

Natural Gas... The ‘demand’ side of equation

July 2011
Alan Lamme

Energy Markets Analyst
WeatherBell Analytics, LLC

Some factors influencing natgas prices

Energy Headlines

Futures Market Speculators – new futures trading
rules (Dodd-Frank/CFTC Rules)

Shale Production – triggered 3 yr bear market in gas

The Economy

Weather

Politics/Geopolitics

Gas Relationship to Oil

Climate Change

Pipeline Issues

Production Issues

Capacity Issues

Outages: Gas, Coal, Nukes, Renewables

Storage Inventories

Gas Demand: Getting More Bullish Everyday



THE BULLISH SIDE

Big Demand for Natural Gas... Getting Bigger!

- Thousands of uses! Natural gas is used to produce steel, glass, paper, clothing, brick, electricity and as an essential raw material for many common products.
- Some products that use natural gas as a raw material are: chemicals, paints, fertilizer, plastics, antifreeze, dyes, photographic film, medicines, and explosives.
- Slightly more than half of the homes in the United States use natural gas as their main heating fuel.
- Natural gas is also used in homes to fuel stoves, water heaters, clothes dryers, and other household appliances.
- Oil and Gas Museum In West Texas! One of a kind place!

The major consumers of natural gas in the United States in 2010 included:

- Electric power sector — 6.9 Trillion Cubic Feet (Tcf)
- Industrial sector — 6.1 Tcf
- Residential sector — 4.8 Tcf
- Commercial sector — 3.1 Tcf

United States annual growth is 1.25%

330,000,000 people = roughly 4.1 million new people every year!

That's a lot of gas demand!

Outlook On Gas Demand

Of all ‘preferred fuel’ choices,
natural gas is in the ‘catbird seat’!

- Natural gas wins over coal - (Unknown Carbon Policy)
- Natural gas wins over nuclear - (environmentalists oppose).
Japanese nuclear disaster heightened scrutiny of nuke power plants
globally. Put brakes on expansion! – Plus another MAJOR issue
emerging with US Nuclear Power Plants!
- Natural gas wins over solar - (too expensive, lagging technology)
- Natural gas wins over Wind-turbines - (too intermittent, topography
specific, can’t locate close enough to metro-areas.)

Radioactive Tritium Has Leaked From Three-Quarters Of U.S. Nuclear Plants

June 2011 - According to an investigation by the Associated Press, radioactive tritium has leaked from three-quarters of US commercial nuclear power sites. The radiation is finding its way into groundwater from rusted and corroded piping buried in the ground.

The report noted that the number and severity of the leaks has been steadily on the rise, even as federal regulators have recently extended the licenses of more and more reactors across the nation. Tritium, which is a radioactive form of hydrogen, has leaked from at least 48 of 65 sites, according to US Nuclear Regulatory Commission records reviewed as part of the AP's yearlong examination of safety issues at aging nuclear power plants.

According to the report, leaks from at least 37 of those facilities contained concentrations exceeding the federal drinking water standard – sometimes at hundreds of times the limit.

BULLISH FOR NATURAL GAS???

Growing Markets for Gas

- Low-price outlook assumes a somewhat static market for North American production, which is up 16% in two years to just over 64 Bcf/d.
- Depending on curve balls thrown from Mother Nature - Truth is markets could grow rapidly in a \$5-\$6.50 range on a medium to longer-term scope.
- Carbon constraints will make coal increasingly expensive and gas generation is particularly opportunistic.
- Coal-to-gas power switching seen last summer and on same track in 2011.
- Coal prices are rising globally, so utilities are more frequently turning to lower priced natural gas.
- In 2011 – Obama's 'already approved', new "Clean Air Mercury Rule" will shut down older coal electricity plants. New rule has quietly slipped in 'cap and trade' measures.

Growing Markets, Part 2

- Carbon sequestration may not be feasible and hourly monitoring will force existing coal plants to retrofit expensing scrubbers.
- Gas still bests clean-coal in emissions and convenience.
- Gas can be sited in and near urban areas where demand is.
- Renewables often sited in remote areas engendering huge transmission costs.
- Signs are growing that Obama is warming to natural gas as a “bridge” fuel.
- Pickens’ Plan being embraced by influential Center for American Progress (CAP).
- CAP is considered incubator for Obama policies.
- Nat Gas Act, bipartisan legislation that promotes natural gas as transportation fuel.

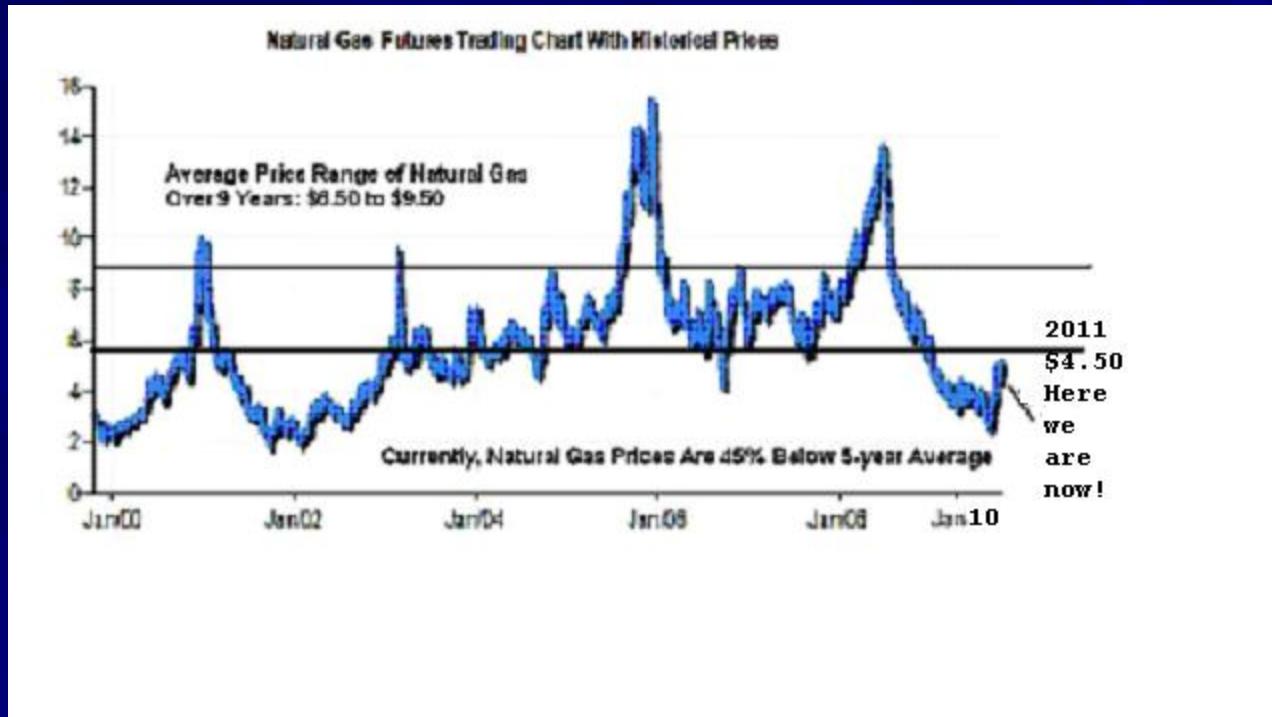
End of 3-year Bear Market in Natural Gas? Subtle Migration Away From Shale Gas

Production?

- 3 years ago – major ‘gold rush/land grab’ in Haynesville, Louisiana!
- Natural gas prices collapsed – have remained down for 3 years.
- Pugh Clause (named after lawyer, Alexander Pugh) – producers must drill within 3 years - otherwise known as Hold By Production.
 - In other words... Drill it or lose it...
- Haynesville most prolific shale gas production area in the US! Other areas typically ‘4 wells’ to ‘1 Haynesville well’ in terms of production.
- In order to keep the same amount of supply we’ve seen over the last 3 years, producers would have to continue to drill at the same rate! And that’s just not happening!
- Migrating from lower price natgas to high flying ‘oil shale’ plays.
- As Hurricanes Gustav and Ike bowled through the offshore production areas of the Gulf of Mexico – natgas prices went down because of enormous shale supply.

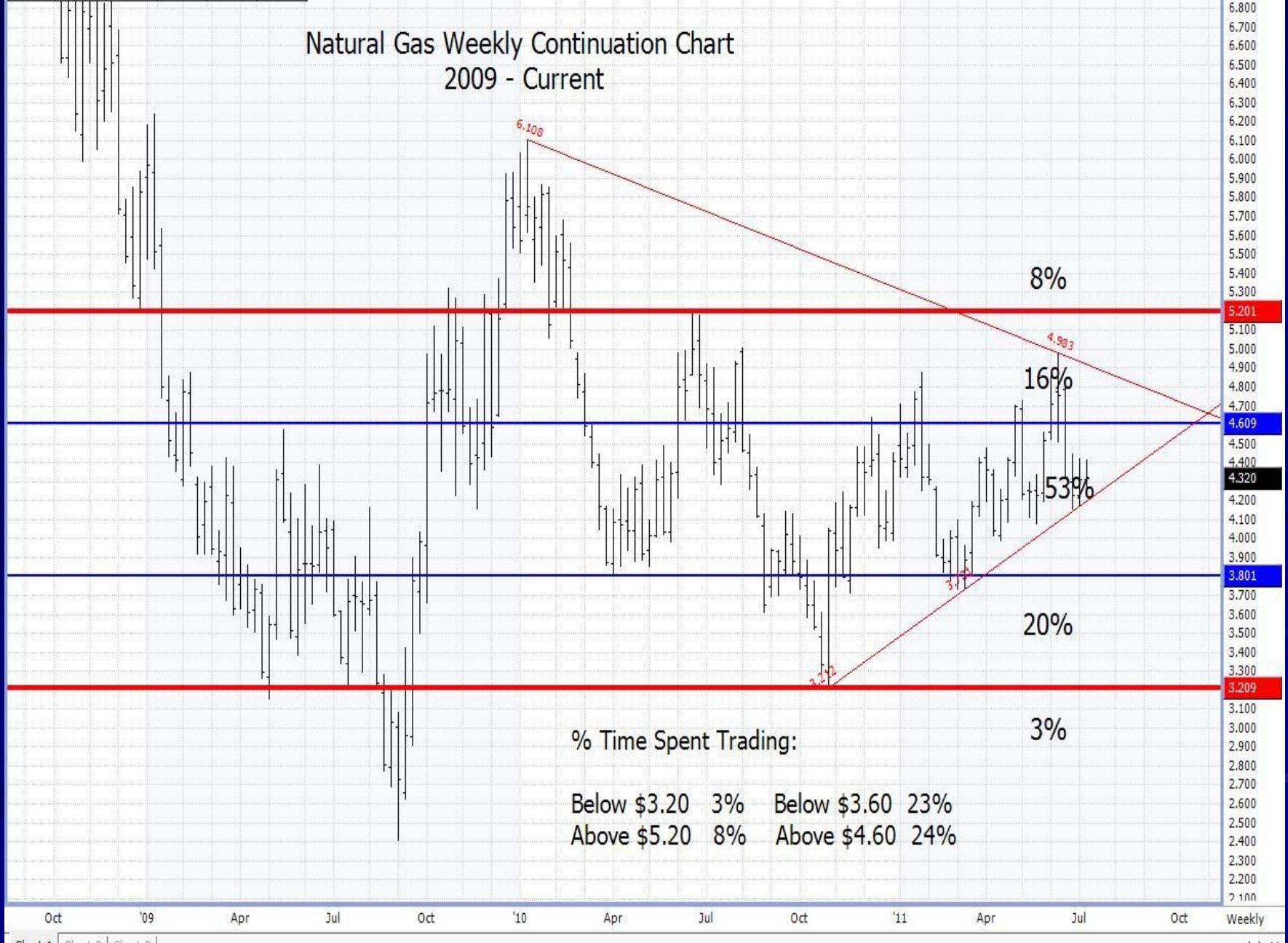
- However – once production losses from shale plays becomes obvious to the market – GULF OF MEXICO production data becomes very important again! And natgas prices likely to become much more sensitive to Hurricane threats!

What about the price of natural gas? Where's it headed???



Let's Talk About It...
Most likely... lower near term..
Mostly higher... longer term...

%NG 1! O: 4.313 H: 4.411 L: 4.251 C: 4.320 Δ: 0.009



Outlook for US Gas Market

- Short-term bearish/range bound – Summer 2011- \$3.90 to \$5 market.
- Exxon Mobil sees “sloppy market” for next several years because of healthy supply.
- Latest *NGW Scoreboard* around \$4.60, with a \$3.75-\$5.25 range.
- Longer term – early 2012 and beyond – back to \$4.50 to \$7 range.
- Trend with shale gas supply remains to be seen.
- Storage is the true indicator of supply demand balance.

Outlook for US Gas Market – Part 2 – The Variables

- Too much gas in storage.
- Uncertain industrial demand.
- Potential climate change legislation.
- Aggressive LNG marketers.
- Methane hydrate production in 2015?
- Bottom line: The US will be self-sufficient in natural gas as long as we want to pay price.
- In spite of Dodd-Frank and new CFTC rules... ‘big speculation’ in natural gas has just been in hibernation!

-The Weather- Mother Nature Likes To Throw Curve Balls!

- Could the US be in for another chain of brutal winters?
- WeatherBell Analytics Meteorologist Joe Bastardi says there's compelling evidence that suggests North America could be headed for a 'mini' ice-age of sorts for several consecutive winters!
- If correct, we may need every molecule we can get!

Alan Lammey
Energy Markets Analyst
and Account Executive for
WeatherBell Analytics, LLC
Office Phone 281-658-0395
alan.lammey@weatherbell.com

Host of “Energy Week’ Radio Show in
Houston, Sunday’s at noon on NewsTalk
1070 AM