Natural Gas Market Volatility: Impact and Buying Strategies for End-Users

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How Volatile Are Natural Gas Prices?

- Vary about 3% per day on average
- Natural gas prices tend to be more volatile than many other commodities and the stock market

Natural Gas Market Volatility Compared to Other U.S. Commodity and Equity Markets over the Past Eleven+ Years

Market	Average Absolute Deviation of Daily Closing Prices of Prompt-Month Futures Contract	Standard Deviation/Mean of Daily Closing Prices of Prompt-Month Futures Contract
NYMEX Natural Gas	2.7%	51.8%
NYMEX Heating Oil	1.7%	40.6%
NYMEX Light, Sweet Crude Oil	1.7%	38.9%
COMEX High-Grade Copper	1.1%	26.6%
NYBOT Coffee "C"	2.0%	42.6%
U.S. Stocks' Dow Jones Industrial Average	0.8%	29.2%

Gas Volatility Impact on End-Users

History of Natural Gas Market Volatility

Volatility has been high and consistent for past 11+ years

Year	Avg. Absolute Deviation of Daily Closing Prices of NYMEX Natural Gas Prompt-Month Futures Contract	Standard Deviation/Mean of Daily Closing Prices of NYMEX Natural Gas Prompt- Month Futures Contract
Entire Period (1/3/94 to 7/26/05)	2.7%	51.8%
2005 (thru July 26)	1.6%	7.9%
2004	2.5%	13.5%
2003	2.9%	14.5%
2002	2.8%	22.3%
2001	3.6%	40.5%
2000	2.7%	39.0%
1999	2.4%	16.5%
1998	2.7%	9.6%
1997	2.7%	19.9%
1996	3.5%	19.9%
1995	2.3%	17.4%
1994	2.4%	12.9%

Gas Volatility Impact on End-Users

What End-Users Try to Avoid

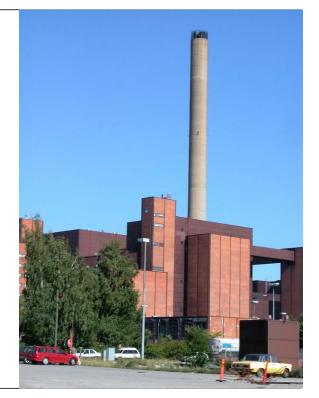
- High Costs
- Price Instability & Uncertainty



Gas Volatility Impact on End-Users

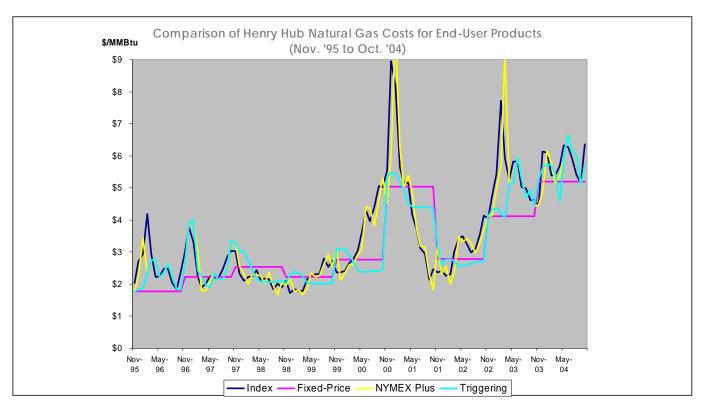
Common Deregulated Gas Products (Pricing Plans) Available for End-Users

- 1. Index
- 2. Fixed-Price
- 3. NYMEX Plus
- 4. Triggering
- Fuel-Switching & Other Advanced Structures



Gas Volatility Impact on End-Users

Testing the Historic Performance of Common Gas Products



Gas Volatility Impact on End-Users

Key Assumptions for Performance Test of End-User Products

- Henry Hub, Louisiana is used as standard pricing point
- Data cover Nov. 1, 1995, to Oct. 31, 2004
- NYMEX closing prices on Oct.
 15 of each year are used for "fixed-price" product
- Triggers for winter months are set 3% below Oct. 15 NYMEX levels and triggers for summer months are set 7% below Oct. 15 NYMEX levels
- Flat gas usage profile from month-to-month



Conclusions on Risk/Return Performance of End-User Products

- End-user products designed to reduce volatility appear to do so
- No product substantially insulates end-user from broader market price & volatility pressures
- Fuel-switching products had large impact some winters and no impact in others
- Test is sensitive to trigger price-setting assumptions



Gas Volatility Impact on End-Users

Presenter Background

- Craig Schultz is President of Energy Buying Strategies, a consulting firm that works with commercial and industrial end-users to manage the costs, risks, and process of energy purchasing
- Mr. Schultz previously managed marketing, product development, and strategy for large deregulated energy suppliers
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