



Natural Gas Risk Management– Developing a Strategy

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What Are You More Afraid Of ?

Establishing a fixed energy price now and then watching gas prices fall?

Not establishing a fixed energy price and watching prices rise?

Your answers to these questions will help answer the question: Are You a Conservative or Aggressive Energy Buyer ?

Building A Winning Energy Strategy Involves Reducing Risk

- “The art of business is managing risk”
 - Always keep in mind... do you want to be Conservative or Aggressive in purchasing energy.
 - Determine 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 to your customers?
 - How much risk does your company want to take on your energy purchases? Achieve a desired risk profile.
 - Can I accomplish my budget with this hedge? – Don’t lose site of your goals.
- ³ – “ Business is nothing if not a speculative risk”



Building A Winning Energy Strategy - Who to Turn To

- Energy to Bottom Line – Politics & Importance
- Internal
 - Local - Engineering/Operations, Purchasing, Management
 - Corporate – Energy Manager, Purchasing, CFO, CEO
- External
 - Energy Manager – Post-Enron Lack of Trust Changing?
 - Energy Marketer

Managing Energy Risk

- Price
- Supply
- Tariff – LDC Balancing
- Weather

Developing a Price Strategy

- “I want the lowest price...” But, What does that mean?
The lowest price today could be the highest tomorrow
- Establish Goal
 - Match/Beat Budget
 - Match/Beat Last Year’s Price
 - 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
- EUSA – Hedge Managed Pool
- Determine Level of Risk Tolerance
- Monitor Market & Act – Change targets if market dictates, but don’t change your buying philosophy

Target Pricing & Goal Deadlines

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

Price Risk

– What Are My Price Options?

BASIC PRICING TOOLS:

- Daily/Monthly Market Pricing – Floating
- Fixed Pricing – NYMEX & Basis (Transport)
 - NYMEX – Last Day or Last 3-Day Settlement
 - NYMEX & Basis - Separately purchased or together
- Peaking/Storage Services

ADVANCED PRICING TOOLS:

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

Impact of Prices on Profits – Why Buyers/Sellers fix prices

	CHANGE IN PRICES					
	5%	10%	20%	30%	40%	50%
GAS AS % OF EXPENSE						
3%	0.002	0.003	0.006	0.009	0.012	0.015
5%	0.003	0.005	0.010	0.015	0.020	0.025
8%	0.004	0.008	0.016	0.024	0.032	0.040
10%	0.005	0.010	0.020	0.030	0.040	0.050
15%	0.008	0.015	0.030	0.045	0.060	0.075

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.



Price: Key Drivers – Winter Recap in Early March 2006 2007

- Jan. NYMEX at \$11.431, Mar. at \$7.112. Storage at 1,695 BCF on 3/30. Peak day at \$25 in Northeast, \$20 in Midwest.
 - Warm winter-Cold till mid-Dec
 - April NYMEX \$6.65 on 3/6
 - Winter 06/07 “strip” at \$9.85
 - Rig count at 1,304
 - Production still not keeping up with Demand. Fertilizers “on-line” & Ethanol growth. More “general” demand destruction.
 - Storage got to 3,440 BCF by 10/31.
 - Oil at \$63/barrel
- Jan. NYMEX at \$5.84, Mar. at \$7.55. Storage at 1,500 BCF (?) on 3/30. Peak day at \$60 in Northeast, \$20 in Midwest.
 - Warm early winter-Cold after mid-Jan
 - April NYMEX \$7.24 on 3/2
 - Winter 07/08 “strip” at \$9.01
 - 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 \$61.64/barrel

A Fundamental Recap

A BULLISH POINT OF VIEW

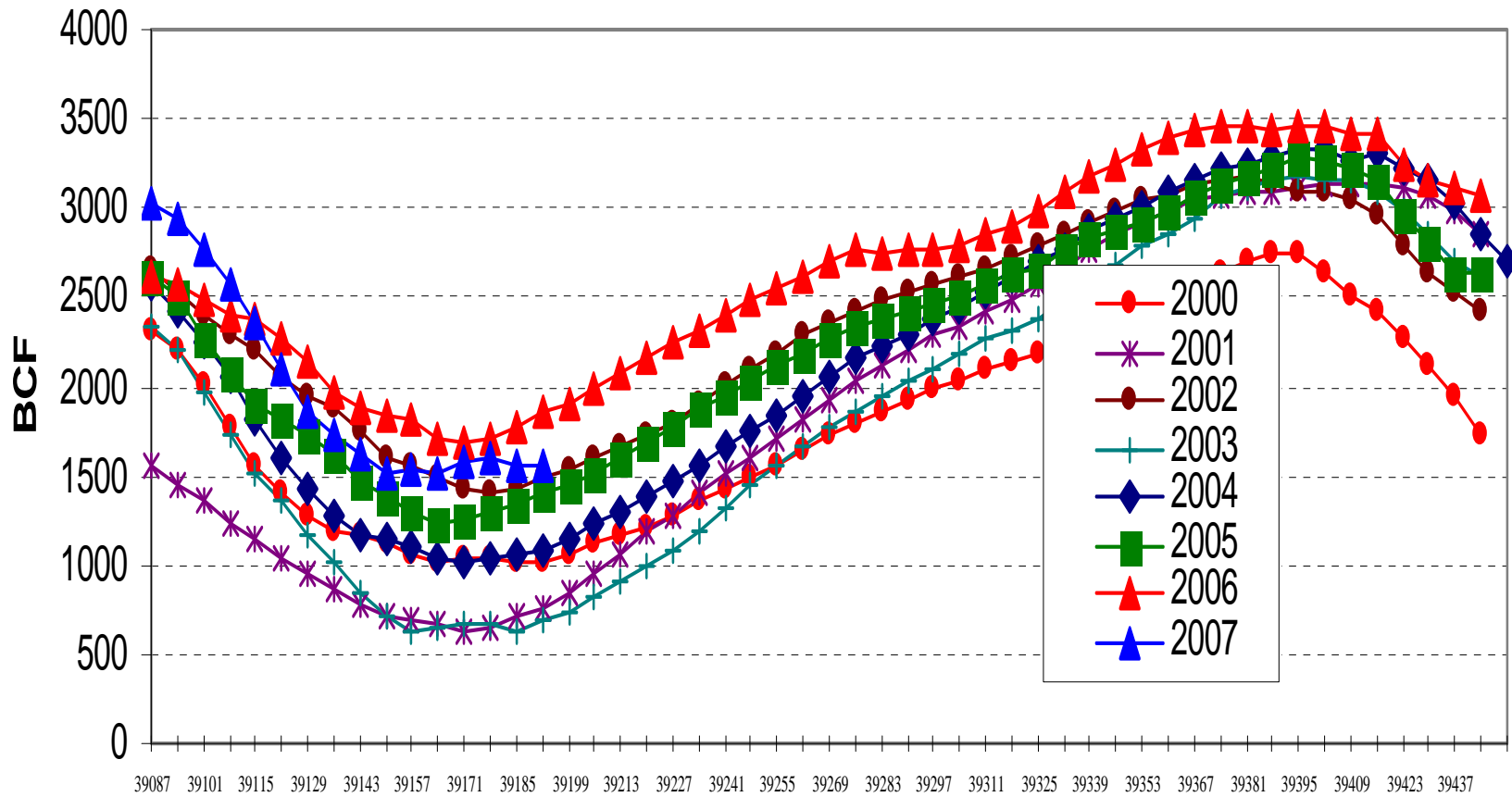
- Cold back-half of the winter & early-April “drew-down” storage hard. Created Demand to refill storage.
- We’ve seen the lows for the year?
- LNG not here in great amounts, yet. Not a savior.
- Oil is at \$65/barrel due to production area unrest – keeping “Floor” on Gas prices.
- Fear of hot summer–gas-fired electricity generation & More Hurricanes in summer/fall – La Nina developing?

A Fundamental Recap - continued

A BEARISH POINT OF VIEW

- Industrial Demand destruction helping to alleviate the tight fundamentals balance.
- Strong LNG imports
- Storage coming out of winter at ~1,500 BCF – above 5 yr average.
- Will fear of Global Warming finally lead to conservation and industrial/commercial “paybacks” longer than 1 year?

EIA GAS IN STORAGE



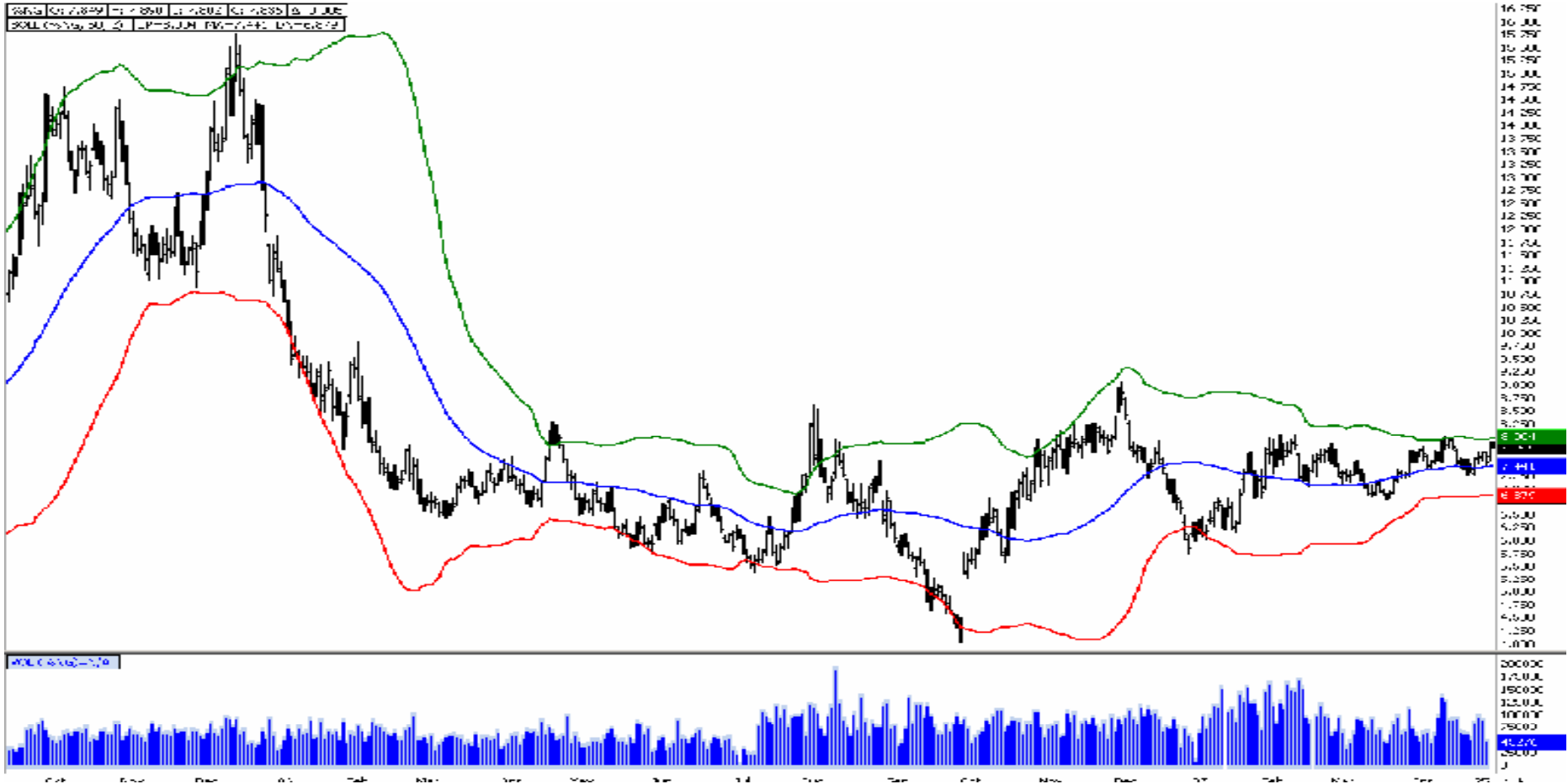
Technical Review –Front Month” Activity



Technical Look – Front Month Continuation Chart for 20 Months 04/25/07



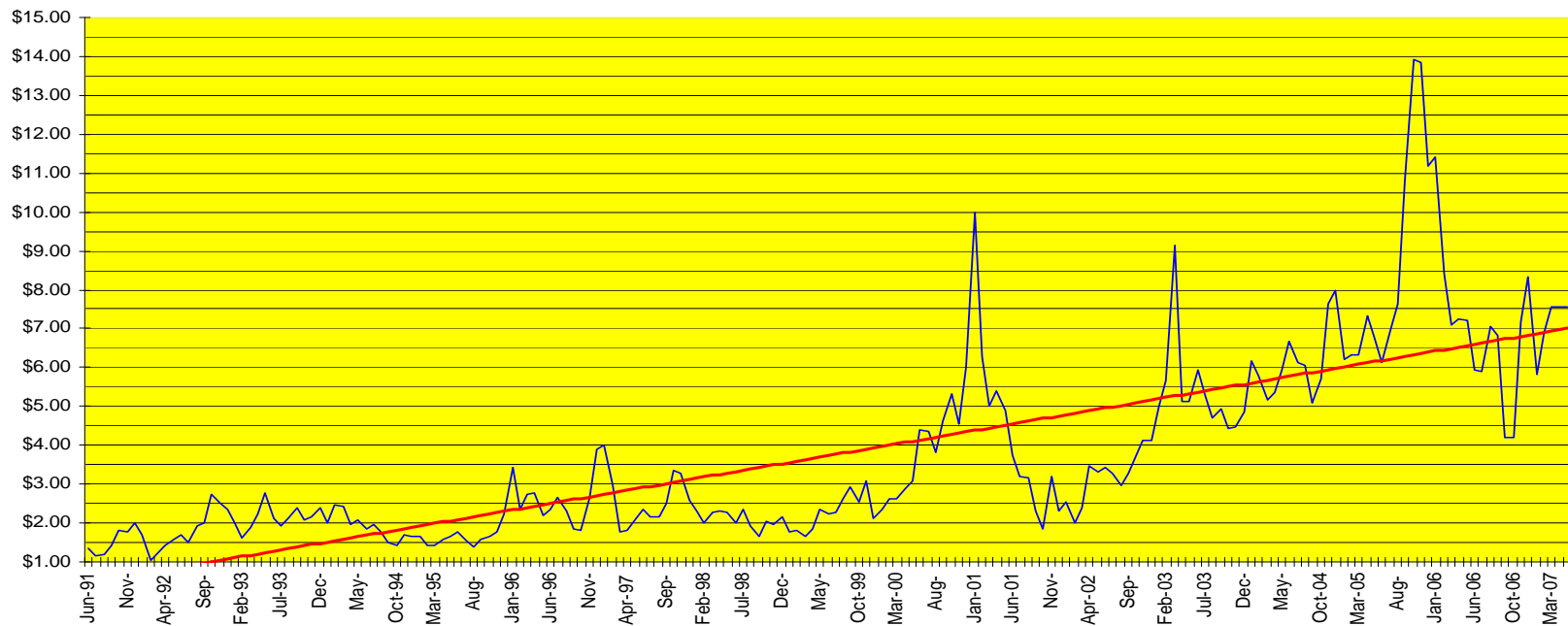
Technical Look – Monthly activity since Oct ‘05 on 04/30/07



— 50 Day Moving Average
 — Upper Level Implied Volatility
 — Lower Level Implied Volatility

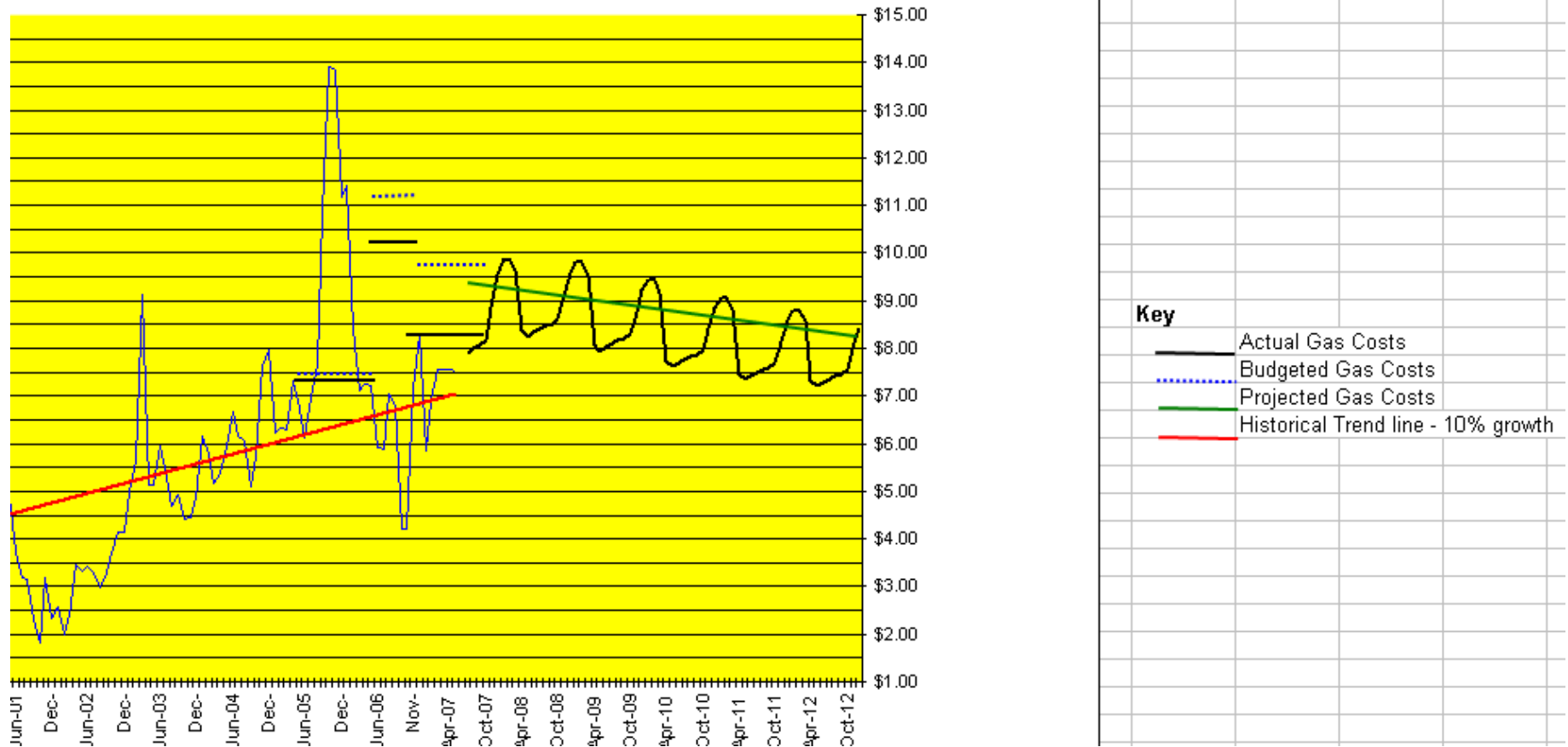
Technical Review – “Long Term” Activity 05/2007

NATURAL GAS FUTURES FINAL SETTLEMENT



Technical Review – “Long Term” Activity 05/2007

GAS FUTURES FINAL SETTLEMENT



EnergyUSA Pricing Forecasts

EnergyUSA Target Pricing for 04.27.07				
	NYMEX Settle	Conservative	Moderate	Aggressive
Jun'07	\$7.831	\$7.25 - \$7.50	\$7.00 - \$7.25	\$6.75 - \$7.00
Jun'07 - Oct'07	\$8.063	\$7.35 - \$7.60	\$7.15 - \$7.45	\$7.00 - \$7.20
Nov'07 - Mar'08	\$9.631	\$8.55 - \$9.00	\$8.15 - \$8.50	\$7.90 - \$8.15
Apr'08 - Oct'08	\$8.375	\$7.25 - \$7.75	\$6.95 - \$7.25	\$6.75 - \$7.05
Nov'08 - Mar'09	\$9.519	\$8.35 - \$8.85	\$8.00 - \$8.40	\$7.75 - \$8.15
Apr'09-Oct'09	\$8.057	\$6.85 - \$7.40	\$6.75 - \$7.15	\$6.60 - \$7.15

Hedging Alternatives: The Futures Market

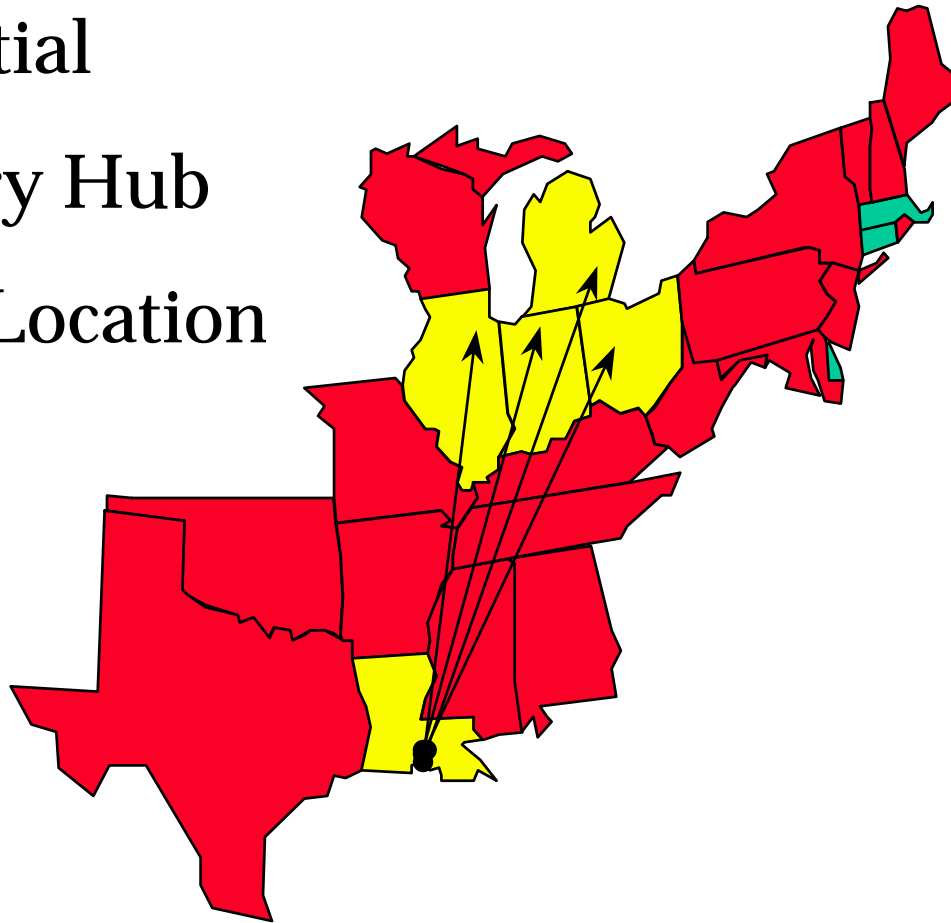
- Features of The Futures Market –
 - A Standardized Product with a Standardized Quantity and Delivery Point
 - Monthly Contracts with Monthly Expirations
- Uses of the Futures Market
 - Eliminate Price Risk
 - Speculate

The Fixed Pricing 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

Tools of the Trade - Basis

Price Differential
Between Henry Hub
& Your Plant Location



Hedging Alternatives

– Options on Futures

- Features of the Options Market
 - Options are based on the underlying futures contract
 - Options are priced and expire on a monthly basis
- Uses of the Options Market
 - Insurance
 - Speculation

Advanced Pricing - Options

- Ceilings, Floors – “Costless” or Low Cost Collars
- Fix a price with the option to participate if the market falls.
- Mix ceilings and floors to create the product you want.

Advanced Pricing - Options

Date: 4/30/07

Winter '07/'08-NYMEX or Option Cost

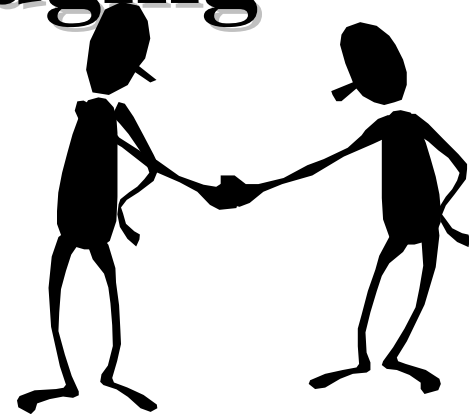
• Current Market cost	\$9.625	
• \$7.00 floor/put	-\$0.27	
• \$8.00 floor/put	-\$0.56	
• \$11.00 ceiling/call	\$0.95	
• \$12.00 ceiling/call	\$0.75	
• \$13.00 ceiling/call	\$0.60	
• \$15.00 ceiling/call	\$0.39	
• “Bull Call Spread”	\$13/\$11	+\$0.35
• “Bull Call Spread”	\$15/\$11	+\$0.56
• “Bull Call Spread” w/ floor	\$15/\$11/\$8	+\$0.00
• Costless Collar sample	\$12/8.5	

Taking Action - Hedging

PLACING AN ORDER

– Clearly Describe Your Plan

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



Taking Action - Hedging

PLACING AN ORDER - Continued

- Place Lower target price “just below” “support point”.
- Place Upper target price “just above” “resistance point”.
- Don’t put a “bottom feeding” order in without putting in 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
 - For Example... If \$8.50 market... \$8 lower, and \$9 upper
 - Can move Upper and Lower target down if market is moving down and Lower target price isn’t hit. But, this takes more monitoring.
 - “Stops”, “Trailing Stops”, “One-Cancels-the-Other”, “Activation Points”.

Taking Action - Hedging

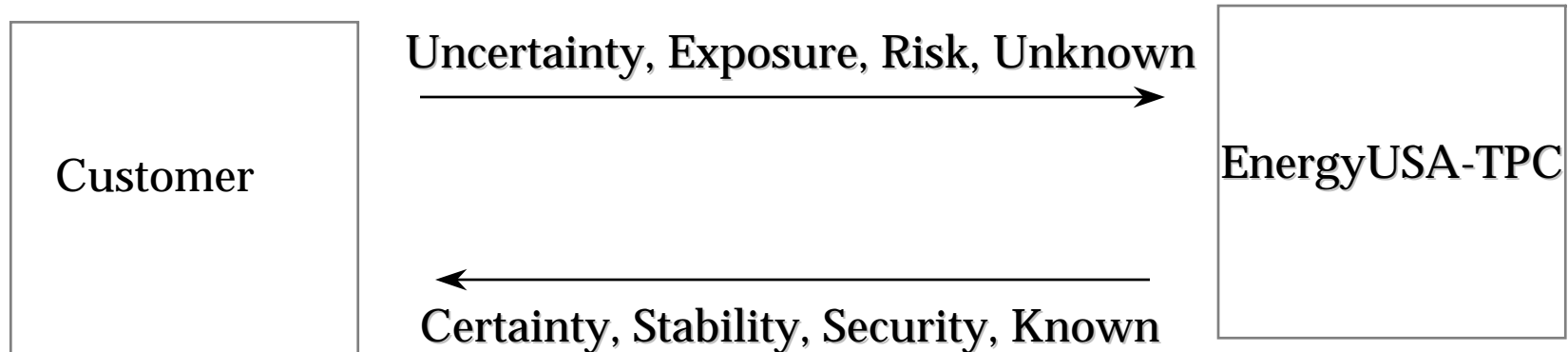
EVALUATING PROGRAM SUCCESS

- 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 - Hedging Benefits

- Reduces Uncertainty
- Adds Flexibility and Control

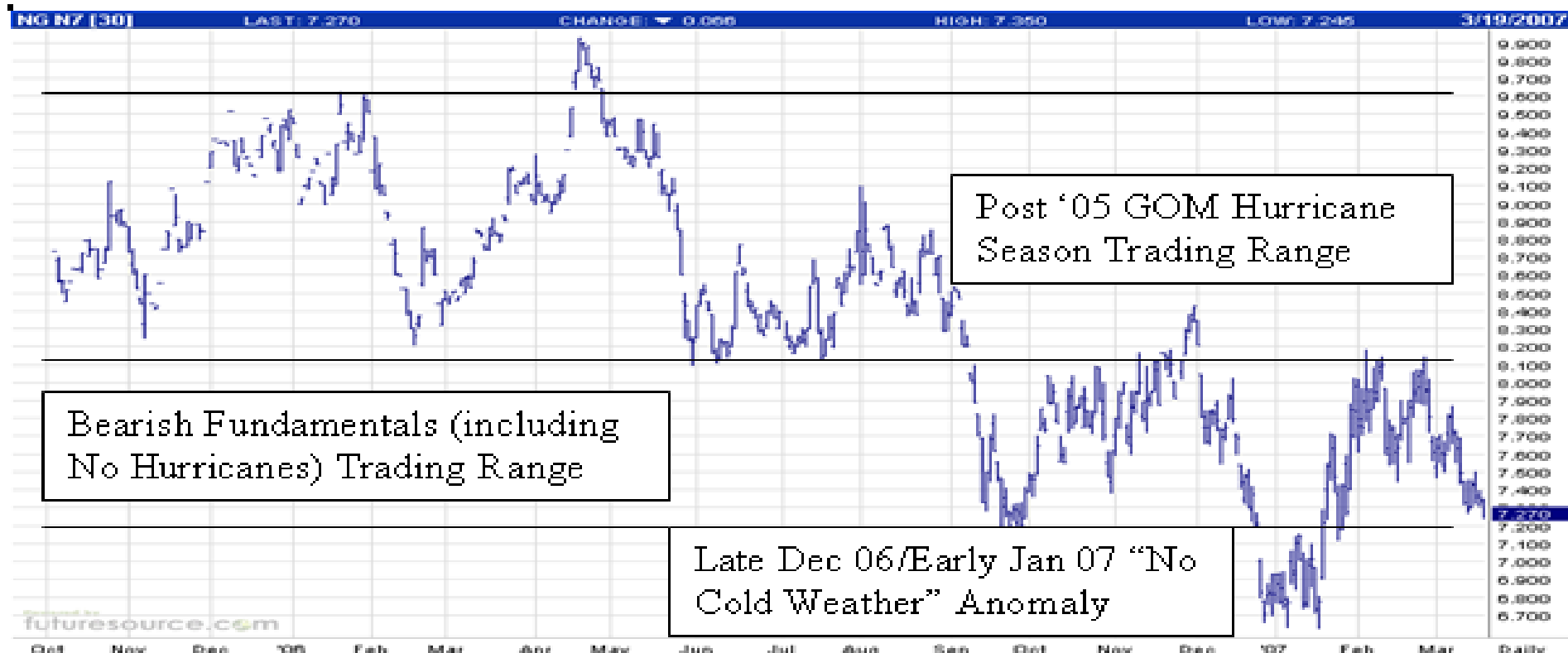


Strategic Plan – Sample page 1

EnergyUSA-TPC Spring 2007 Strategic Market Analysis
Natural Gas Observations and Thoughts
March 19, 2007

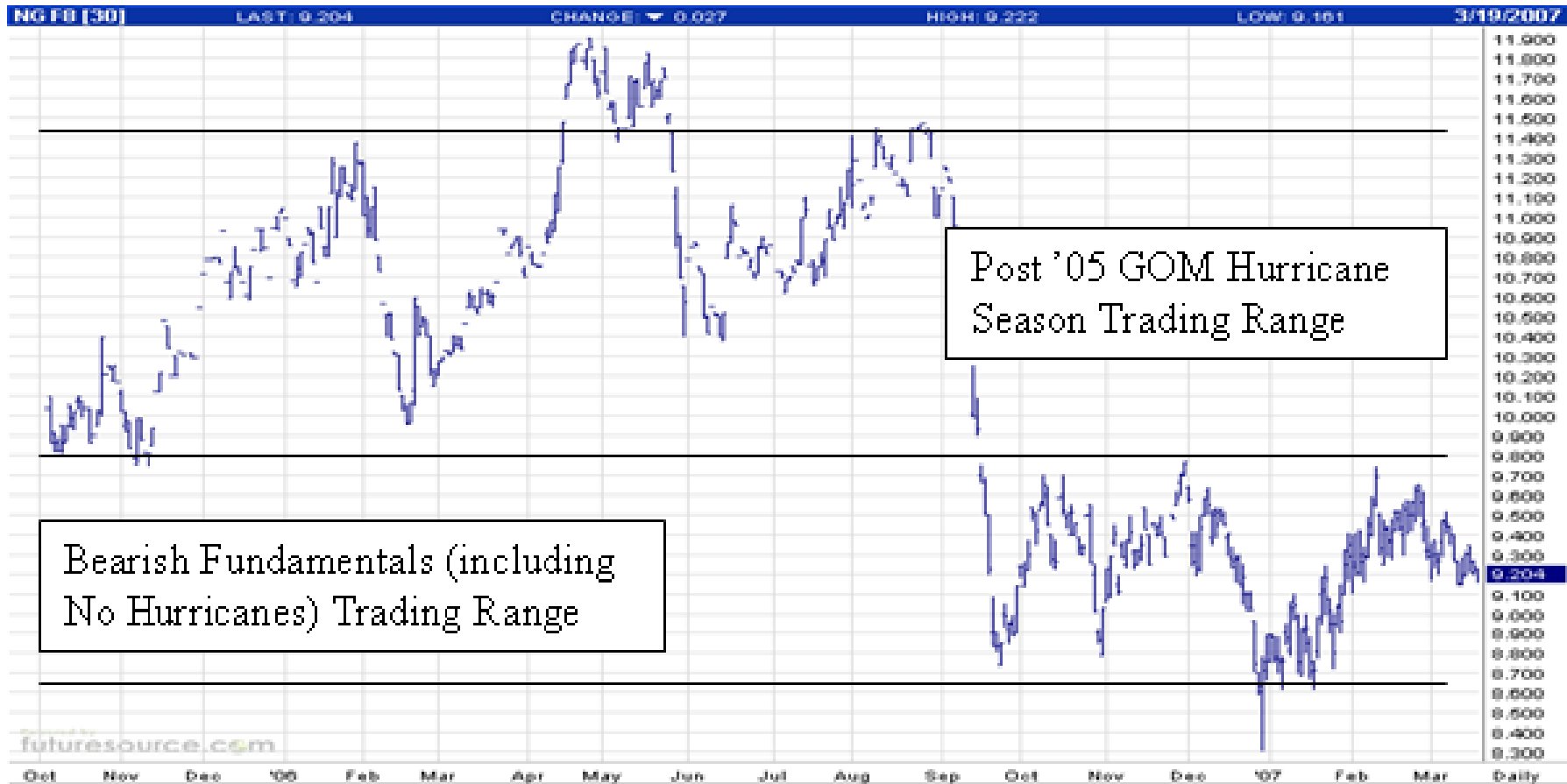
Short term: Bearish... An Apparent Opportunity

- Apr 07 \$6.85 (down \$1.00); Sum 07 \$7.25 (down \$0.65); Win 07/08 \$8.90 (down \$0.35)
- Strong front month support at \$7.05 has been breached. Support now exists at \$6.70, \$6.50, and \$6.35. A test of \$6.00 *could* occur, but a breach is *not* expected at this time.
- A front in the low-\$6.00's should be viewed as an excellent time to hedge *something...* in the mid-\$6.00's, a very good time.
- Prices are expected by many to grind lower in the short term (due to mild weather), possibly rally in early-Apr (with the release of '07 hurricane forecasts), and (hopefully) soften again later in April and May (prior to the arrival of hot summer weather).
- Please look at the first and second graphs, below (Sum 07 and Win 07/08 strip prices, respectively). *Note: Both strips have fallen back to levels close to their (no hurricanes) Sep 06 lows, as well as, their (no cold weather) late-Dec 06/early-Jan 07 lows.*



The above graph represents the Jul 07 NYMEX contract (typical of the Sum 07 strip).

- It took several months of mild weather and zero '06 GOM hurricanes for the *unprecedented* Sep 06 NYMEX price fall to occur;
- It took record full storage and near-record mild early Win 06/07 weather for the NYMEX price dip into the high-\$6.00's to occur;
- **Current prices are ~\$2.50 from the top of the range, < \$0.10 from the Sep 06 lows, and ~\$0.50 from the late-Dec 06/early-Jan 07 bottom.**

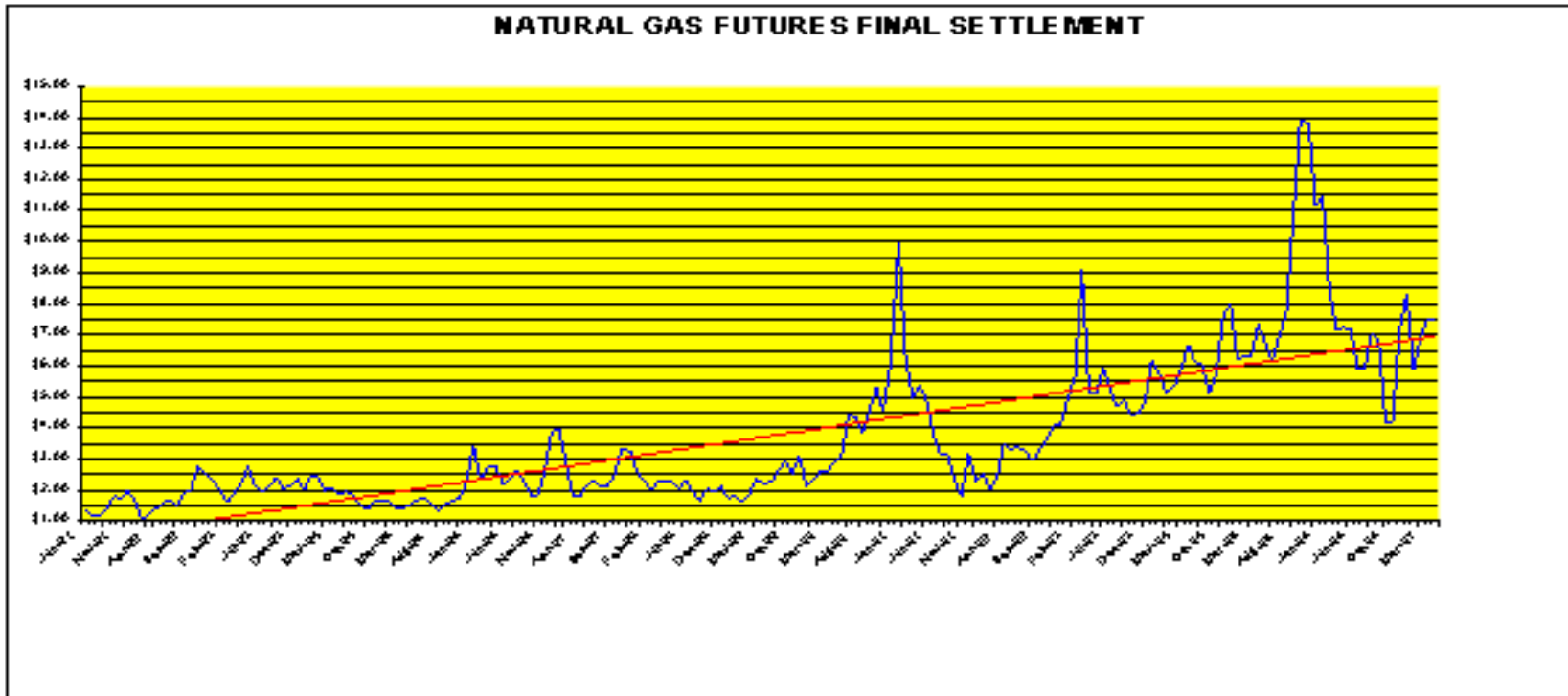


The above graph represents the Jan 08 NYMEX contract (typical of the Win 07/08 strip).

- **Current prices are ~\$2.50 from the top of the range, ~\$0.40 from the Sep 06 lows, and \$0.50 from the late-Dec 06/early- Jan 07 bottom,**

Long term: Bullish... Danger, Will Robinson

- *The consensus of our speakers at this month's Energy Conference was long term bullish.*
- The "likely" price range is \$6.50-\$12.50, but the "extreme" price range is \$5.00-\$20.00.
- Since 1999, **bear runs have lasted about one year.** *The current run is in its 15th month.* Since 1999, **bull runs have lasted two years, and each has included at least one price super spike.** Please look at the third graph, below (NYMEX settlements).
- Natural gas supply/demand is tightening again... bullish.
 - It now requires 25 rigs to produce 1 Bcf of NG per day (vs. 10 rigs in 2002).
 - Industrial demand is down 3% since 2004, but *electric generation demand is up 5.3%.*
 - **Last year, a hot July resulted in unprecedented summer storage withdrawals.**
 - This winter, a cold late-Jan/Feb turned a Y/Y storage surplus into a deficit in 6 weeks.
- The TXU decision (to scrap plans for 8 coal-fired electric generating plants) holds bullish implications for gas prices. These 8 plants not only represent the equivalent of 1.5 Bcfd of gas, but possibly a shift in opinion regarding the environmental viability of coal.



The above graph represents NYMEX settlements since futures began trading in '91.

- **Prices have trended up at a rate of ~10% annually for the past 15 years.**
- **At a ~10% annual “inflation” rate, \$8.00 in 2007 will be \$9.50+ in 2009.**

Goals/Objectives... An Important Reminder

- *Know (and remain true to) your goals/objectives.*
- *Sample goals:* Hedging the bottom of the market; beating NYMEX settlement; beating utility prices; beating last year's spend; setting/meeting/beating a budget; keeping spending flat; avoiding price super spikes; or a combination...
- *You have to think/strategize differently about a bull market than a bear one.*

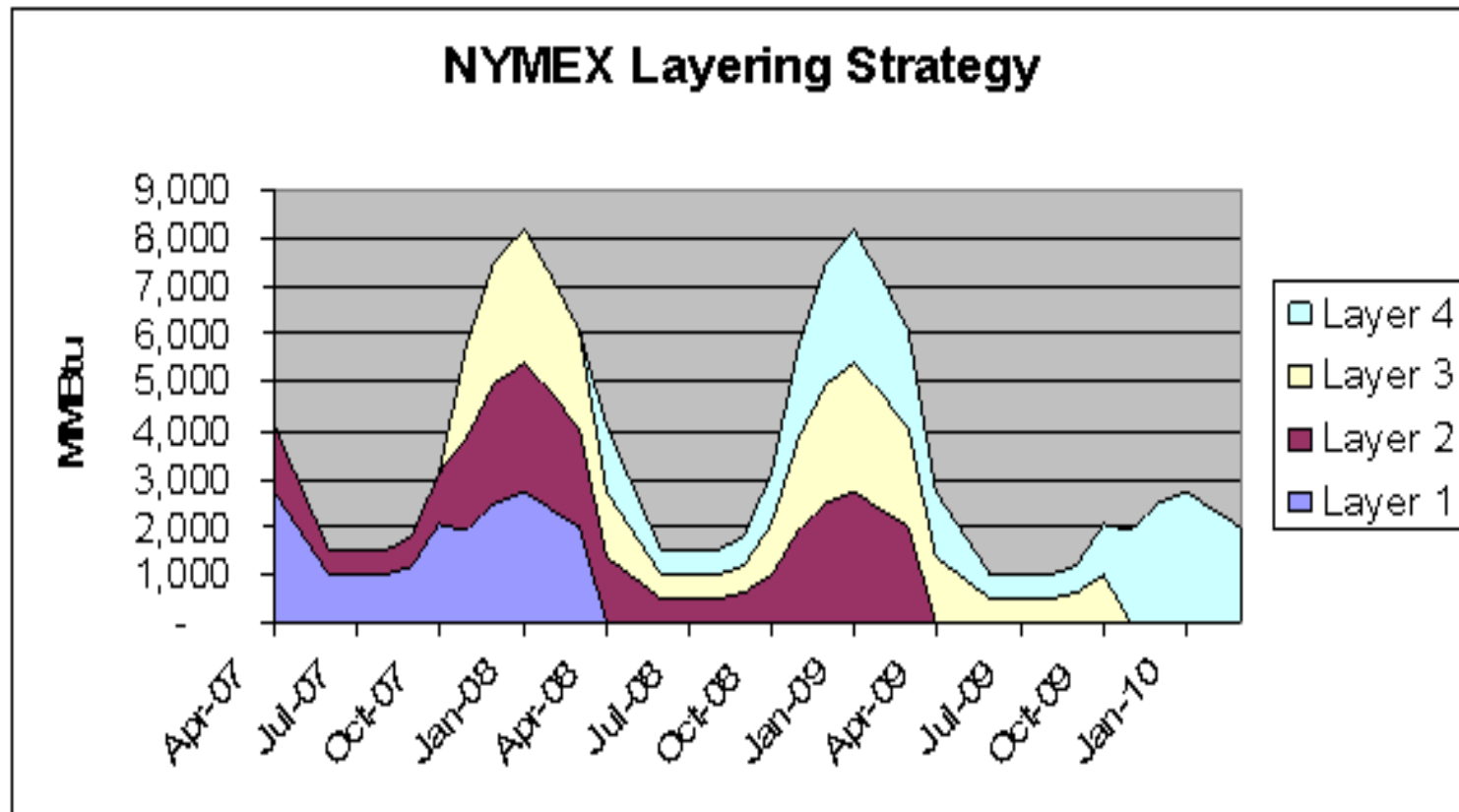
Strategy... This is the Hard Part

- First of all, hope is not a strategy... *seriously*.
- Secondly, *conscious decisions* to do nothing are OK, but realize... End-users ultimately need physical supply. As such, your natural position in the market is “short”. *By doing nothing, you are expressing confidence that prices will fall.* We don’t know anyone that can routinely, accurately forecast the price movement of this volatile commodity. That is why we advocate layering/diversifying... *of blending risk management with speculation.*
- Below are some summary/general strategic thoughts for most risk managers:
 - More conservative risk managers may want to consider hedging prior to Apr 1st.
 - Moderate risk managers may want to wait/hope for an Apr/May dip before hedging.
 - Sum 07 prices *should* grind lower, but a significant fall/collapse is not expected.
 - Win 07/08 prices *feel* too high (lots of “fear premium”) but don’t get too greedy.

Strategy... This is the Hard Part... continued

- o Sum 07 prices *should* grind lower, but a significant fall/collapse is not expected.
- o Win 07/08 prices *feel* too high (lots of “fear premium”) but don’t get too greedy.
- o Most risk managers should not bet 100% of their Win 07/08 needs on a fall dip.
- o Prices are *very* susceptible to summer heat. Electric gens are huge *and* price inelastic!
- o Prices are likely much closer to the bottom of the trading range than the top.
- o *Most risk managers should strive to build a 2 – 3 year supply portfolio. It would:*
 - Allow setting/protecting budgets
 - Prevent price super spike exposure
 - Help eliminate (historical) ~10% price inflation
 - (Historically) outlast the next bull run
- o *Most risk managers should build their 2 -3 year supply portfolio in layers. This would:*
 - Blend risk management with speculation
 - Make hedging decisions easier (than “all or nothing” decisions)
 - Be the same concept as diversifying a 401K

- Strategies are certainly end-user specific. We would be happy to work with you to develop your own goals/strategy. Below is a simple/sample strategy for an average end-user (conservative to moderate risk level... 50,000 MMBtu annually... winter-weighted).



Layer #- Risk Level	Timing Objective	Sum 07	Win 07/08	Sum 08	Win 08/09	Sum 09	Win 09/10	Cum Year 1	Cum Year 2	Cum Year 3
1- C	Prior to Apr 07	66%	33%					43%		
2- C/M	Apr or May 07	33%	33%	33%	33%			76%	33%	
3- M/A	Sum or Fall 07		34%	33%	33%	33%		100%	66%	10%
4- A	Spr or Sum 08			34%	34%	33%	33%	100%	100%	43%

- *The first layers are more conservative, the middle are moderate, and the last are more aggressive.*
- *The layers in this sample are based upon timing, but can be based upon market trends/prices.*
- *This strategy allows flexibility/opportunity to “play the market”, but without so darn much risk.*
- *The “Cum(ulative) Year” percentage indicates the year’s total protection level after a given layer (i.e. Layer 2 results bring the total protection level of Year 1 to 76%... Year 2 to 33%).*
- *This sample used EnergyUSA’s Friday Daily Market Update Target Pricing. Assuming the targets were all ultimately hit, the 2-year weighted average cost would be \$7.40.*

Note: C denotes Conservative; M Moderate; A Aggressive. Cum denotes Cumulative.

Summary

- Risk is Unavoidable
- Risk 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
 - Change Plan or Hedge !
 - Once you act, Don't Look Back!