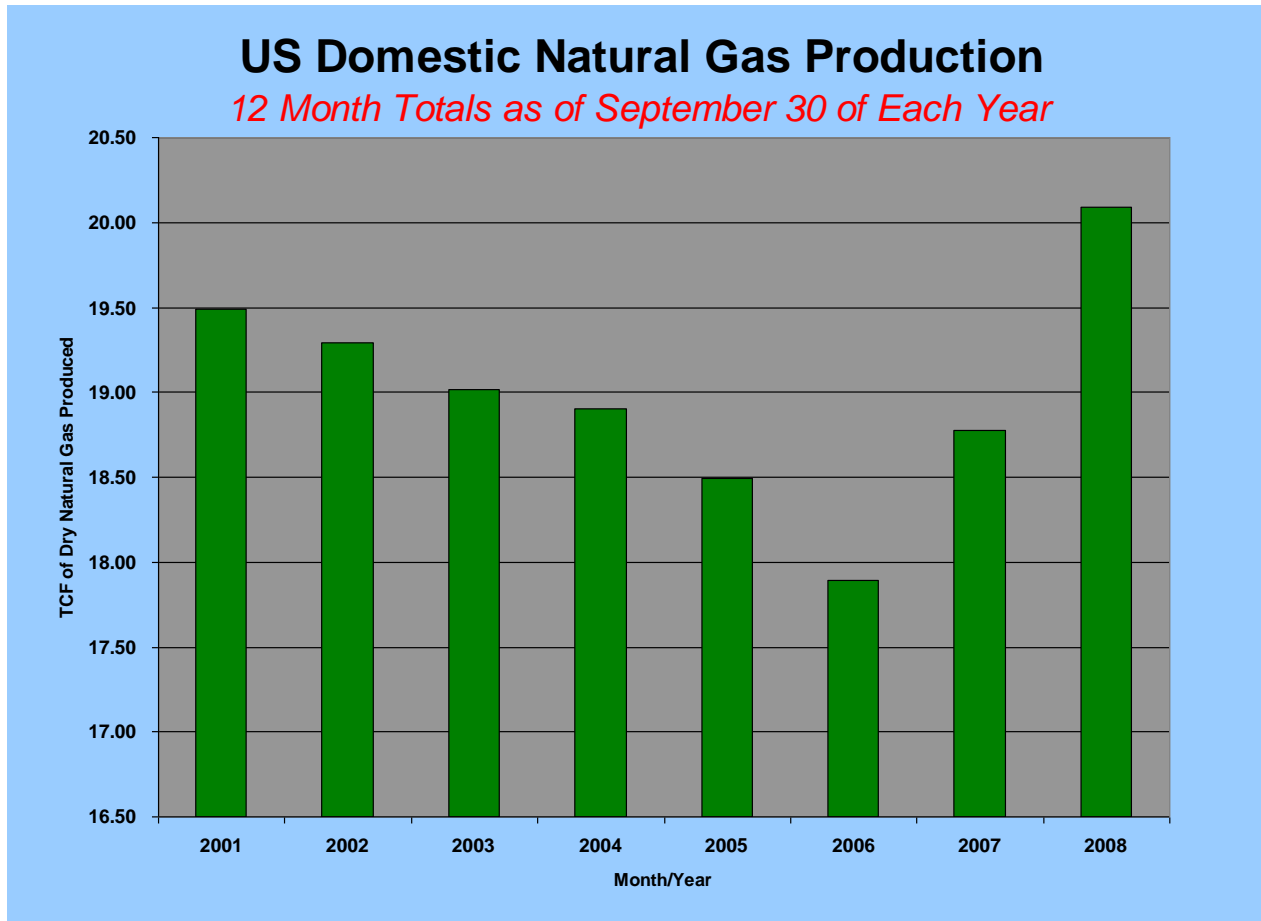
# The Rise & Fall of Natural Gas Prices



# Key Changes in Natural Gas Markets

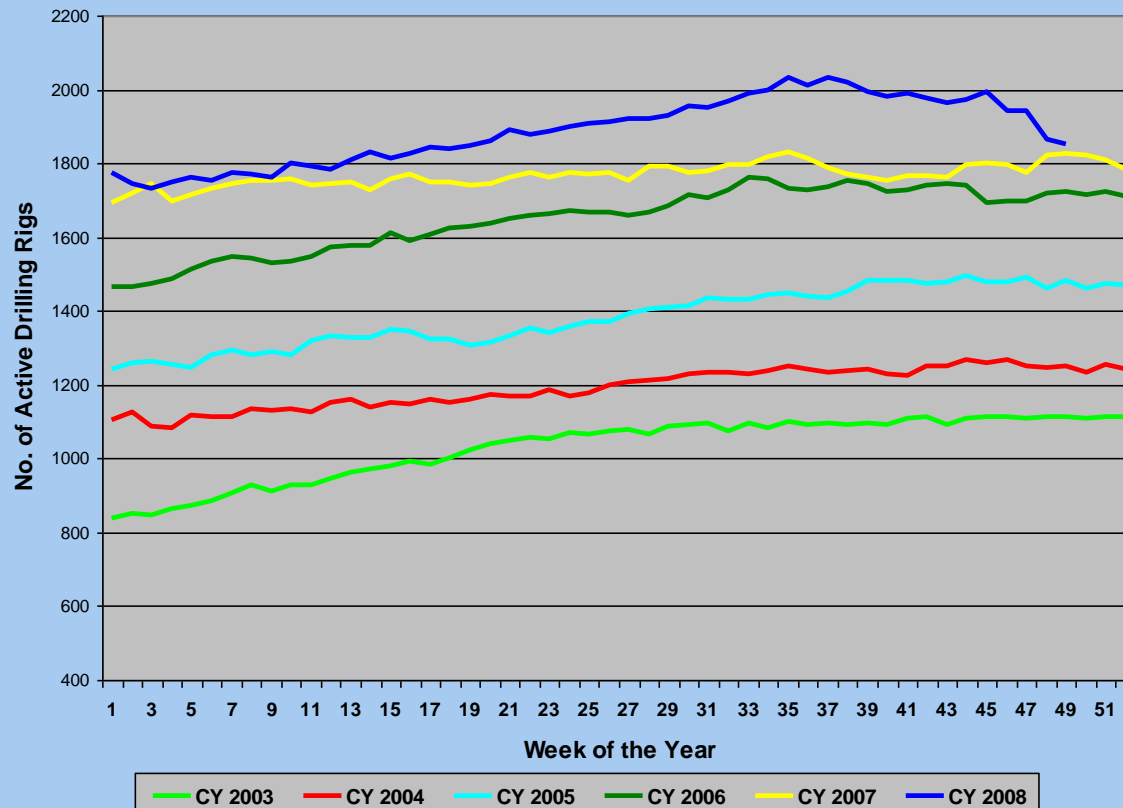
- ✦ Sharply Increased U.S. Natural Gas Production
  - Up more than 7% for most recent 12 months over prior 12 month period
  - Up nearly 12%
- ✦ Declines in Natural Gas Imports
  - LNG Imports Down 58% on an Annual Basis
  - Pipeline Imports from Canada Down 2%
- ✦ Many Consumers Shift from Fuel Oil to Natural Gas after Fuel Oil Prices Spike to Levels Substantially above Equivalent Costs for Natural Gas Service
- ✦ Rockies Express and Other Pipeline Projects Move Forward, But Increased Gas Supply to Eastern Markets May Still Be One to Two Years Away

# After 5 Straight Years of Declining Output, US Natural Gas Production Is Up Over 12% In The Last Two Years



## Baker-Hughes Rig Count - Active Drilling Rigs by Week

January 2003 Through December 2008



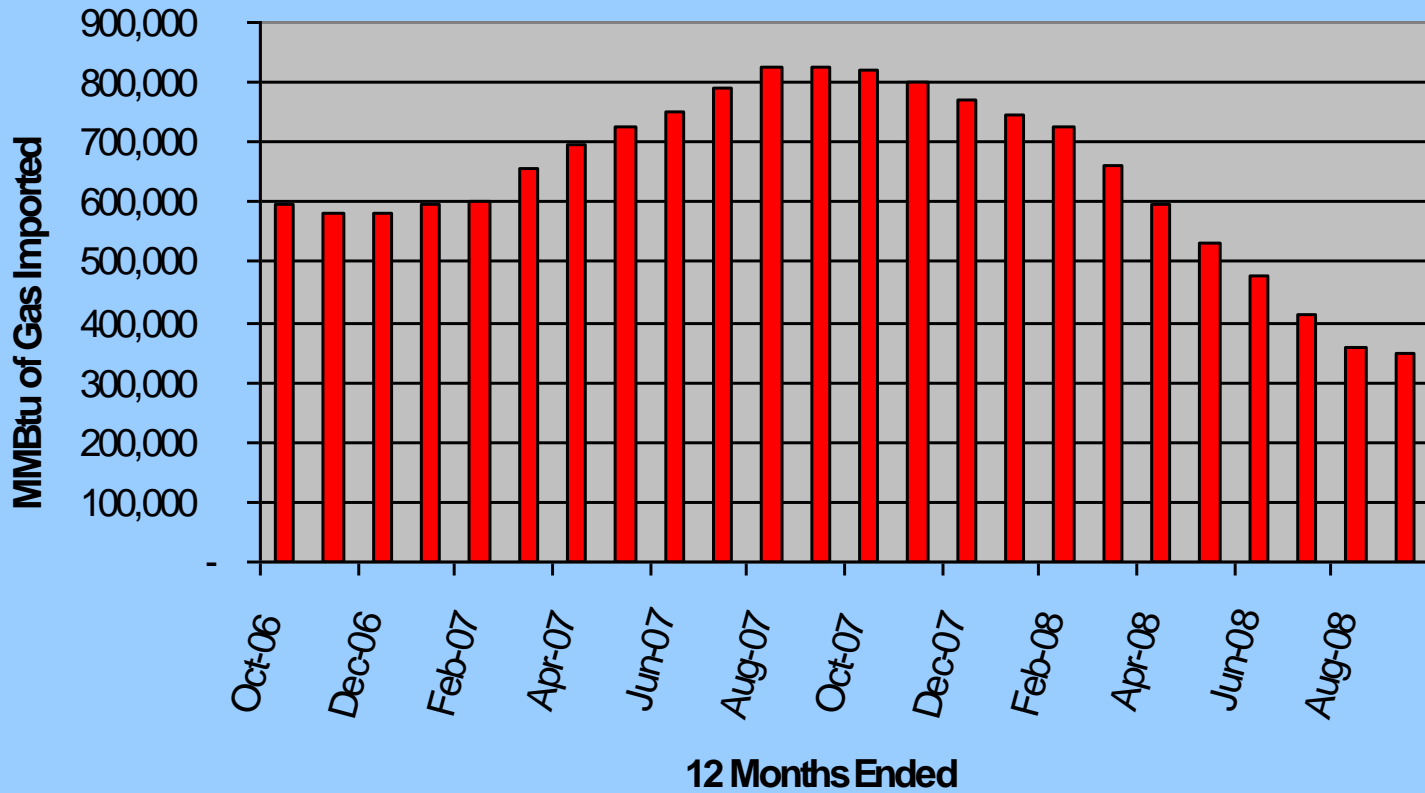
Since September 2008, the number of active drilling rigs has **declined** nearly **10%**.

This is the **largest** decline in drilling activity in more than five years.

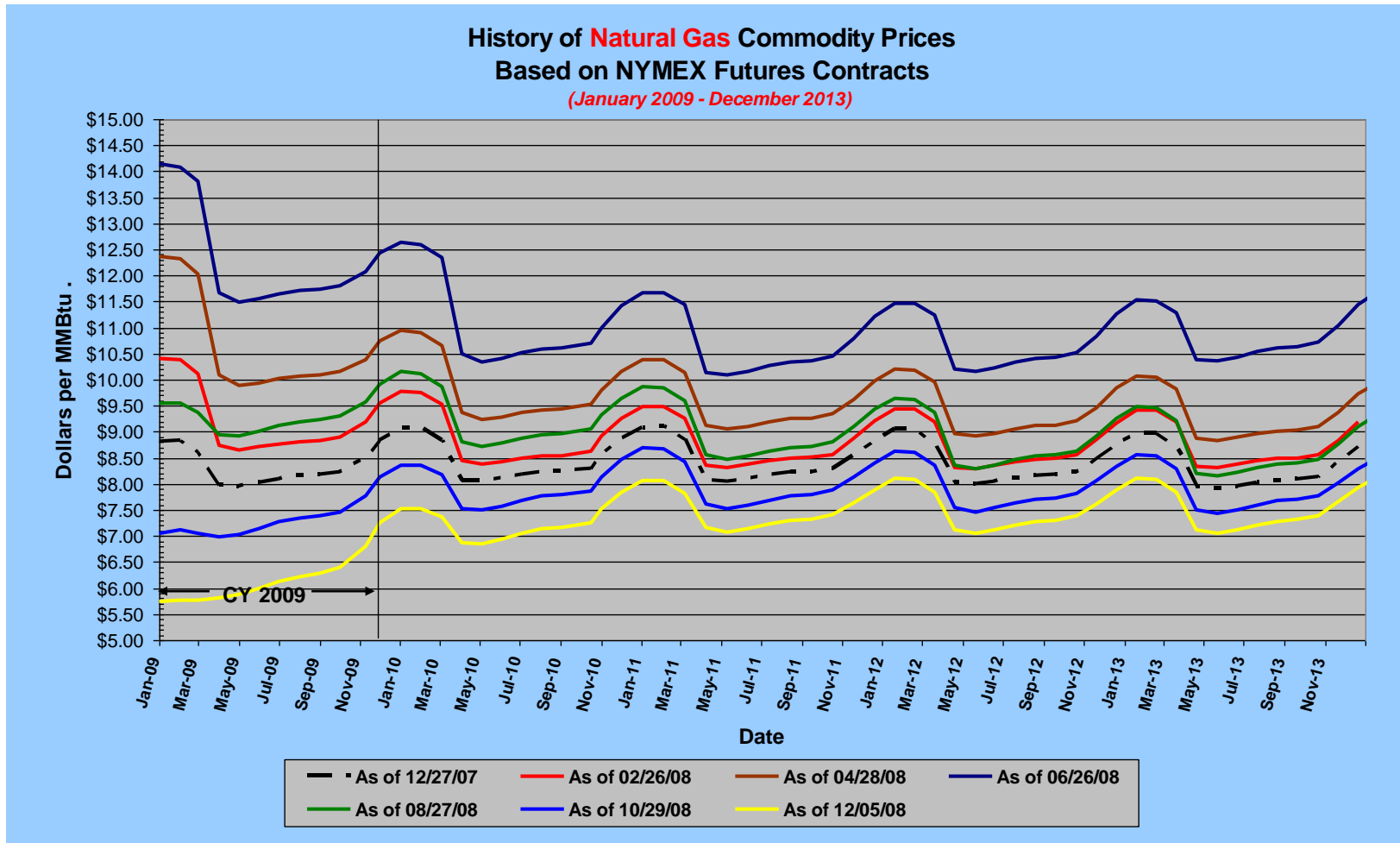
**Further reductions** in drilling activity should be anticipated through at least the middle of 2009.

# US Total LNG Imports

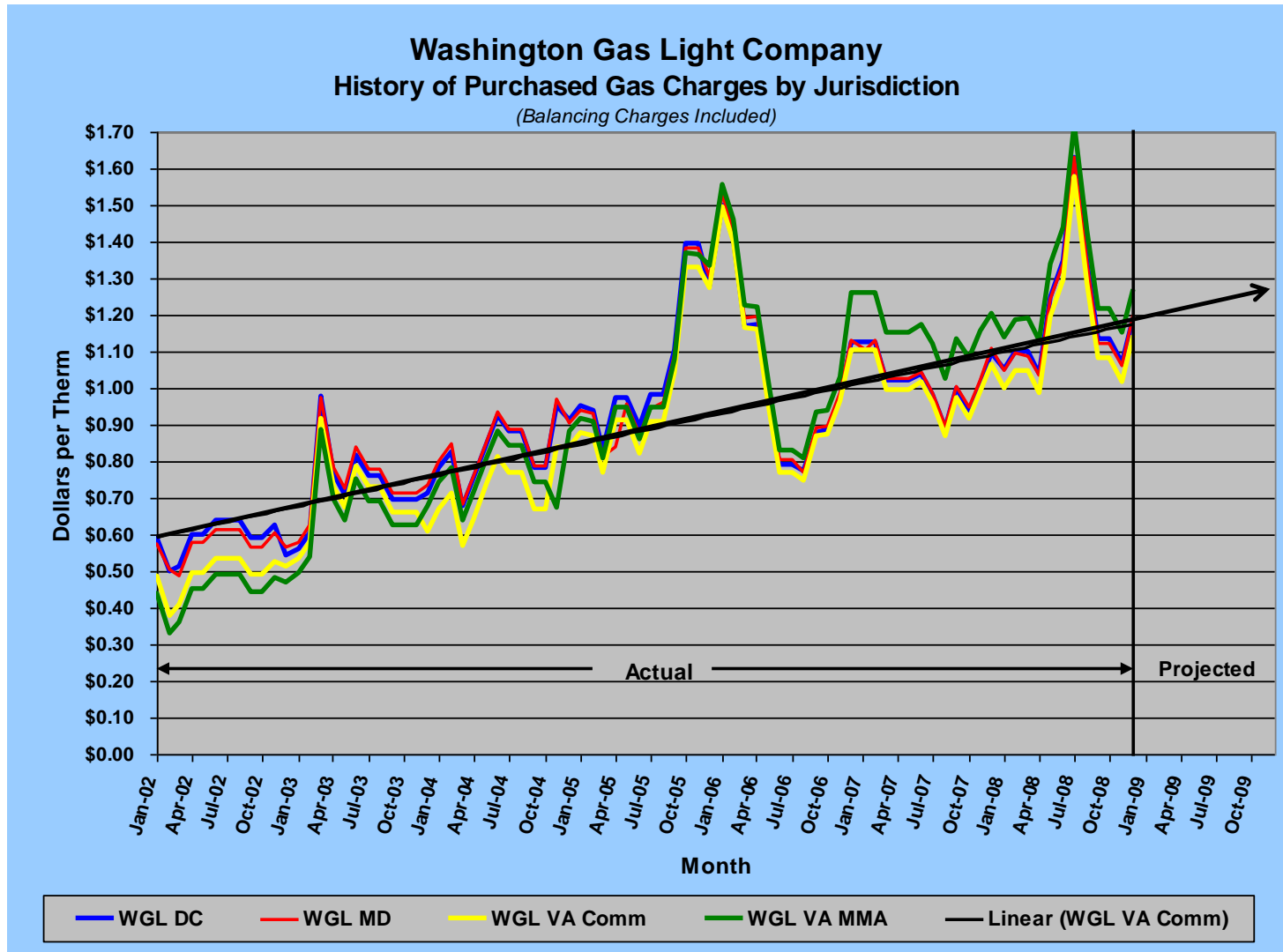
(12 Month Rolling Totals)



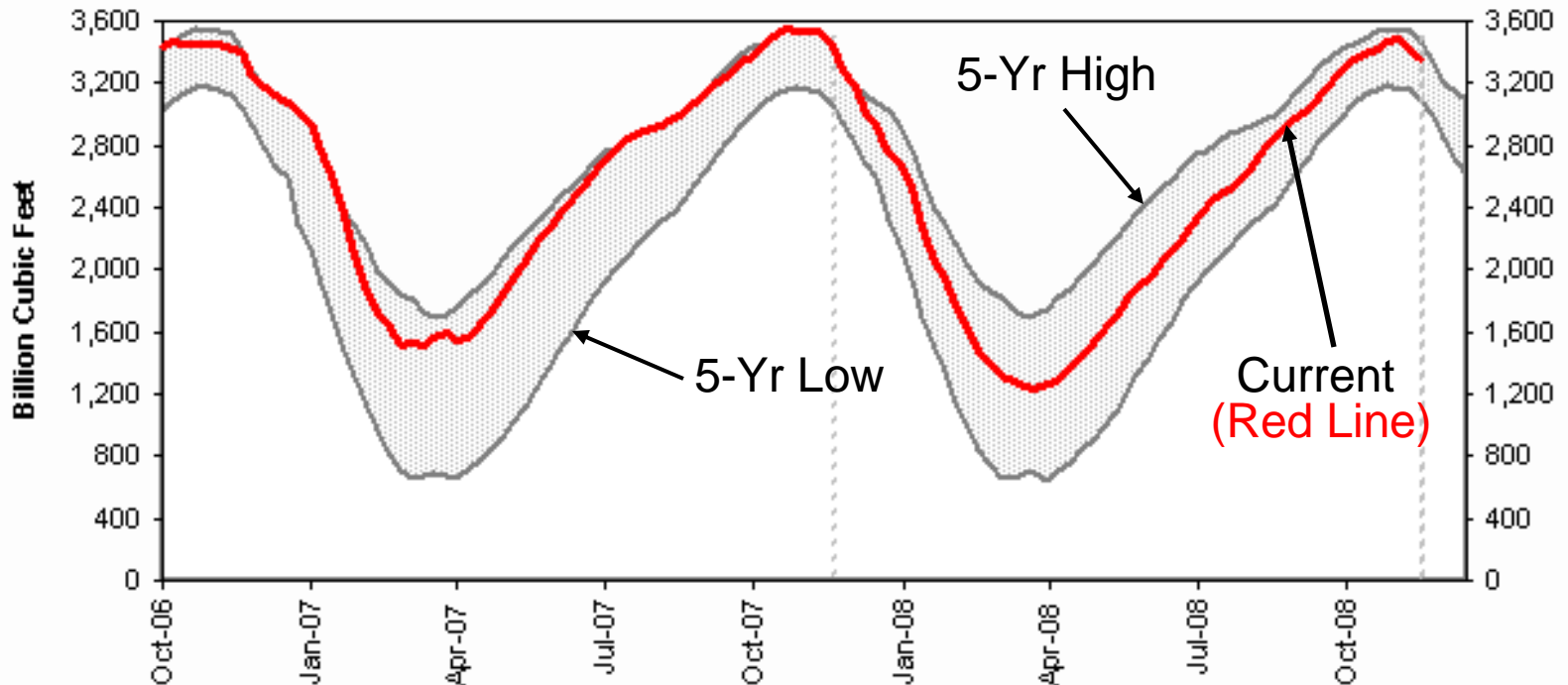
# Changes in Natural Gas Futures Contract Prices During CY 2008



# Long-Term Trend For WGL Purchased Gas Charges Is Still Upward



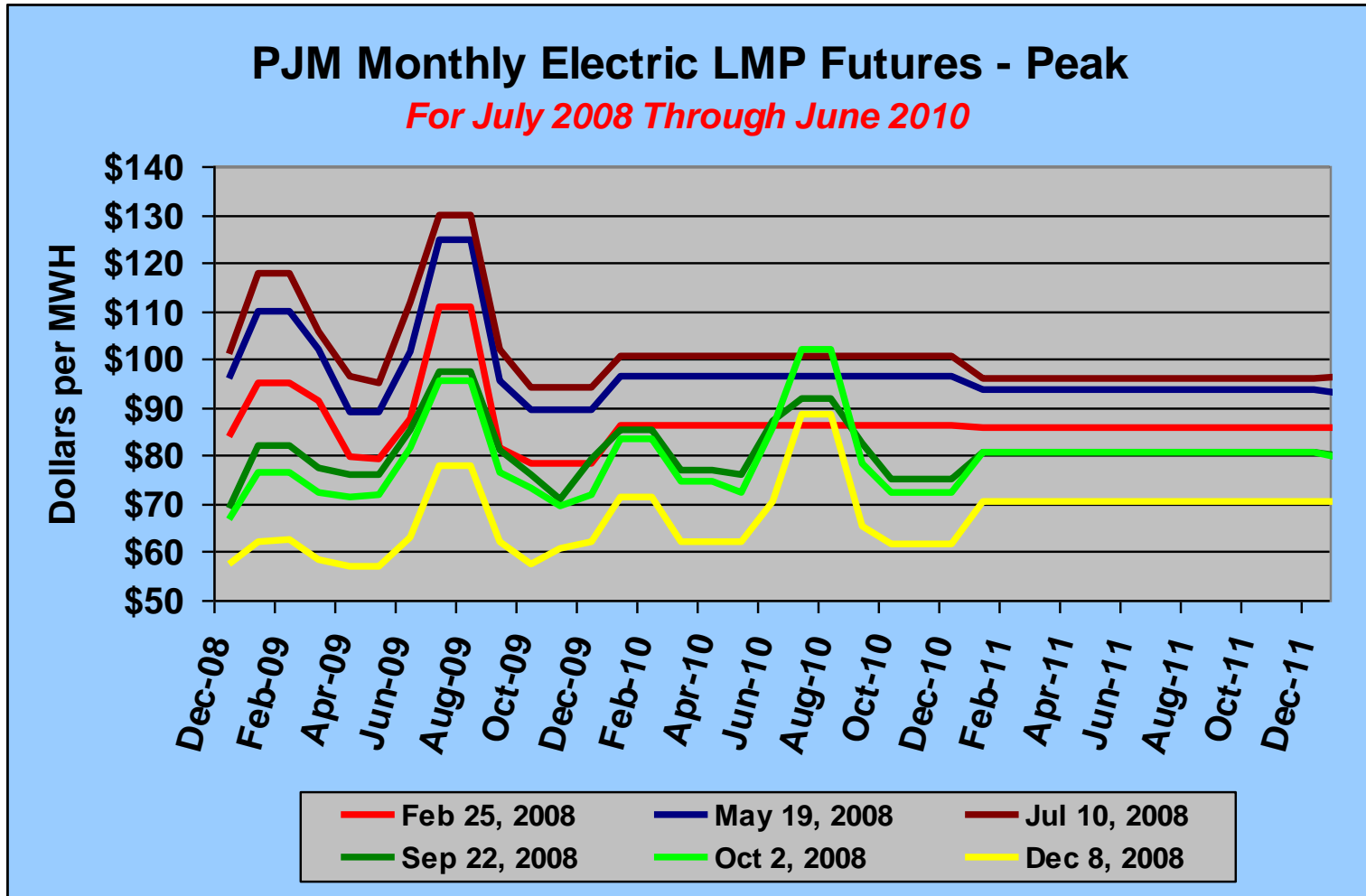
# Natural Gas Storage Inventories Comfortably Between Five-Year High and Low Levels



# Electric Markets

*December 10, 2008*

# Impacts of Energy Price Fluctuations on Wholesale Electric Commodity Prices



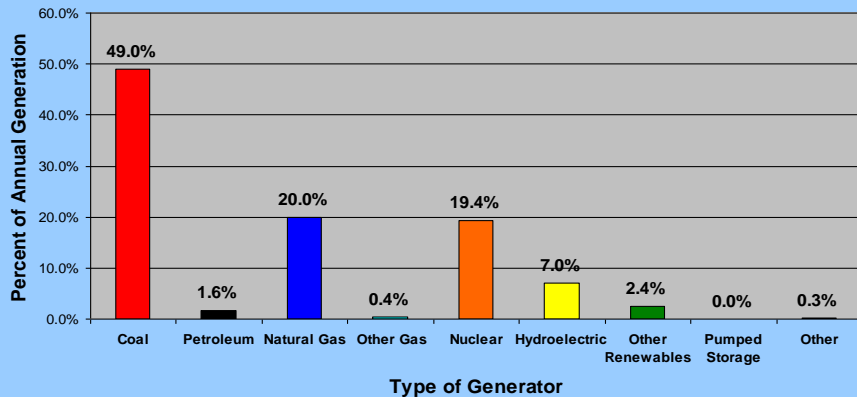
# Illustrative Forward Looking Retail Electricity Supply Prices by Cost Component (for DC Electric Market)

	01/09 – 12/09 As of Dec 2008	01/09 – 12/10 As of Dec 2008
	<b>Cents per kWh</b>	
* Estimated Electric Energy Cost	7.01	7.38
* Locational Capacity Costs	1.50	1.45
* Congestion Charges	0.82	0.72
* Transmission Costs	0.29	0.30
* Ancillaries	0.18	0.21
* Marketer Costs <sup>1</sup>	0.69	0.72
* Distribution Losses	<u>0.63</u>	<u>0.65</u>
* Estimated Total Retail Supply Cost	<b>11.12</b>	<b>11.46</b>

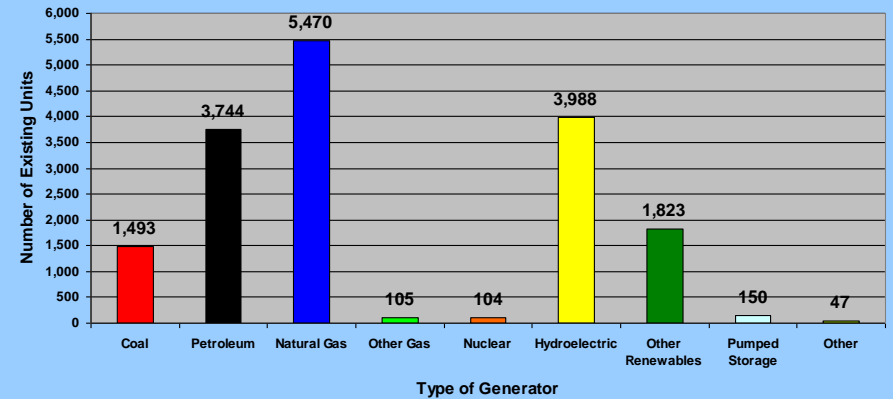
<sup>1</sup> Includes administrative, marketing, and billing costs as well as marketer risk and profit.

# The Composition of US Electric Generation

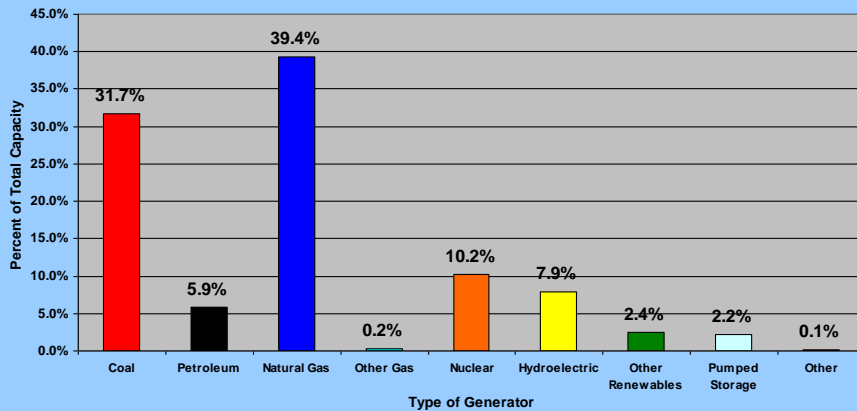
US Electric Generation By Energy Source



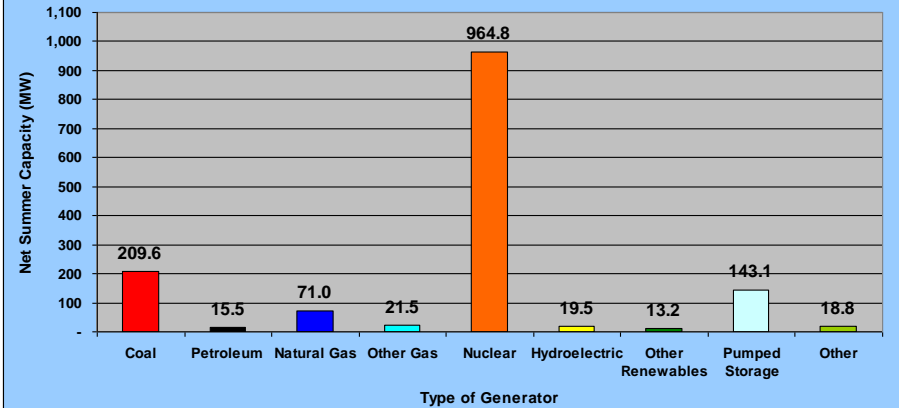
Number of U.S. Generators by Energy Source



Percent of Net Summer Generating Capacity by Fuel Type



Average U.S. Generator Size by Fuel Type



# Energy Outlook for 2009

# Electric Industry Perspective

- ✧ Concerns Regarding Adequacy of Capacity are Likely to Be Alleviated in the Near Term by Reduced Demand Growth
- ✧ Investment in Conservation and Renewable Energy May Be Put on Hold Until the Economic Outlook Appears More Secure
- ✧ “*Going Green*” May Be Displaced By “*Going Lean*.”
  - Some may argue that these two objectives can be pursued simultaneously
  - But “*Going Lean*” will place greater emphasis on working within existing resources while minimizing needs for added capital investment
- ✧ The economics of Renewable Portfolio Standards are likely to be questioned in the face of difficult economic conditions

# Natural Gas Outlook

- ✧ Natural Gas demand will remain relatively strong even in a weak economy
  - By necessity Natural Gas will assume an greater roll in meeting US electric generation requirements
  - Without substantial governmental support and financial aid, plans for the development of new nuclear generation will be deferred
- ✧ Challenges from Fuel Oil will be short-lived as oil prices rebound faster than the overall economy
- ✧ US Natural Gas production flattens and possibly declines, as drilling activity ebbs and output from existing wells declines
- ✧ Natural Gas commodity prices of at least \$8.00 to \$9.00 are likely to be necessary to economically justify the development of most new wells in the US

# Regulated Utilities

- ✧ The weak economy can be expected to result in further consolidation of utility operations (e.g., the Mid-American buyout of Constellation Energy).
- ✧ However, too much consolidation may bring pressure for the breakup of utility holding companies.
- ✧ Both Gas and Electric utilities will be under pressure not to seek further rate increases, except where automatic rate adjustments are already approved and in place.
- ✧ Dominion Virginia Power customers may see a **decrease** in fuel rates on or about July 1, 2009.
- ✧ Regulation of at least “Residential” electric service in Maryland may be facilitated by problems associated with the procurement of standard offer service.