

Natural Gas Risk Management- Developing a Strategy

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General Thoughts

“What Are You More Afraid Of?”

Fixing Your Energy Price & Then Prices Fall

OR

Not Fixing Your Price & Then Prices Rise

**Your Answer Determines What Kind of Buyer
You Are – Conservative or Aggressive**

- **Remember – Be True to Your Philosophy**

General Thoughts

“The art of business is managing risk”

Determine and Keep in Mind . . .

Are you Conservative or Aggressive?

How much time to devote to managing energy risk.

How much is energy to your companies bottom line?

Can your company pass along energy price increases?

How much risk does your company want to take?

Can I accomplish my budget with this hedge?

Don't lose sight of your goals.

“ Business is nothing if not a speculative risk”

General Thoughts

2008 IS Crisis & Risk Management

Building a Strategy = Managing Energy

Now is the time to plan for:

Winter '08-'09 - Short-Term

1-2 Years - Mid-Term

3-6 years - Long-Term

Create an Energy Conservation / Resource Plan

We are the Stewards of our Companies'

Energy - Explore Viable Alternative Energy

Options

General Thoughts

You MUST Think/Act Differently in a Bear vs. a Bull Market

Sample Goals . . .

Hedge Bottom of Market

Beat NYMEX Settlement

*Set/Meet/Beat Budget

Avoid Super Price Spikes

*Beat Utility Prices

Beat Last Year's Spend

Keep Spending Flat

The two most common goals – sometimes competing
Beating Utility Prices in Ohio becoming less important

General Thoughts

Impact of Gas Prices on Profitability

Why Buyers Hedge

		Price Change														
		5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%
Gas Cost As A Percent of Total Cost	3%	0.15%	0.30%	0.45%	0.60%	0.75%	0.90%	1.05%	1.20%	1.35%	1.50%	1.65%	1.80%	1.95%	2.10%	2.25%
	5%	0.25%	0.50%	0.75%	1.00%	1.25%	1.50%	1.75%	2.00%	2.25%	2.50%	2.75%	3.00%	3.25%	3.50%	3.75%
	8%	0.40%	0.80%	1.20%	1.60%	2.00%	2.40%	2.80%	3.20%	3.60%	4.00%	4.40%	4.80%	5.20%	5.60%	6.00%
	10%	0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%	6.00%	6.50%	7.00%	7.50%
	15%	0.75%	1.50%	2.25%	3.00%	3.75%	4.50%	5.25%	6.00%	6.75%	7.50%	8.25%	9.00%	9.75%	10.50%	11.25%
	20%	1.00%	2.00%	3.00%	4.00%	5.00%	6.00%	7.00%	8.00%	9.00%	10.00%	11.00%	12.00%	13.00%	14.00%	15.00%
	25%	1.25%	2.50%	3.75%	5.00%	6.25%	7.50%	8.75%	10.00%	11.25%	12.50%	13.75%	15.00%	16.25%	17.50%	18.75%

Note:

The above chart exhibits the impact of gas prices on your overall bottom line profits if you do not or can not pass on gas price increases or decreases to your customers. For Example, if gas prices make up to 8% of your total production costs and gas prices go up or down 25%, this will affect your overall profit with a resultant loss or gain of 2% respectively.

General Thoughts

Because Second Guessing is Rampant:

Keep Track of...

Why You Did

What You Did

When You Did It

Long Term Planning

Why?

- **Projected long-term Supply vs. Demand imbalance – working very hard to “keep up” with demand.**
 - **Volatility will remain high**
 - **Gas still the choice for clean fuel – growth still projected.**
 - **Next few years prices are “flat” or “backwardated”**
 - **Bounced off of the “bottom” – watch for correction**
-
- **What are your energy conservation requirements on payback or return on investment? Still requiring 1 year simple payback?**

Hedging - Physical or Financial

Physical

- Contract - NAESB, GISB, etc.

Financial

- Contract - ISDA - Legal, Credit

Accounting

- FASB 133 – Is it an “effective” hedge?

Building a Winning Energy Strategy – Who to Turn To

Energy to Bottom Line – Politics & Importance

Internal

- Engineering/Operations, Purchasing, Management
- Corporate – Energy Manager, Purchasing, CFO, CEO

External

- Considerations –
 - **Costs**
 - **How Much Time Do You Spend on Energy?**
 - **What Support Do You Need?**
 - **What Can They Say?**
 - **How Many People Do You Want Involved?**

The Players

- Energy Managers
- Marketers
- Banks
- LDCs
- Producers
- Hedge Funds

Managing Energy Risk

- Price
- Supply
- Tariff – LDC Balancing
- Weather

Target Pricing & Goal Deadlines

- Establish Target Pricing in Strategy
- Have Deadlines or “Drop Dead Dates”.

Price: Key Drivers

FUNDAMENTAL INFLUENCES

- Supply & Demand
- Weather
 - Winter Cold
 - Summer Heat
 - Hurricane Outages
- Interstate Pipeline Capacity
- Storage Levels

TECHNICAL INFLUENCES

How the market behaves numerically, on charts & graphs

How do we look vs. '07?

2007

- Jan. NYMEX at \$5.84; Mar. at \$7.55; May at \$7.508; Storage at 1,511 BCF on 3/30
- Warm early winter-Cold after mid-Jan
- Winter 07/08 “strip” at \$9.53
- Rig count at 1,458
- Production still not keeping up with Demand. TXU only building 3 of 11 coal plants & Ethanol growth. Continued demand destruction.
- Storage should get to 3,300 BCF by 10/31.
- Oil at ~\$62/barrel

2008

- Jan. NYMEX at \$7.172; Mar. at \$8.93; May at \$11.26; Storage at 1,234 BCF on 3/30.
- Steady cold Winter
- Winter 08/09 “strip” at \$12.39
- Rig count at 1,475
- Production strong, but strong demand ... electric generation & ethanol. Weak Economy wild card.
- Storage should get to 3,400 BCF by 10/31.
- Oil at ~\$125/barrel

Pricing/Buying

Price Options

BASIC PRICING TOOLS

- Daily/Monthly Market Pricing - Floating
- Fixed Pricing – NYMEX & Basis(Transport)
- Peaking/Storage Services

ADVANCED PRICING TOOLS

- Ceiling/Floor Pricing - Options
- Guaranteed Savings vs. non-Transport tariff
- Burner-tip Pricing

Things to Watch

Bullish Factors

- **Gas in Storage – Lower start to refill bigger hole**
- **Dollars Shifting from Equities to Commodities**
- **Weather – Summer heat; Hurricanes**
- **Weaker Dollar impacting LNG imports**
- **Cost of other fuels – Coal & Oil**

Bearish Factors

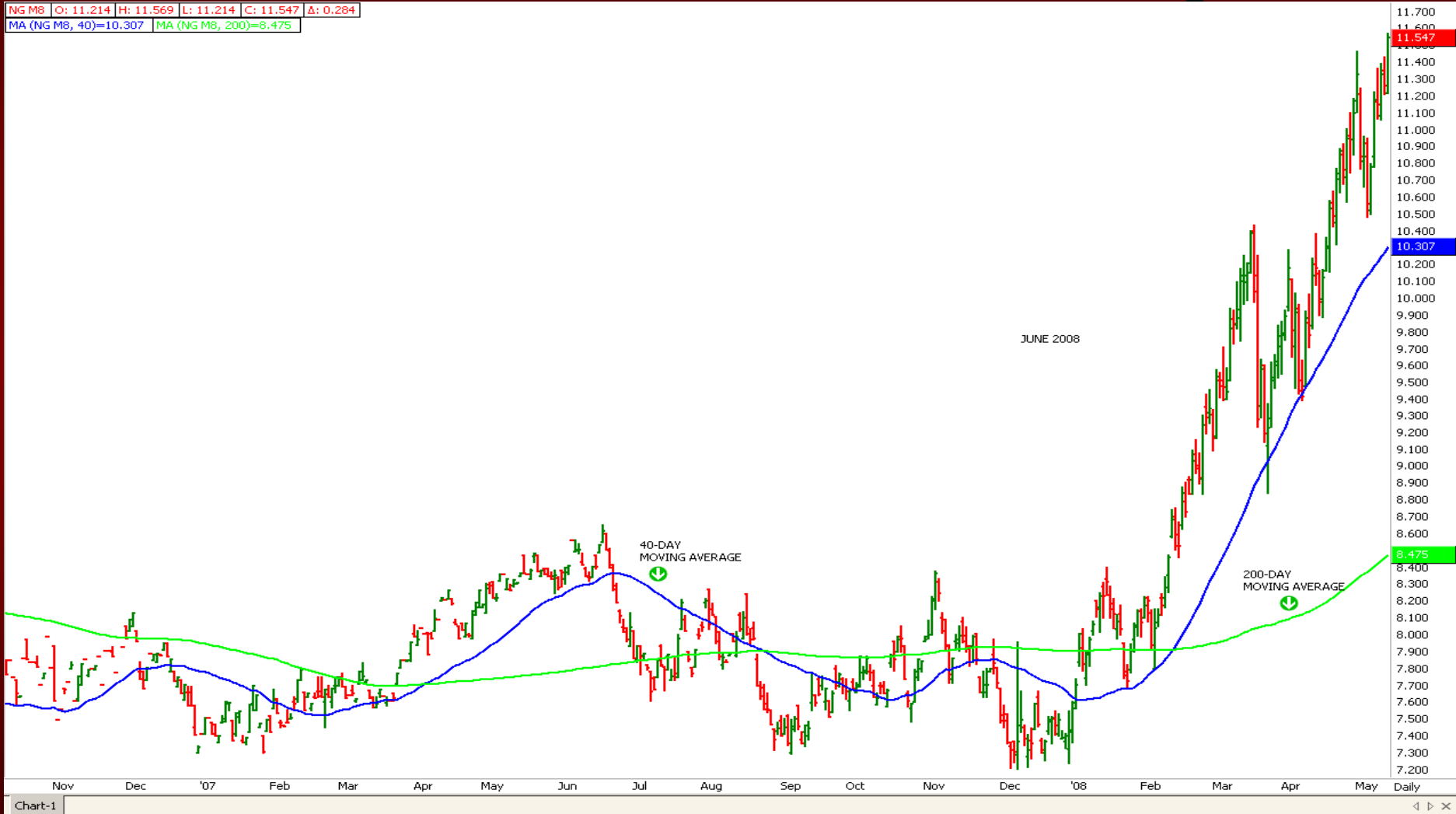
- **Weak Economy - Maybe**
- **Strong Production**

When To Expect a Technical Correction

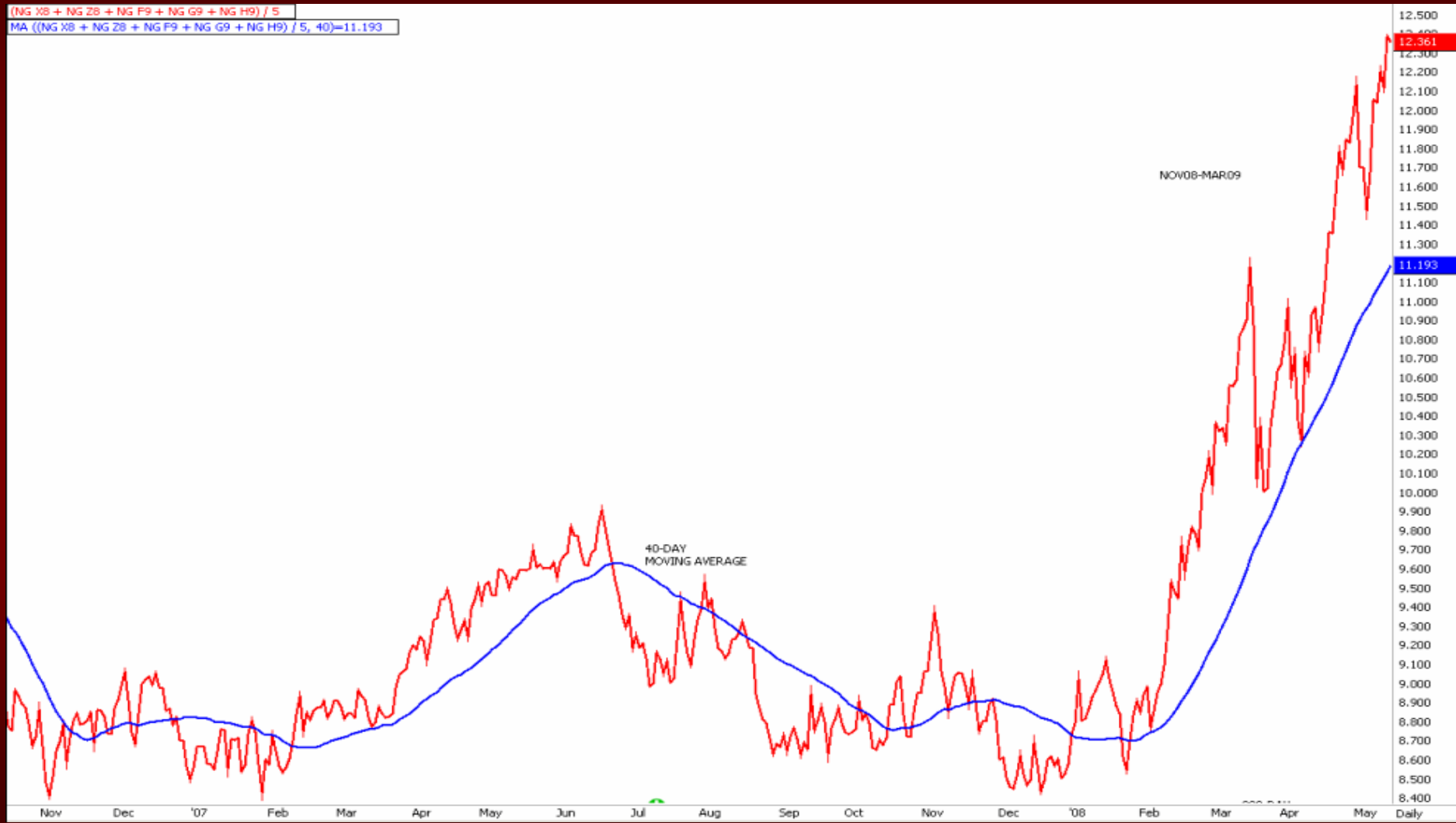
Definition

- **How the market behaves numerically, on charts & graphs**
- **Lots of day-to-day influence on price movement.**
- **Many Funds use “technicals” to drive their buying and selling.**
- **The Market eventually returns to prices as dictated by fundamentals.**
- **Could be lots of movement or “noise” till then.**

Front Month Strip



Winter '08-'09



Spring/Summer "Corrections"

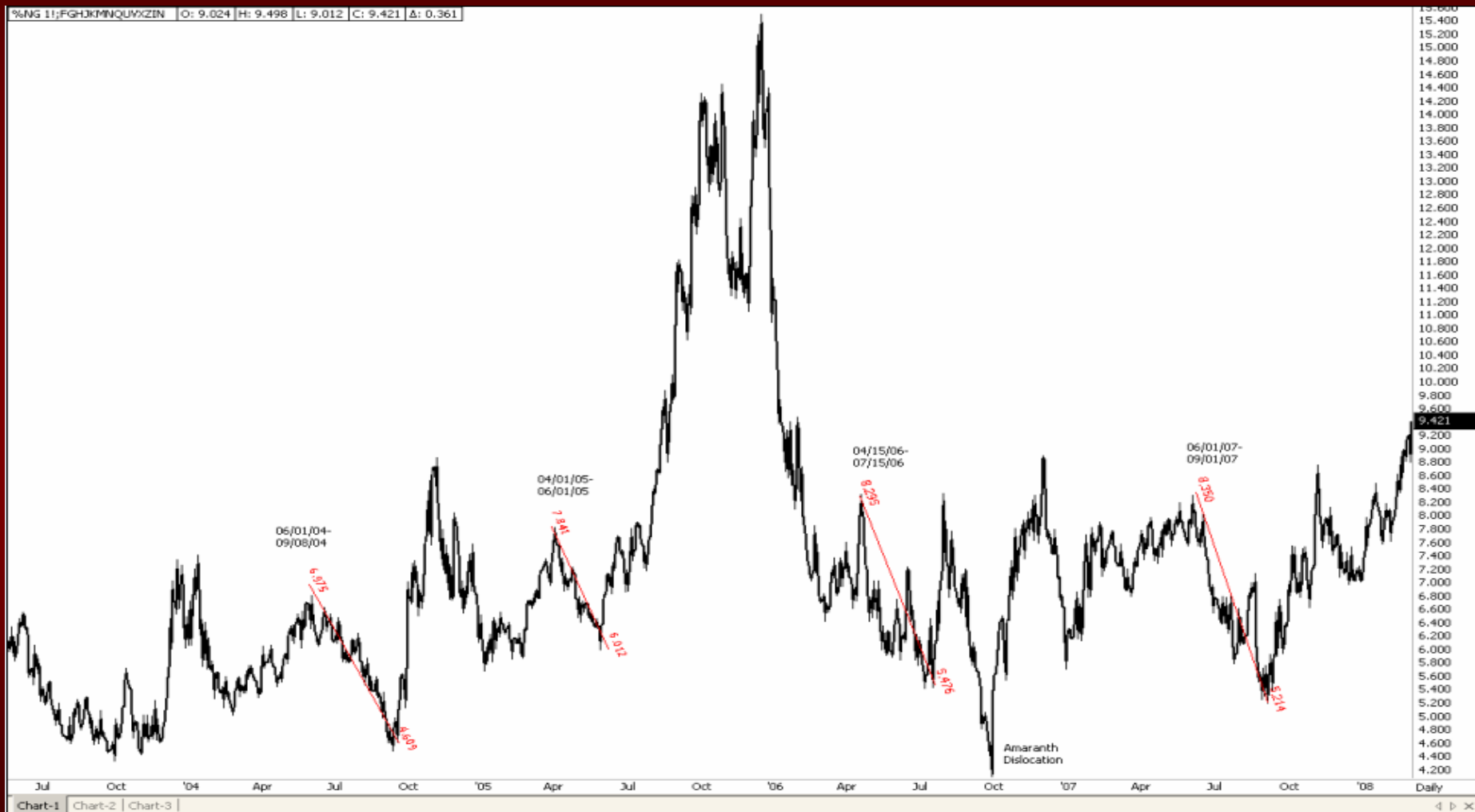


Chart-1 | Chart-2 | Chart-3

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Crude Oil vs. Natural Gas-Front Month

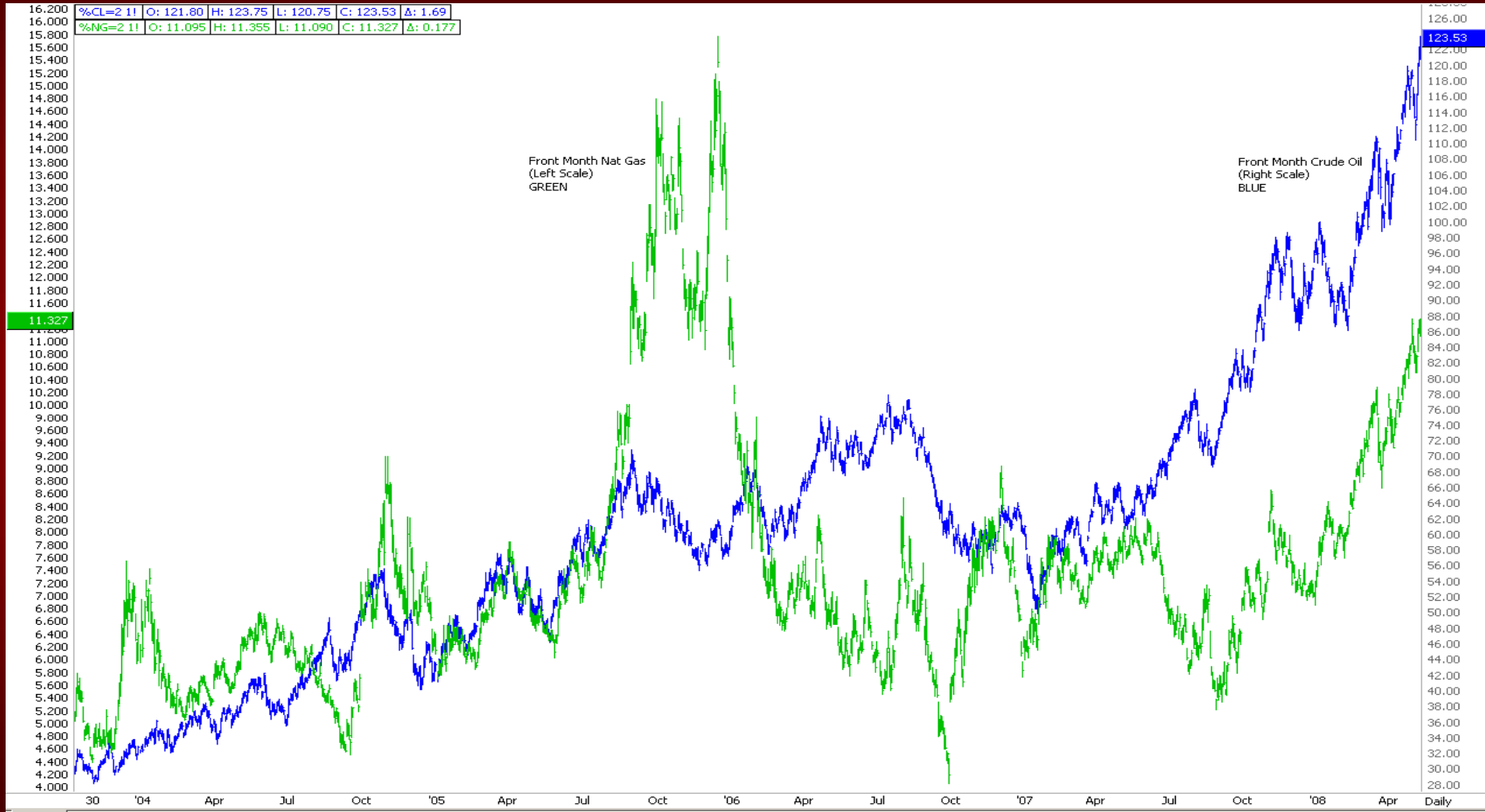
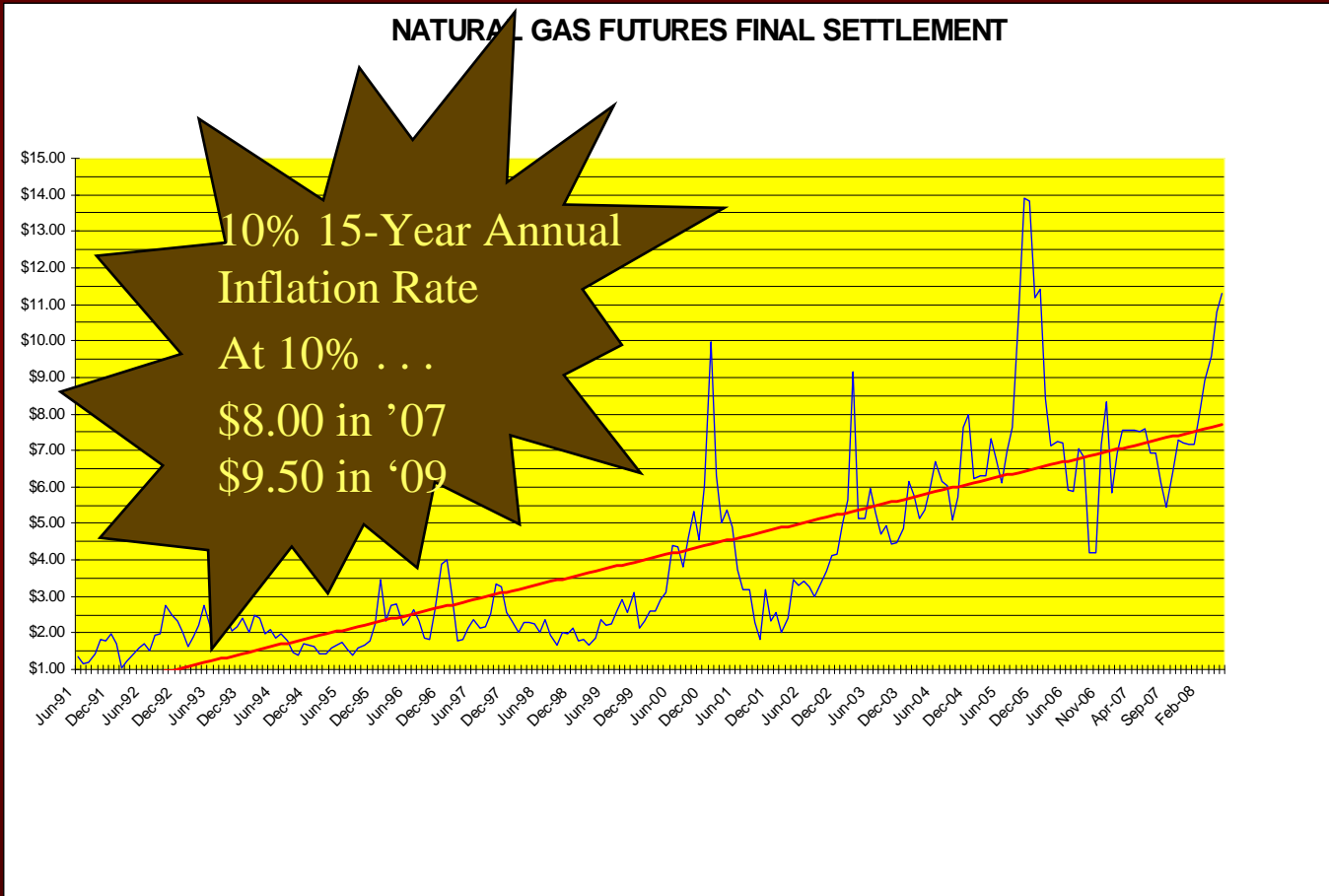
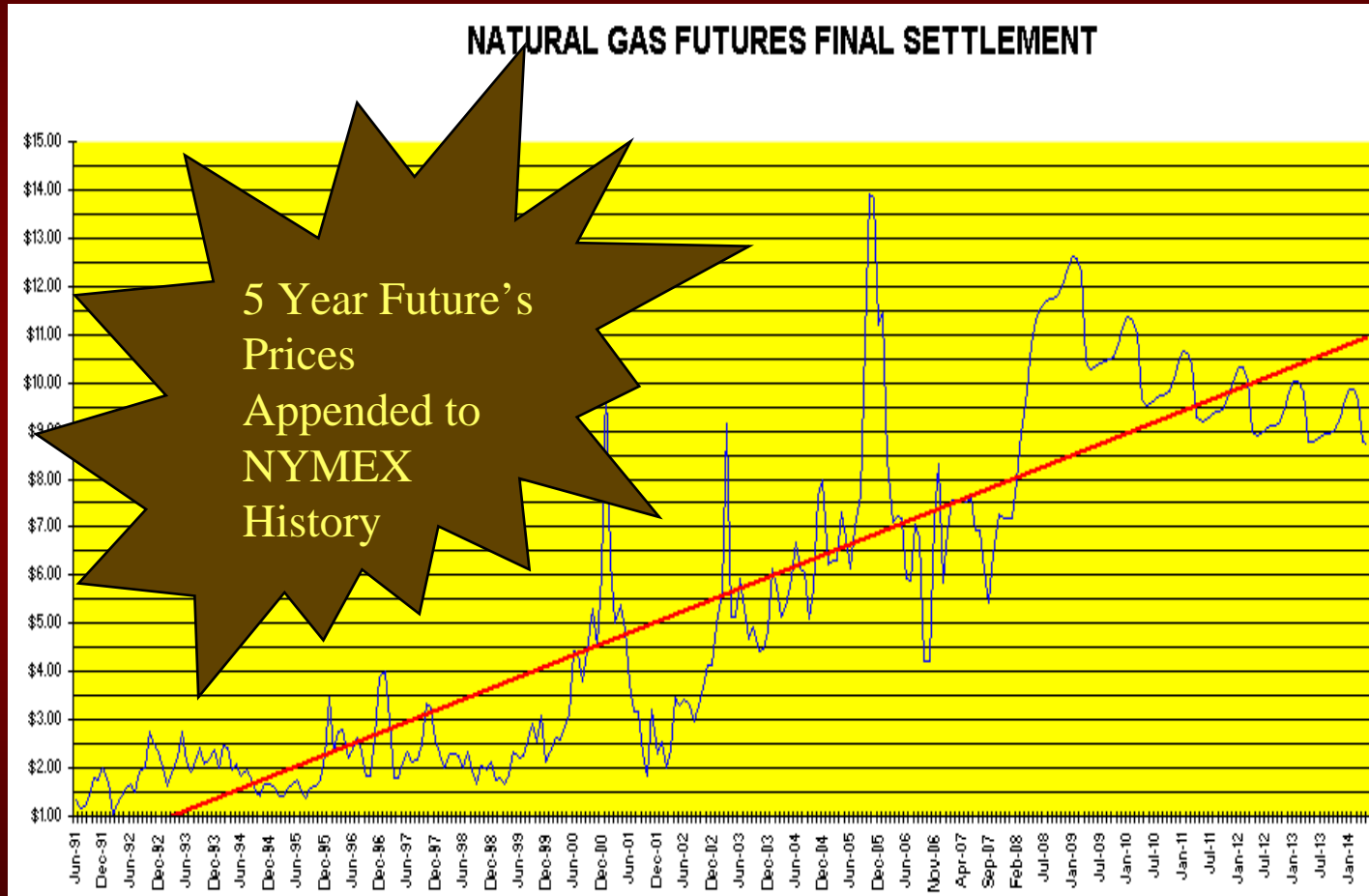


Chart-1

NYMEX History



NYMEX History



Pricing Trends

As of 5/09/08:

- Winter '08-'09 – \$12.36
- Possible Range for Winter prices \$9 - \$15
- PIRA Forecast: Winter \$10 - \$11.75

As of 5/09/07:

- Winter '07-'08 - \$9.53
- Possible Range for Winter prices \$5 - \$11

As of 5/09/06:

- Winter '06-'07 - \$10.75

Pricing Trends

The Trend is Your Friend!

Best time to buy is late winter/early spring – before April 1st... But, watch for “fall dip”

NATURAL GAS (NYMEX) FUTURES FINAL												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
1990						1.554	1.510		1.426	1.555	1.970	2.380
1991	2.046	1.538	1.395	1.391	1.350	1.336	1.417	1.195	1.420	1.800	1.772	1.987
1992	1.695	1.046	1.249	1.418	1.596	1.685	1.717	1.939	1.987	2.743	2.499	2.332
1993	2.003	1.634	1.906	2.224	2.758	2.417	1.918	2.121	2.401	2.066	2.155	2.385
1994	2.022	2.470	2.418	1.981	2.076	1.851	1.966	1.789	1.484	1.406	1.683	1.661
1995	1.639	1.416	1.428	1.566	1.712	1.757	1.532	1.385	1.575	1.644	1.772	2.241
1996	3.448	2.340	2.746	2.779	2.214	2.361	2.646	2.322	1.853	1.828	2.652	3.901
1997	3.998	2.986	1.780	1.807	2.122	2.346	2.145	2.161	2.515	3.346	3.266	2.577
1998	2.309	2.001	2.286	2.300	2.262	2.017	2.358	1.942	1.672	2.031	1.972	2.149
1999	1.765	1.810	1.666	1.852	2.348	2.226	2.262	2.601	2.912	2.560	3.092	2.120
2000	2.344	2.610	2.603	2.900	3.089	4.406	4.369	3.820	4.618	5.312	4.541	6.016
2001	9.980	6.293	4.998	5.384	4.891	3.738	3.182	3.167	2.295	1.830	3.202	2.316
2002	2.555	2.006	2.388	3.472	3.319	3.420	3.278	2.976	3.288	3.686	4.126	4.140
2003	4.988	5.660	9.133	5.146	5.123	5.945	5.291	4.693	4.927	4.430	4.459	4.860
2004	6.150	5.775	5.150	5.365	5.935	6.680	6.141	6.048	5.082	5.723	7.626	7.976
2005	6.213	6.288	6.304	7.323	6.748	6.123	6.976	7.647	10.847	13.907	13.832	11.180
2006	11.431	8.400	7.112	7.233	7.198	5.925	5.887	7.042	6.816	4.201	7.153	8.318
2007	5.838	6.917	7.547	7.558	7.508	7.591	6.929	6.110	5.430	6.423	7.269	7.203
2008	7.172	7.996	8.930	9.578	11.280							

Pricing/Buying

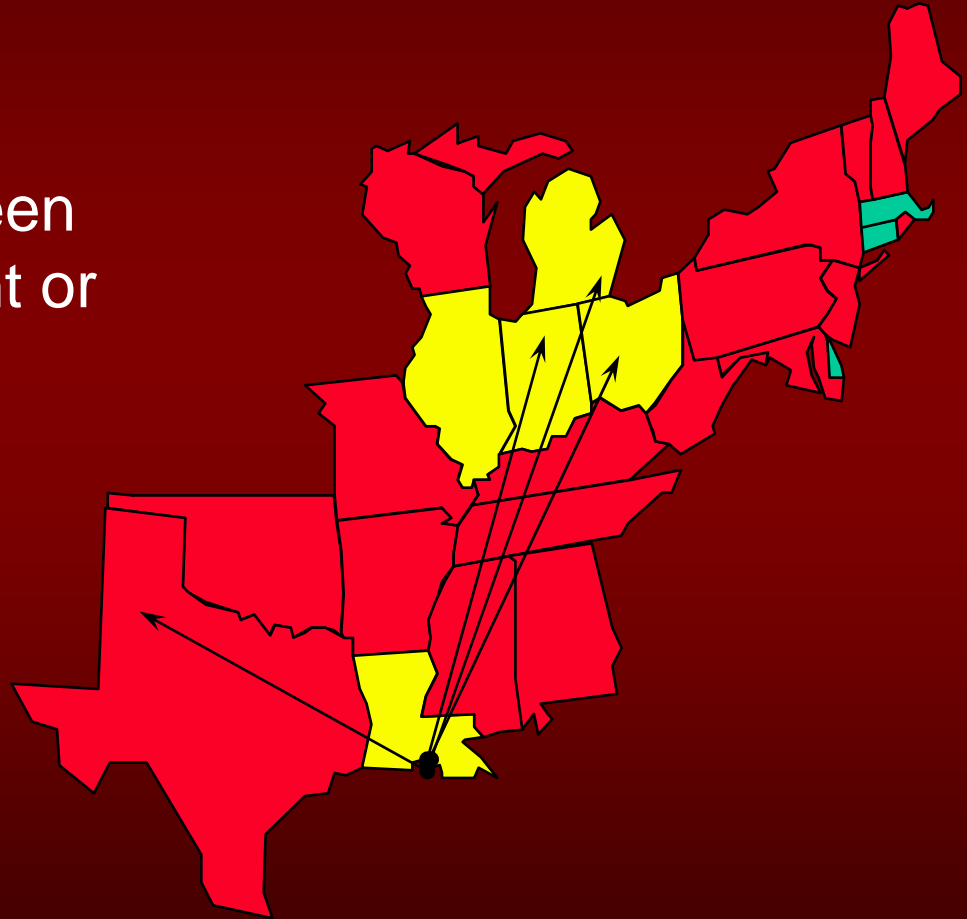
Basic Equation

- NYMEX = Commodity
 - New York Mercantile Exchange – Price at the Henry Hub, LA
- Basis = Financial Transportation
 - Difference in value between Henry Hub and Delivery Point
- NYMEX + Basis = Locational Pricing
 - Can be purchased separately or together

Pricing/Buying

What is Basis?

Price Differential Between
Henry Hub & Your Plant or
Purchase Location



Pricing/Buying

Developing a Price Strategy

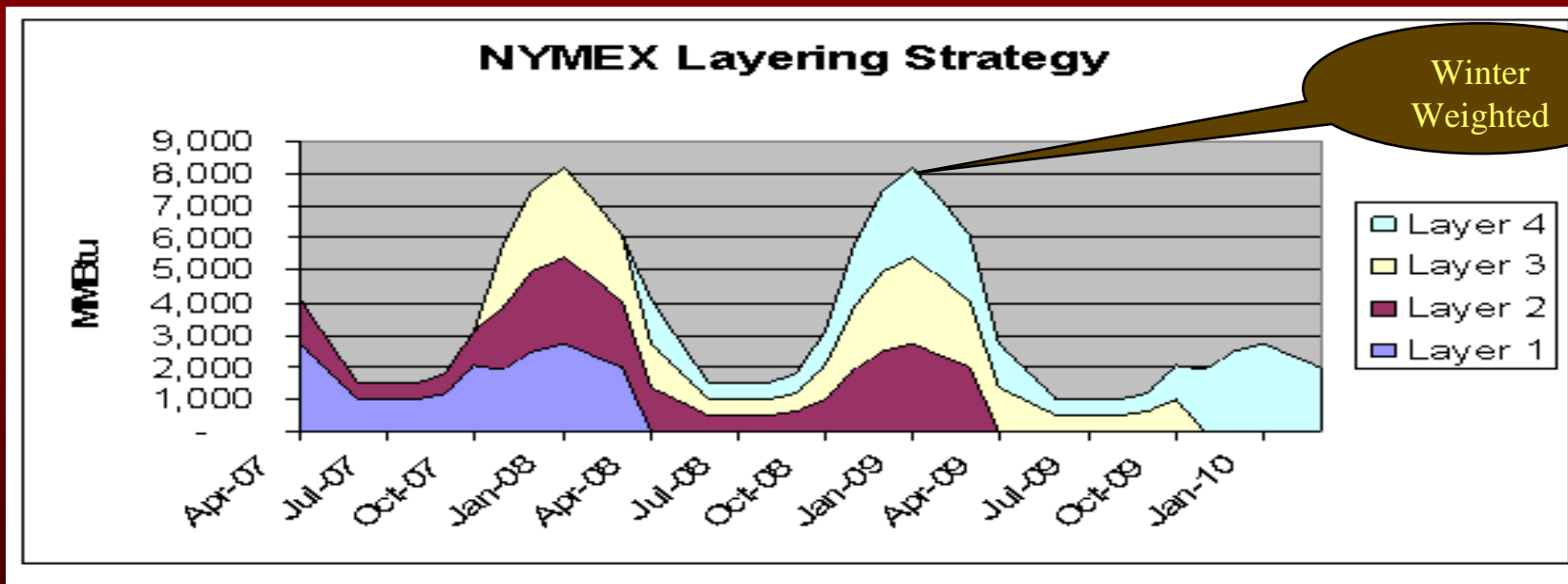
- Establish a Ceiling Price
- Develop a Portfolio of Options
 - If you “layer in” hedges (25%, 33%, 50%, etc), assuming you are under budget with the first layer(s), you can get more aggressive with the later hedges
- Determine Level of Risk Tolerance
- Monitor Market & Act – Change targets if market dictates, but don’t change your buying philosophy

Pricing/Buying

Layering

Strategies are end-user specific.

Example of a 4-layer strategy – 50,000 MMBtu/yr



Pricing/Buying

Options on Futures

Date: 5/09/08

Winter '08/'09

Current Market cost

\$12.30

Option Cost

\$9.00 floor/put

-\$0.34

\$10.00 floor/put

-\$0.62

\$13.00 ceiling/call

\$1.62

\$15.00 ceiling/call

\$1.11

\$20.00 ceiling/call

\$0.49

* Price based on underlying Futures price.
* Priced and expire monthly.

Placing an Order

Clearly Describe Your Plan

- Limit Order - “No Higher Than “x” ”
Hardest to execute, especially with “odd lots”.
- Market Order - “Execute at Current Price “Now”
- Market-if-Touched Order - Execute at Current Price if...“My Target Price is Touched”

Placing an Order

Strategies

- Place Lower target price “just below” “support point”.
- Place Upper target price “just above” “resistance point”.
- NO “bottom feeding” orders without a “stop the bleeding” order, unless you can handle the “upside pain”.
- Hi/Low Range - Set Upper and Lower target price of “x/y”
- Upper and Lower Limit should be near equidistant from current market. Example... \$7.50 market - \$7 low / \$8 hi
- Can move target range down if market is moving down and Lower target price isn't hit. But, **this takes more monitoring.**

Action Plan

One Cancels the Other Order

Current NYMEX Market cost for 11/08 – 03/09 - \$12.36

	<u>Bottom</u>	<u>Top</u>	<u>Activation</u>
• Conservative Buyer:	\$10.25	\$10.75	\$10.50
• Moderate Buyer:	\$10.00	\$10.50	\$10.25
• Aggressive Buyer:	\$9.75	\$10.25	\$10.00

Also, consider “trailing stops” to follow market down.

Pools/Programs

Dollar Cost Averaging

- Buy a fixed percentage of your needs every month for the next 12, 18, or 24 months.
If 12 months...8%/mo
- Purchased on the 15th of each month rolling forward
- Better in a “Bull” Market than in a “Bear” Market

Pools/Programs

EnergyUSA Buying Pool Recommendations

EnergyUSA Target Pricing for 05.09.08

	NYMEX Settle	Conservative	Moderate	Aggressive	1 WEEK NYMEX CHANGE
Jun'08	\$11.537	\$9.45 - \$10.10	\$9.20 - \$9.70	\$8.90 - \$9.30	\$ 0.760
Jun'08 - Oct'08	\$11.695	\$9.45 - \$9.95	\$9.25 - \$9.75	\$8.90 - \$9.35	\$ 0.732
Nov'08 - Mar'09	\$12.390	\$10.20 - \$10.60	\$9.75 - \$10.00	\$9.50 - \$9.85	\$ 0.707
Apr'09 - Oct'09	\$10.415	\$8.50 - \$8.90	\$8.40 - \$8.75	\$8.25 - \$8.60	\$ 0.639
Nov'09 - Mar'10	\$11.118	\$9.00 - \$9.55	\$8.75 - \$9.20	\$8.50 - \$8.90	\$ 0.629
Apr'10 - Oct'10	\$9.666	\$8.25 - \$8.50	\$8.05 - \$8.35	\$7.80 - \$8.05	\$ 0.473

Targets held during "short-term" market moves

Action Plan

Strategic Thoughts

- We are in a “buy the dips” market.
- Summer ‘08 – watch for correction to low \$10s to mid \$9s
- Winter mid-\$10s would be a good start – long way off
- Watch for opportunity before summer heat potential.
- Emphasize short to med-term coverage and med to long-term initial layer.
- Construct a supply portfolio with possibly 3-4 layers/protective tools. Layers of 25% to 33%, each.
- As always, if it meets/beats your budget...Buy It!

Are You Conserving Where You Should?

Action Plan

“Drop Dead” Dates if Targets not Hit

- May 27th – If you don’t have a “first layer” for next winter.
- October 15th – End of injection season; Before market’s attention turns to winter; Before an early cold blast – Worst possibility for gas prices.

Action Plan

Evaluating Success

Were Objectives Met?

- Did We Beat Budget ?
- Did We Beat Tariff ?
- Costs Trending Lower ?
- Did Vendor Deliver High Quality Service ?

Success does not equal “beating the market”

Summary

Risk is Unavoidable – But **CAN** be Managed

- Like other Business Risks
- Without being a Trading/Supply/Tariff Expert
- If Objectives are Clearly Defined

Establish Plan, Budget, Price Forecast

Determine Level of Risk Tolerance

Monitor Market & Act – Revise Plan if Needed

- Once you act, **Don't Look Back!**