

MANAGING NATURAL GAS PRICE VOLATILITY

May 2008



141 W Jackson Blvd • Suite 1521 • Chicago, IL 60604 • 312.373.8250 • info@riskmgmt.net




TABLE OF CONTENTS

**Section 1 – Macro Economic Influences on
Commodity Pricing**

**Section 2 – Hedge Plan Structures for Managing
Natural Gas Volatility**





**SECTION 1
MACRO ECONOMIC
INFLUENCES**

MACRO-MARKET PRICE INFLUENCES

Resource Scarcity

Speculators & Investors

ROW Led Demand Growth



Weak Dollar

Weather Extremes

Environmental Crisis

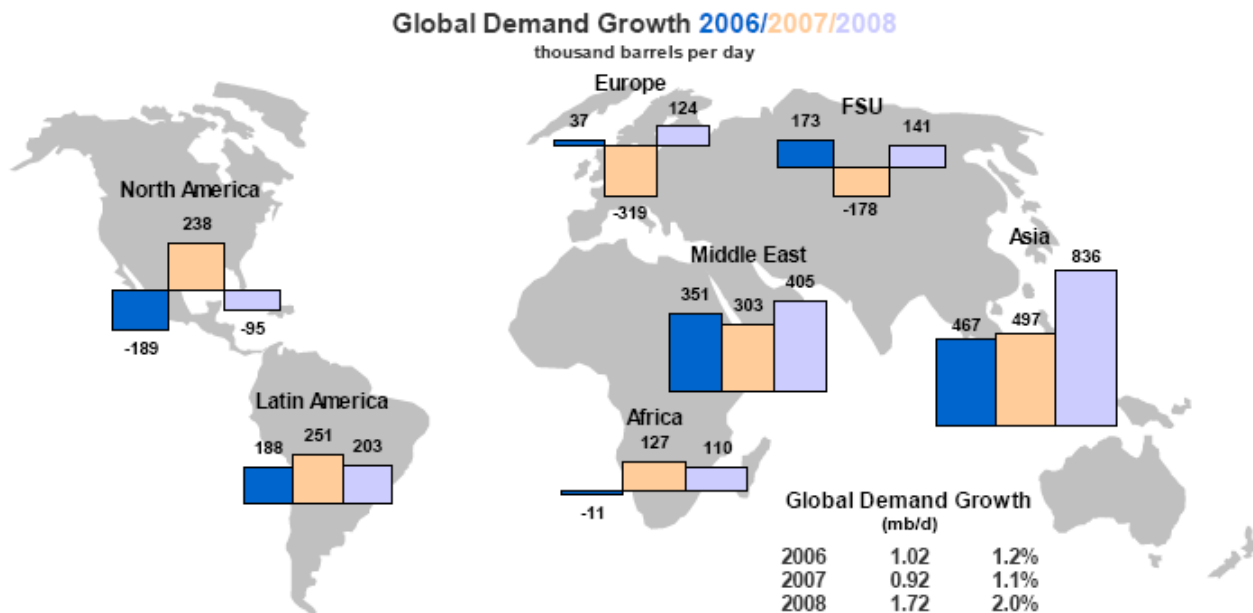
'ROW'-LED DEMAND GROWTH

Top World Oil Consumers, 2006
(thousand barrels per day)

Rank	Country	Consumption
1	United States	20,687
2	China	7,273
3	Japan	5,159
4	Russia	2,861
5	Germany	2,665
6	India	2,587
7	Canada	2,264
8	Brazil	2,217
9	Korea, South	2,174
10	Saudi Arabia	2,139

Top World Oil Net Importers, 2006
(thousand barrels per day)

Rank	Country	Imports
1	United States	12,357
2	Japan	5,031
3	China	3,428
4	Germany	2,514
5	Korea, South	2,156
6	France	1,890
7	India	1,733
8	Italy	1,568
9	Spain	1,562
10	Taiwan	940



INTERNATIONAL ENERGY AGENCY - OIL MARKET REPORT

WEATHER EXTREMES

February blizzard in China

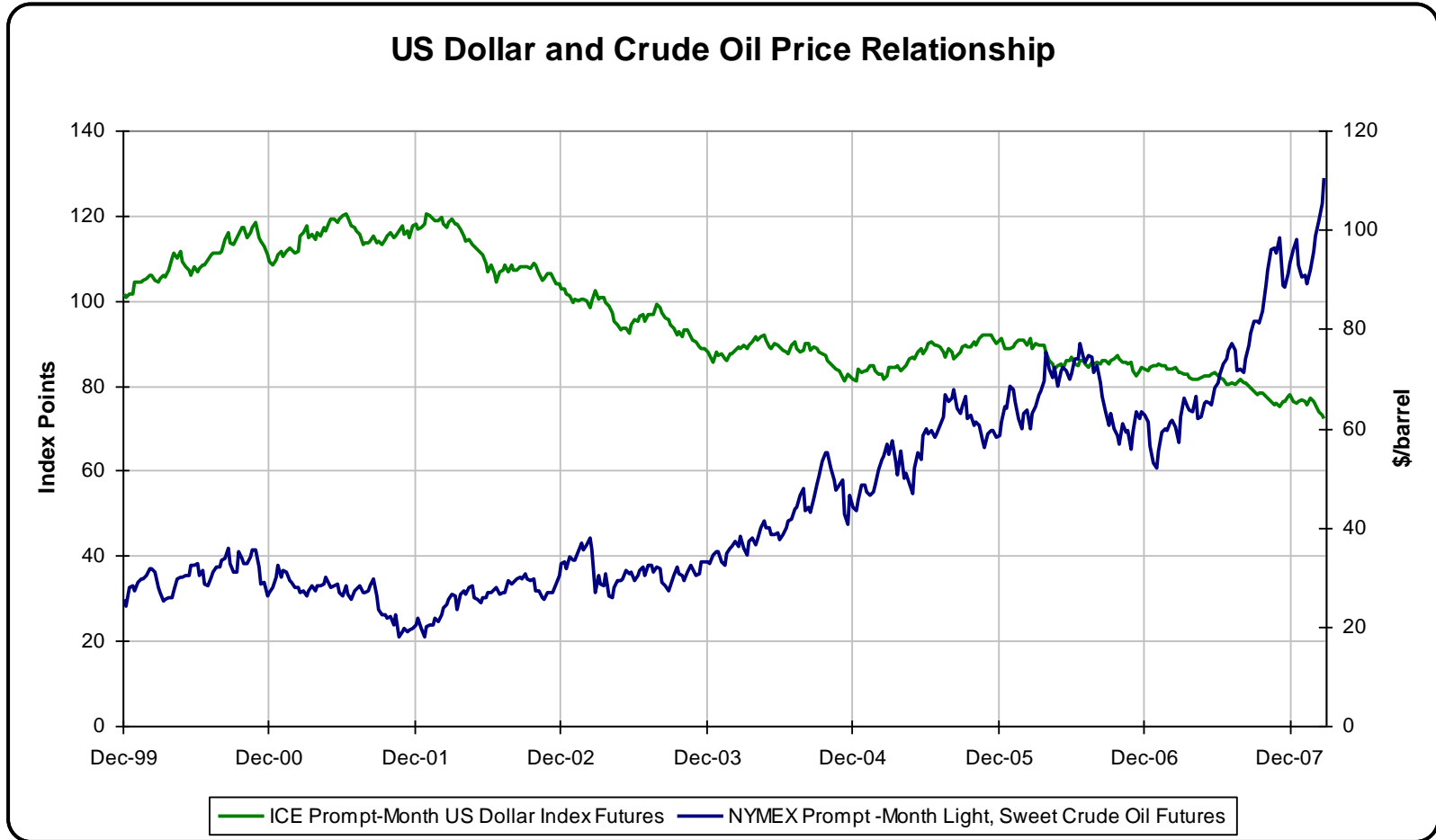


Flooded Yallourn coal mine in Australia



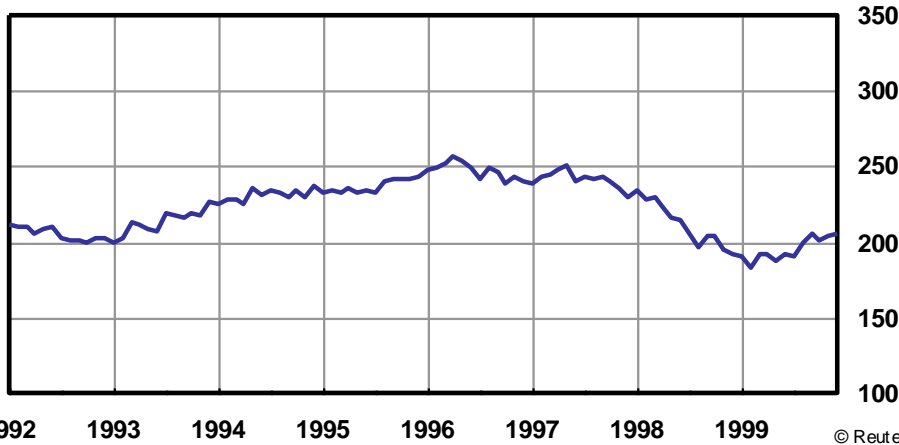
BP's Thunderhorse platform listing in Gulf of Mexico after Hurricane Katrina

WEAK DOLLAR

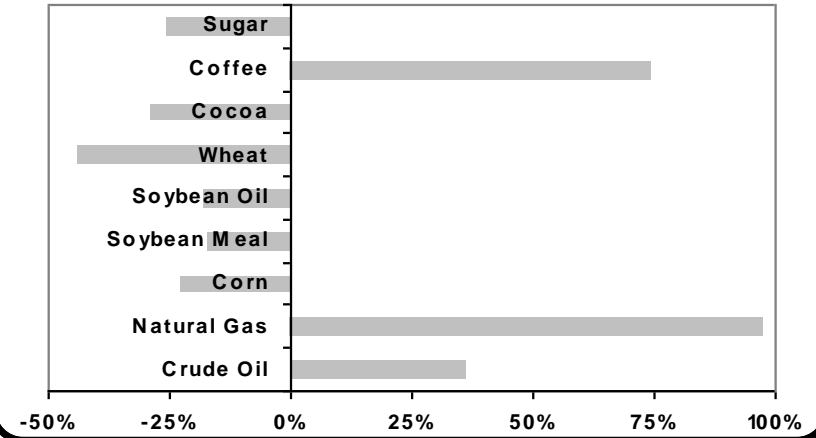


COMMODITY PRICE TRENDS - WHAT CHANGED?

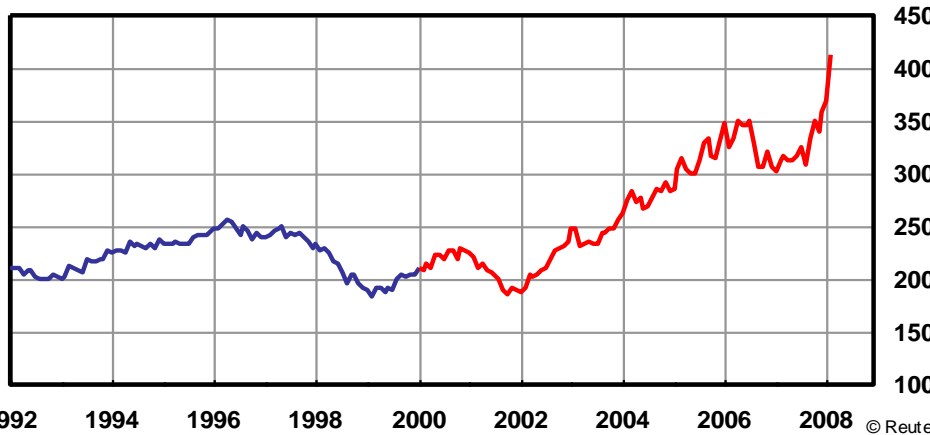
Reuters/Jefferies-CRB® Index (1967=100)
(monthly close) January 1992 - December 1999



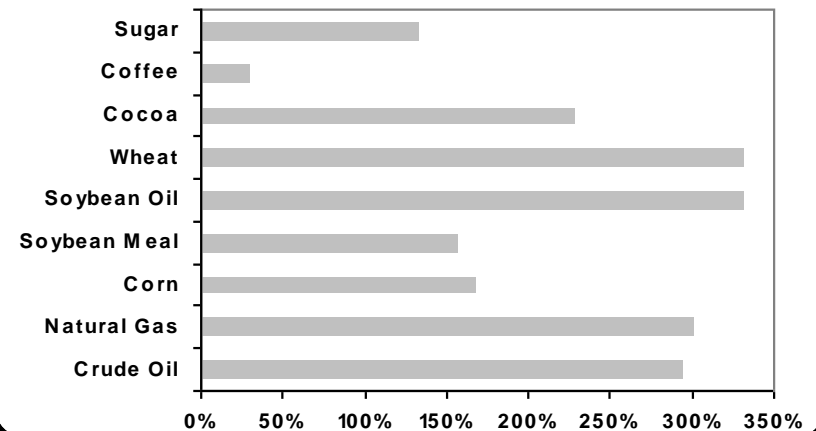
Spot Price Change Of Selected Commodities
(monthly close) January 1992 - December 1999



Reuters/Jefferies-CRB® Index (1967=100)
(monthly close) January 1992 - February 2008



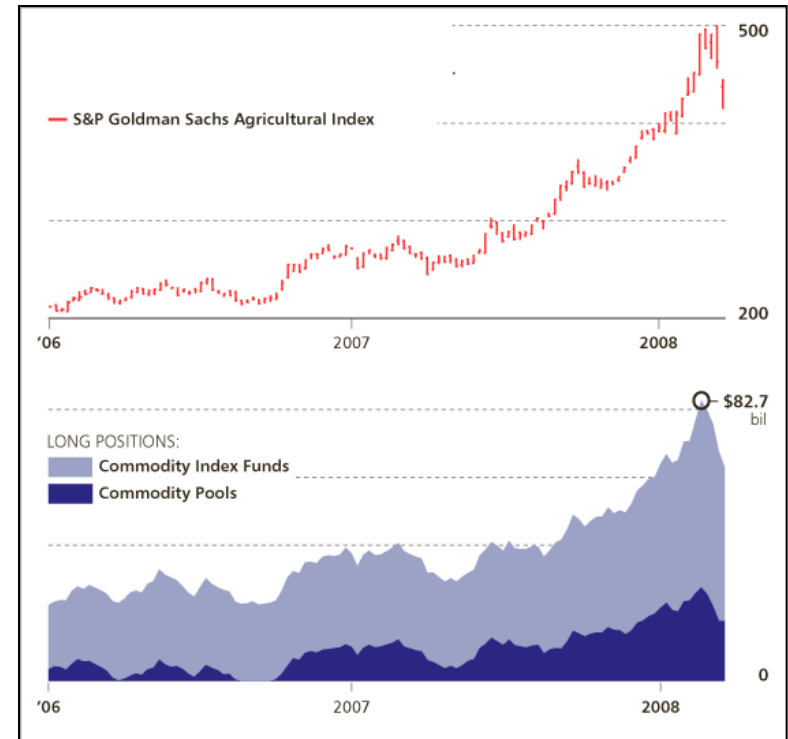
Spot Price Change Of Selected Commodities
(monthly close) January 2000 - February 2008




SPECULATORS & INVESTORS - BY THE NUMBERS

Citigroup Inc. Global Commodity Investment Analysis (US\$ billion)			
	End 2007 Investment Total	Q1 2008 Investment Increase	Investment Total (3/31/08)
Indexes	145	40	185
CTA's	80	14	94
Hedge Funds	60	15	75
ETF's	35	11	46
Total	320	80	400

Purely Coincidence?



Sources: Standard & Poor's; Commodity Futures Trading Commission; Steve Briesie

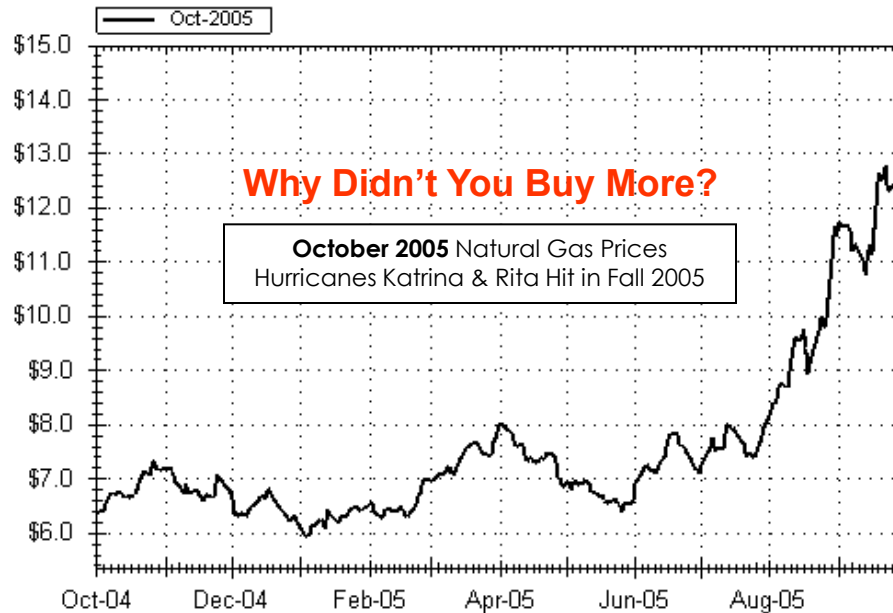


**SECTION 2
HEDGE PLAN
STRUCTURES**

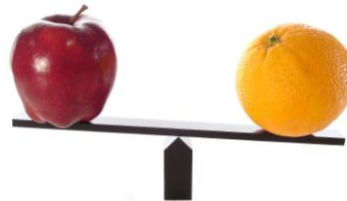
GETTING TO THE REAL ISSUES

The Energy Hedger's Dilemma: How Did I Do?

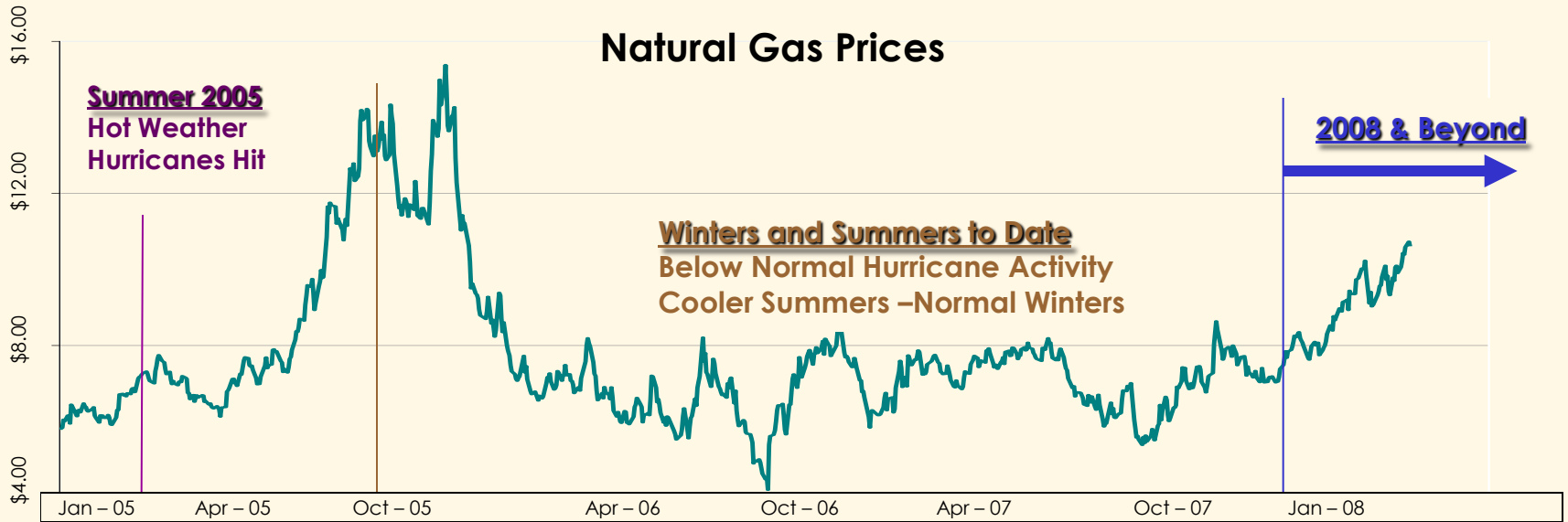
Henry Hub Natural Gas





Henry Hub Natural Gas



HEDGE PROTECTION SINCE KATRINA & RITA



Natural Gas Hedge Program Insurance 	Benefit	Reduced gas costs	Security of protection given unforeseen events LOWER PRICES for the utility	Plan protection provides security given unforeseen and catastrophic events.
	Cost	Overall prices increased	"Hedge" Premium associated with plan protection	
Home Insurance 	Benefit	Reduced rebuilding costs	Security of protection given unforeseen events Rebuilding costs not an issue	
	Cost	Homes destroyed	"Insurance" Premium associated with plan protection	



HEDGE PROTECTION/INSURANCE 2008 & BEYOND



- 2008 has proven that just because your house had not burned recently there was no guaranty that a fire would not have ensued at some point in the future



- Having a hedge program is analogous to securing a home insurance policy



- It is prudent to maintain home insurance just as it is prudent to maintain a hedge program

The pending direction of natural gas prices is even far less certain.

PRICING OBJECTIVES

OBJECTIVES
√ Establish Price Stability
√ Buy at Historic Low Value
√ Protect Against Major Price Increases
√ Reduce costs in future years

WHAT TO DO?

The best advice to offer is ...

- ✓ Quantify your hedge strategy
- ✓ Maintain structure and discipline in your hedge program
- ✓ Think long term in a market with a short-term focus

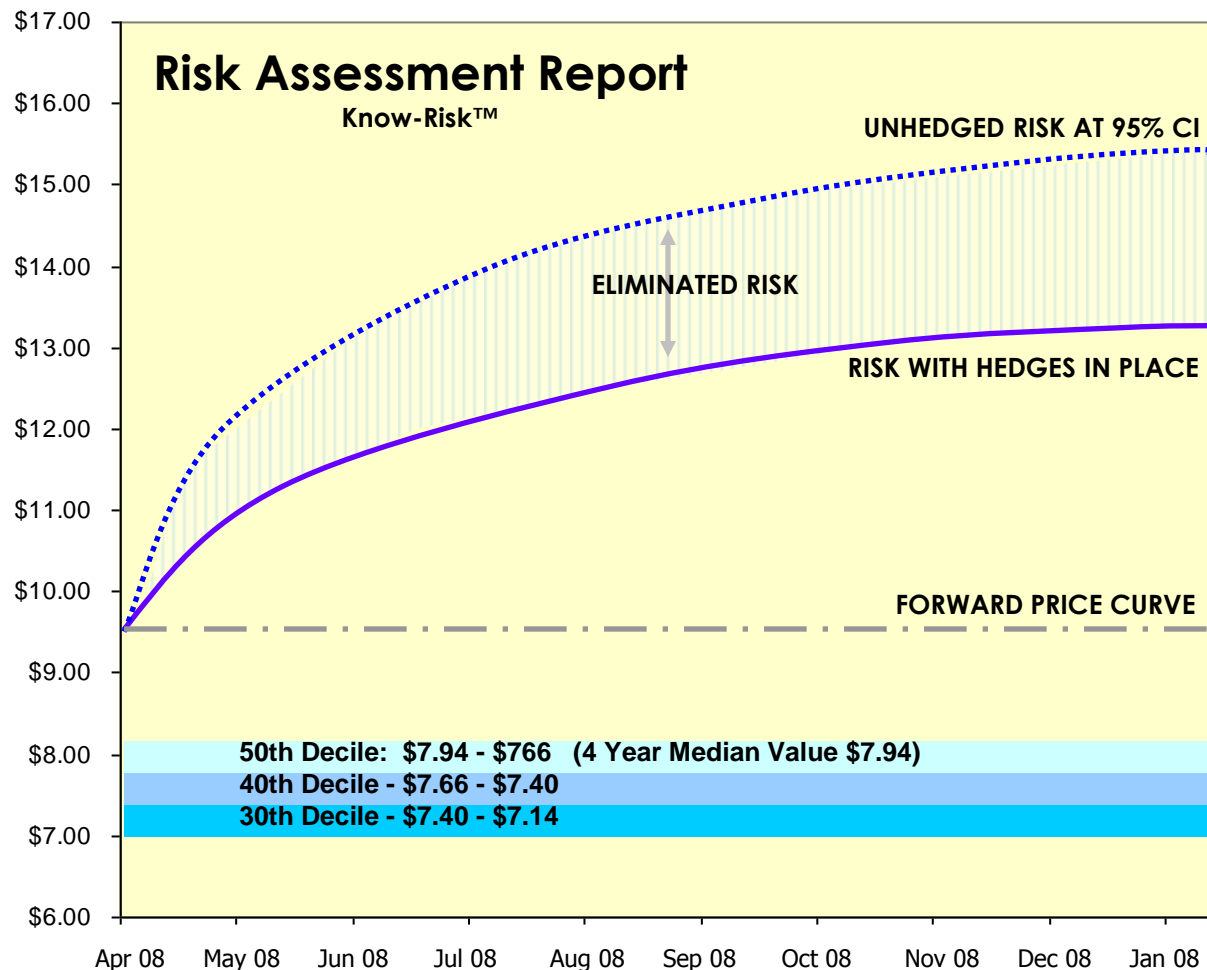
Quantitative variables to consider to achieve a rational purchase price...

- ✓ Risk Analysis - **DEFINE RISK**
- ✓ Historic Prices - **DEFINE VALUE**
- ✓ Price Targets Beyond Current Year - **THINK LONG TERM**
- ✓ Time Targets - **PRICE STABILITY**
- ✓ The Application of Multiple Tools - **UTILIZE OPTIONS**

DEFINE & QUANTIFY RISK

On a daily basis, the price risk and opportunity of an energy or commodity portfolio can be measured using metrics like VaR and the RMI price matrix

- RAR quantifies the price risk by month during a calendar year
- The proximity of the forward curve to historical value can be judged versus upside price risk

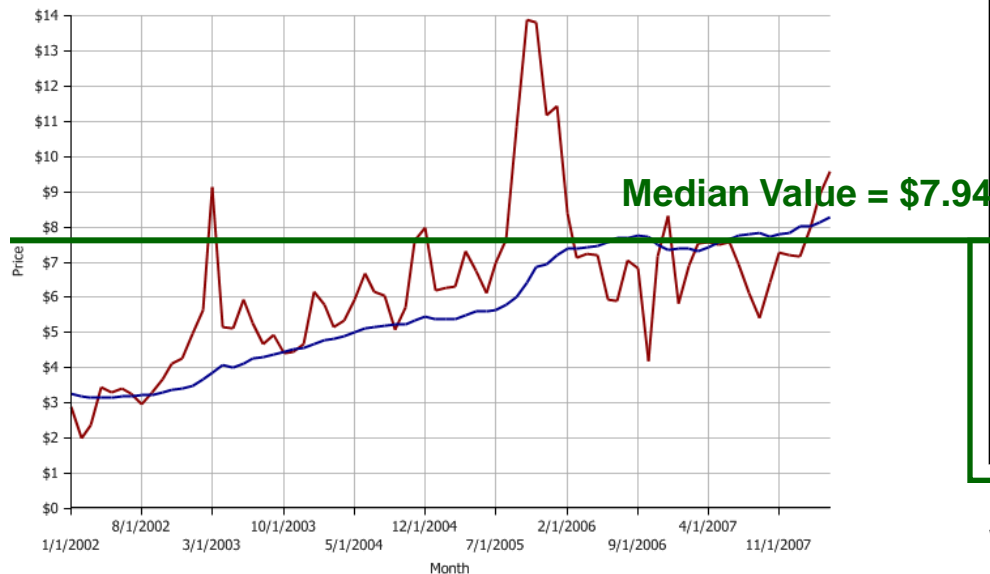


VALUE MANAGEMENT

Define what makes a price expensive or cheap, and develop a strategy to create a competitive advantage

- Identify prices that represent historical 'value' and compare them to the current market
- Prices in the 'value area' have inherently lower opportunity risk, and greater strategic value
- Aggressively contract the commodity at pre-determined 'value' levels

Monthly Natural Gas Settlement Prices vs. Annual Strip Mean Values



NATURAL GAS - NYMEX	
	ANNUAL
Mean	8.27
Median	7.94
90% - MAX	10.24 - 15.81
80% - 90%	8.84 - 10.24
70% - 80%	8.38 - 8.84
60% - 70%	8.15 - 8.38
50% - 60%	7.94 - 8.15
40% - 50%	7.66 - 7.94
30% - 40%	7.40 - 7.66
20% - 30%	7.14 - 7.40
10% - 20%	6.62 - 7.14
MIN - 10%	4.92 - 6.62

Value Area

Compiles 4 years of data
Weighted heavily to most recent year's data
Adjusted for inflation using the PPI

DEVELOP STRATEGY

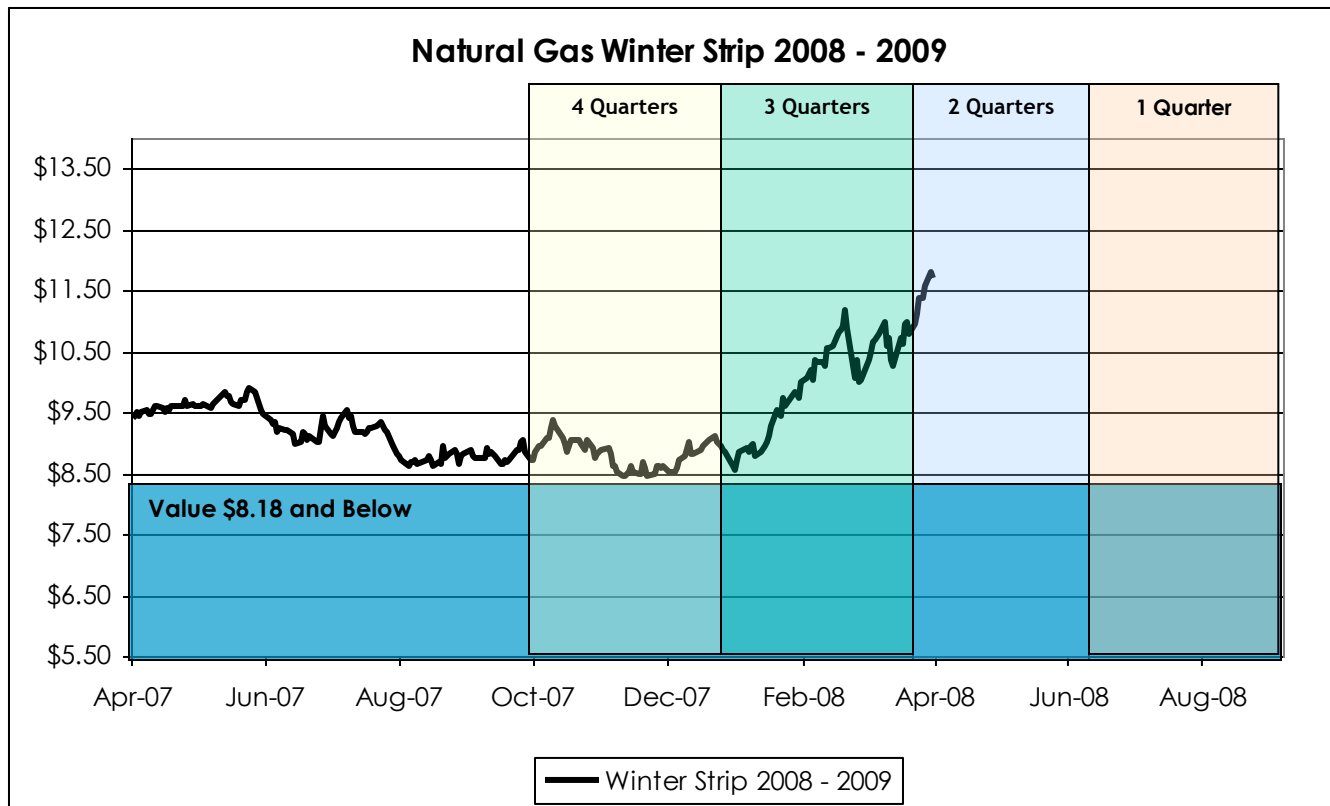
A Successful Price Target Strategy:

- Meets company hedge objectives
- Acknowledges quantified market risks and volatility
- Considers market opportunities beyond current year
- Contains objective execution parameters

QUANTIFY EXECUTION

<p>Value Target</p> <p>Define 'good' long-term value, and match value with purchasing aggressiveness</p>	<p>Time Target</p> <p>Mitigate risk by ensuring certain levels of minimum coverage prior to a season or planning period</p>	<p>Pricing Tools</p> <p>Utilize judgment in the use of options in conjunction with fixed pricing and index gas.</p>
<p>Example:</p> <p>Below Historical Median</p>	<p>Example:</p> <p>Dollar Cost Averaging</p>	<p>Example:</p> <p>Buy Caps, Collars, etc.</p>

GENERIC WINTER 2008-2009 HEDGE PLAN



ASSUMPTIONS:

1. Time Triggers, Value Triggers and Volumes Hedged will vary depending on customer's risk tolerance
2. The use of options can further diversify this pricing portfolio

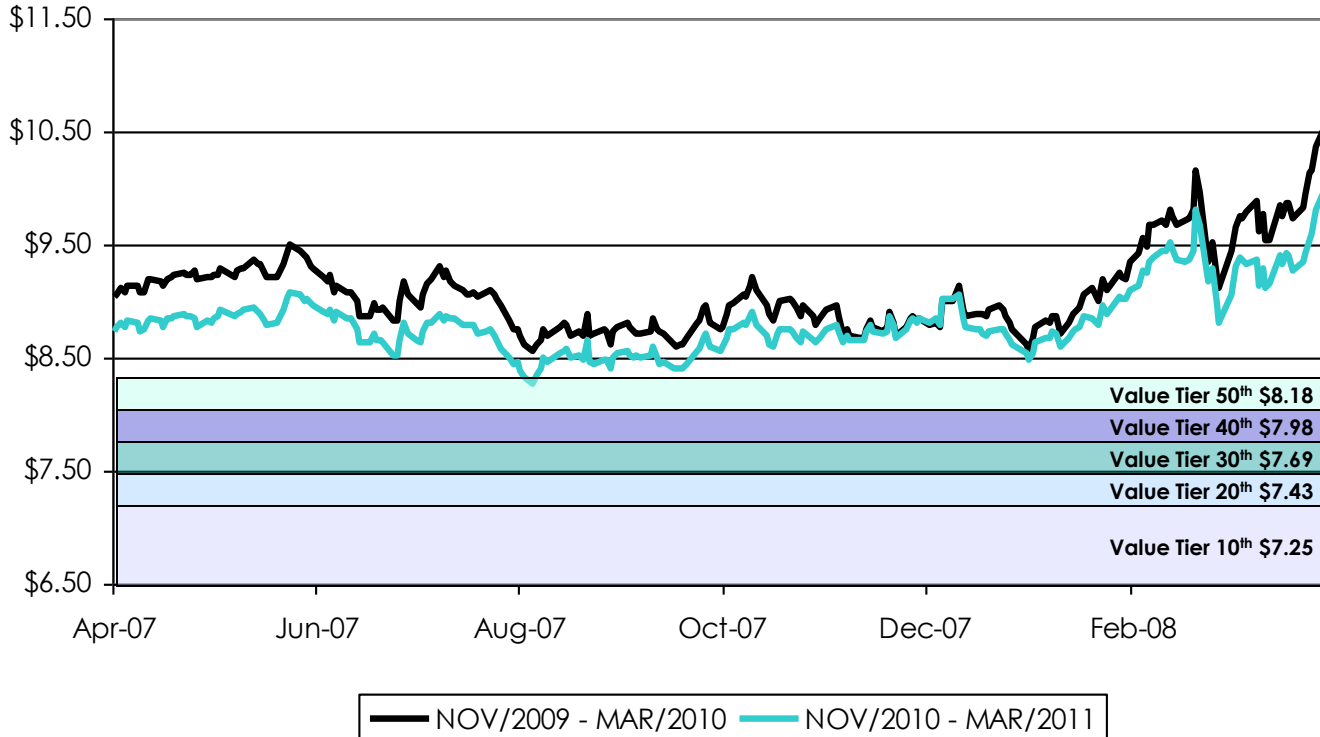
* Cumulative Totals

	VALUE TRIGGERS					TIME TRIGGERS				Total Purchased as of 4/23/2008
	Trigger 1 50 th Decile	Trigger 2 40 th Decile	Trigger 3 30 th Decile	Trigger 4 20 th Decile	Trigger 5 10 th Decile	Trigger Dec07	Trigger Mar08	Trigger Jun08	Trigger Sep08	
Quantity	15%	30%*	45%*	60%*	75%*	10%	20%*	30%*	40%*	20%
Price	\$8.18	\$7.98	\$7.69	\$7.43	\$7.25	\$8.80	\$10.97			\$9.884



GENERIC WINTER 2010-2011 STRIP HEDGE PLANS

Natural Gas Winter Strips 2009 - 2011



ASSUMPTIONS:

1. Time Triggers, Value Triggers and Volumes Hedged will vary depending on customer's risk tolerance
2. The use of options can further diversify this pricing portfolio

VALUE TRIGGERS	2010	2011
50th Decile		
40th Decile	10%	
30th Decile	10%	10%
20th Decile	10%	10%
10th Decile	10%	10%
TOTAL	40%	30%



NEW “RULES” OF HEDGING

1. Better Define and Refine Your Objectives
2. Acknowledge and Adjust to Extraordinary Variables, e.g. Economical and Political Events
3. Utilize a More Mechanical and Quantifiable Approach
4. Compartmentalize Your Use of Discretion
5. Think Beyond the Current Year