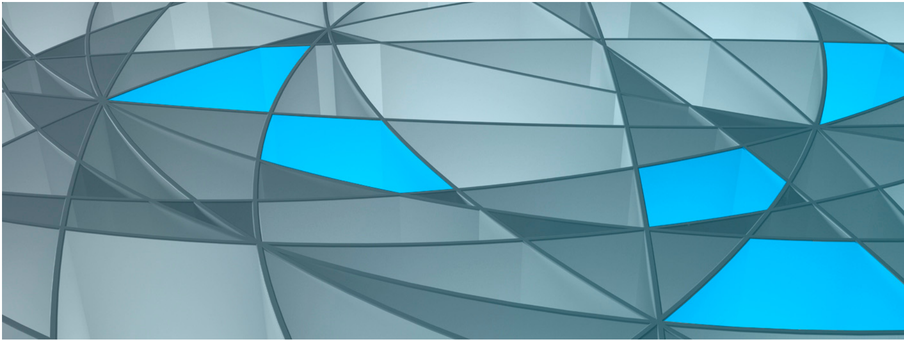
NATURAL GAS WEEKLY KALEIDOSCOPE

Back to School Sale



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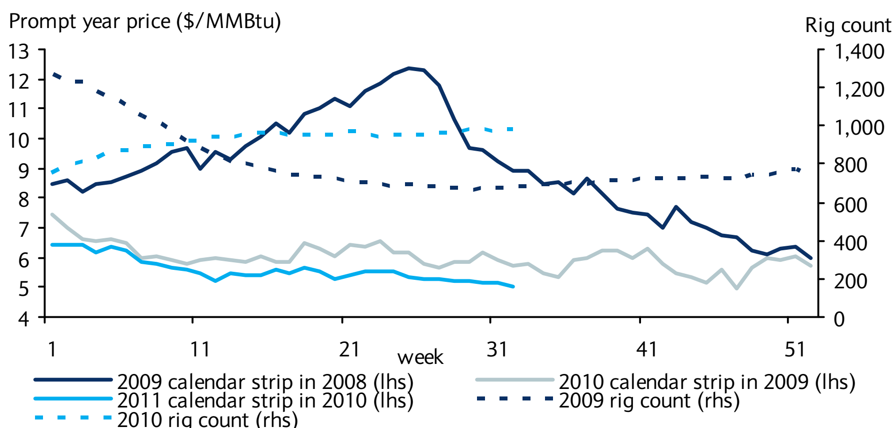
- Hedge levels for the prompt year are a good indicator of drilling levels in 2011. Producers are generally reluctant to commit to large capital drilling budgets without a significant portion of their production hedged.
- After a multi-year run of forward prices offering good margins for producers, prices for 2011 have slumped in the past month. Following a cold weather-inspired move higher at the start of the year, 2011 gas prices have sagged through spring and summer, despite hot weather, testing the patience of companies with unfilled hedge programs.
- We believe producers, on average, have about a third of their 2011 hedging to fill. The $5.50 per MMBtu level appears to be the threshold that would trigger producers to top off their programs. But time is running short. Producers prefer to have their hedges in place right about the same time that students return to school. This fall will thus feature a “back to school sale” if 2011 prices rise sufficiently. However, if prompt year prices do not rally, we expect producers to likely enter 2011 with less production hedged, prompting a cut in 2011 drilling.

Chart of the week: Prompt year prices versus rig trajectory



Source: Baker Hughes, NYMEX, Barclays Capital

PLEASE SEE ANALYST CERTIFICATIONS AND IMPORTANT DISCLOSURES STARTING AFTER PAGE 11

2011forward prices provide a clue for the direction of drilling in that year

For those looking for a tool to predict drilling and therefore supply next year, watch 2011 forward prices. We have previously described how a typical independent producer uses hedges to protect capital spending programs from a plunge in spot prices (see *Natural Gas Weekly Kaleidoscope: Rational exuberance, April 20, 2010)*. Hedges have been a key factor in the rising rig count this year, despite cash and prompt month prices that have stayed muted, even with a cold winter followed by a hot summer. Without hedges, we expect the rig count to be much lower. Held-by-production leases, joint ventures where partners pay for most drilling costs in exchange for a cut in production, and liquids-targeted but still gas-rich drilling, are additional non-spot price factors that drive the rig count. Simply put, while prompt month prices may not support some of today's drilling, other factors do. These are some of the same factors that revived drilling in 2009 despite falling prices. Drilling in 2009 revived when forward prices began recovering (Chart of the week). The rig count this year roughly tracked our forecast (Figure 1).

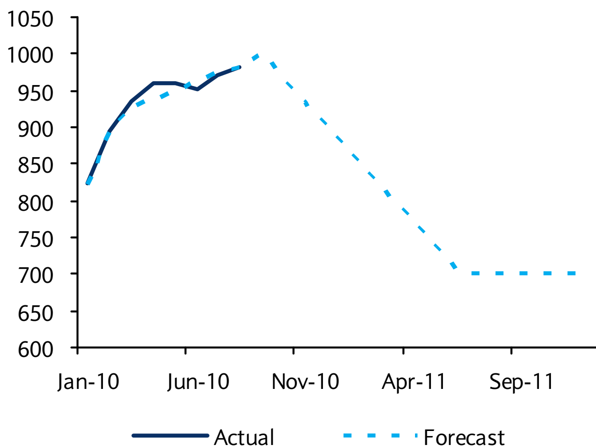
Producers are actively planning for, and hedging, 2011 production. It is important to note that hedging by producers is quite varied. Some producers hedge very little, while others cover virtually their entire production with price protection. Several producers are well hedged for 2011, while others appear to be waiting for a move higher in prices. This is not unusual, as producers follow their own disparate strategies. Our credit research colleagues track hedging activity by the main high yield producers, and here we lean on their work (see *Oil & Gas Update: High Yield E&P: 2Q-4Q10 and 2011 Hedging Overview, June 29, 2010*).

Producers have roughly one-third of hedging still to complete

As of the end of Q2 10, while producers remain well hedged for 2010, they are less hedged for the coming year than at the same point for the prompt year in 2009 and 2008 (Figure 2). With just 36% of forward year production (oil and gas) hedged, producers have a little more than one-third of their hedge programs to fill. This comparison is similar for gas-only hedges, with 36% of 2011 production hedged at the end of June, versus 47% of forward year gas production covered last year at the same time.

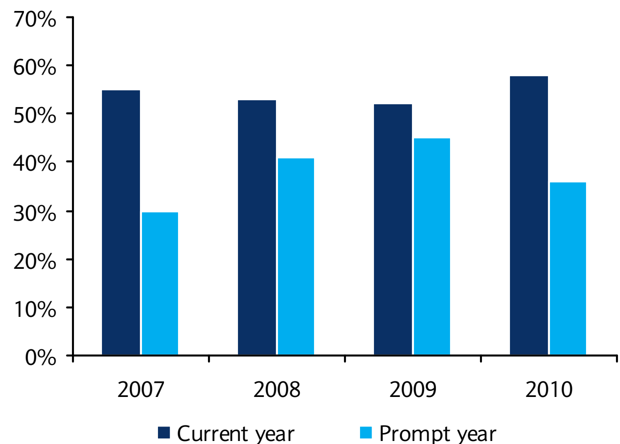
Prices for 2011 have undoubtedly left producers underwhelmed. Whereas calendar 2011 prices now sit at $5.02, prompt year prices at this time last year were $5.96, and $9.18 at this point in 2008 (Figure 3). This is reflective of not only the general drop in prices, but in the fading of the steep contango that not long ago typified the gas market. The premium of forward prices compared with prompt was a resource for producers to lock in margin

Figure 1: Gas-directed, on-shore rig count, forecast and actual



Source: Baker Hughes, Barclays Capital

Figure 2: Producer hedge levels (oil and gas) as of end-June in each year, peer company group



Source: Company reports, Barclays Capital credit research

(Figure 4). In other words, the bearishness that has persistently kept prompt month prices in check has now infected the rest of the curve (Figure 5). The flattening of the term structure in the market has been quite pronounced in the past month.

While prices have been sinking, producers have been lowering costs in some plays by improving drilling and completion technology and registering efficiency gains. For some producers, this has helped preserve margins. But pressing the other way has been rising service industry costs. Producers have noted especially the increase in well stimulation and completion costs. Thus, in a broad sense, technology is in race against higher service industry costs and falling gas prices.

We believe 2011 prices above $5.50 would push hedging percentages to year ago levels

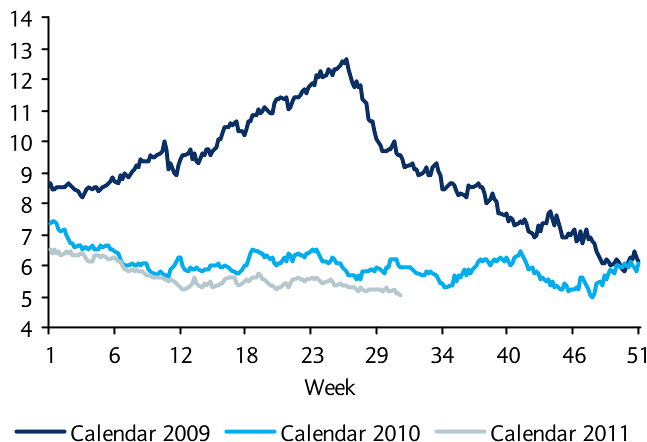
While five weeks have transpired since our credit research colleagues compiled producer hedge levels, the market has not been in favorable price territory since their report was released. Our sense is that producers have slowed their hedging over the intervening period, and are waiting for a spurt of higher prices to finish their programs. The $5.50 per MMBtu level appears to be the threshold that would trigger producers to fill their hedges. In other words, should 2011 rally back above $5.50, we expect hedge levels for the average producer to reach last year's hedge percentages for 2010. This price level appears to offer enough margin for producers to keep rig rates roughly at current levels. Our base outlook suggests that a move to $5.50 is unlikely – we expect prompt month prices to sag through the injection season, which should contain any advance in the forward curve. However, prompt year prices can de-link from short-term fundamental drivers. In particular, a stout hurricane could boost 2011 prices temporarily above the $5.50 threshold.

Companies will hedge 2011 production through 2010 and into 2011. But most producers like to wrap up the bulk of their hedging before the coming year, with most hedges arranged before or during fall. After all, service industry contracts have to be negotiated and signed, permits obtained, and other operational factors considered. Drilling cannot be stopped or started on a dime.

Only a few months remain to finish 2011 hedge programs

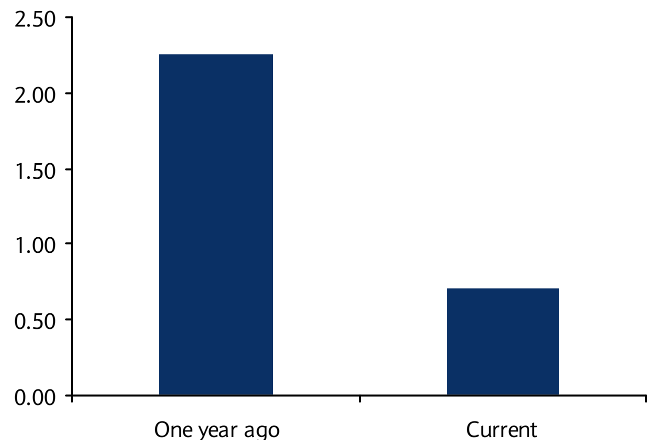
In this regard, the clock is ticking. Those with unfilled hedge programs will be eyeing forward price levels closely. Just as fall marks the return of students to class, the season also marks the topping-off period for many hedge programs. Any good forward price opportunity should trigger a hearty "back to school sale."

Figure 3: Prompt year prices, $/MMBtu



Source: NYMEX, Barclays Capital

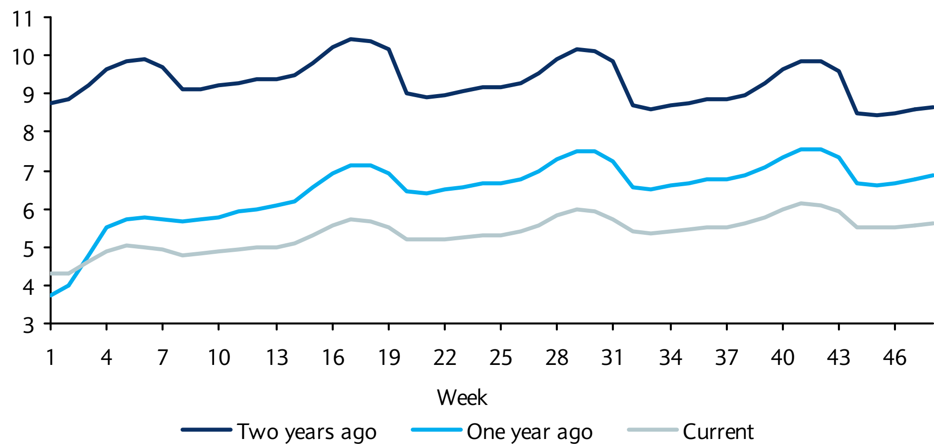
Figure 4: Premium of prompt year to prompt month, $/MMBtu



Source: NYMEX, Barclays Capital

Do not view $5.50 as the "go/no-go" level for hedging. Instead, $5.50 to us is roughly the balance point between producers entering 2011 under-hedged compared with year-ago levels. Thus, a continuation of calendar 2011 prices near current levels would imply a cut in the rig count in 2011. We have modelled a stark drop in the rig count, starting in Q4 10 (Figure 1). Such a cut could be motivated by under-hedged production. Conversely, a rally of 2011 prices would help support hedging and therefore drilling levels. If producers top up their hedges, we would expect little culling of the rig count. In a very real sense, bullish prompt year prices today are bearish for prompt month price levels during 2011.

Figure 5: Henry Hub forward curve, $/MMBtu



Source: NYMEX, Barclays Capital

COMMENTARY ON WEEKLY DATA

Price trends

Prices have slumped considerably despite continued hot weather

In a market trend that is reminiscent of the price slump this past winter despite continued cold weather, natural gas prices have sagged, even as the run of hot weather persists. While strong air conditioning demand has soaked up a considerable amount of gas, the market appears to be concluding that the demand bounce is still not enough. For the week, the prompt contract shed 39 cents, to $4.31 per MMBtu. The forward curve continues to flatten, as rest-of-year prices slid 34 cents, to $4.53, and calendar 2011 slumped 17 cents, to $5.02. We suspect that $5.02 is well below the hedge targets sought by producers.

Our balances continue to show storage heading for another record fill this year. While hot weather could continue to absorb up to half of the gas that we had expected would displace coal, the bounce in power loads is not high enough to avoid a high storage inventory finish. To us, this means that gas must price at coal equivalents through the remainder of the injection season to balance the market. In other words, high prices would quickly shut off coal displacement, causing the subsequent weekly storage injection to surge, pushing prices back to coal-competitive levels. Conversely, a further drop in prices should price another wedge of coal out of the market, boosting demand. The market thus has a self-correcting feature that should keep near-term prices rangebound. Importantly, end-of-injection season storage levels will be dictated, in part, by the level of coal displacement.

Storage levels

Weekly storage estimates: net injection ranging from +15 to +47 Bcf

Inventories grew by 29 Bcf last week, as hot weather continued to boost air conditioning demand. The injection left inventories 132 below year-ago levels. Another hot week is in the forecast, suggesting a further widening in the y/y gap. Yet, we estimate that inventory levels will still catch up with 2009 levels if weather returns to normal later in the season.

Supply and demand trends

Producers report growing supply, while the market worries about H2 10 demand

Weather has been single-handedly preventing prices from dropping further. A run of hot weather concentrated in the Southeast and Gulf region provides a demand boost that is larger than hot weather affecting other market regions. But even with a long streak of hot weather, market watchers (besides us) are still forecasting relatively full storage figures. Despite recent EIA production data that showed no growth in supply from April to May, the elevated and still-growing rig count suggests to the market that supply is overwhelming even the effects of weather.

Baker Hughes reports that the on-shore, gas-directed rig count grew by 11 last week, more than reversing the previous week’s decline. The still-climbing rig count is weighing on the market’s view for winter risk and spreads, even as summer is still in full force. Adding to concerns over supply has been a series of oil and gas companies reporting production that not only grew, but beat forecast growth. Finally, a string of economic data points hint at a slowing in the economy in the second half of the year, adding to the bearish sentiment. The gas market needs an external event to kick it into a different trajectory.

NATURAL GAS MARKET REFLECTIONS: PRICES

Figure 6: Henry Hub NYMEX prompt and cash prices

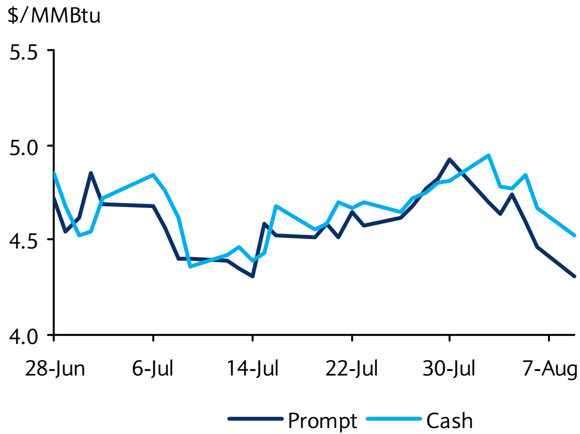


Figure 7: NYMEX natural gas forward price curve

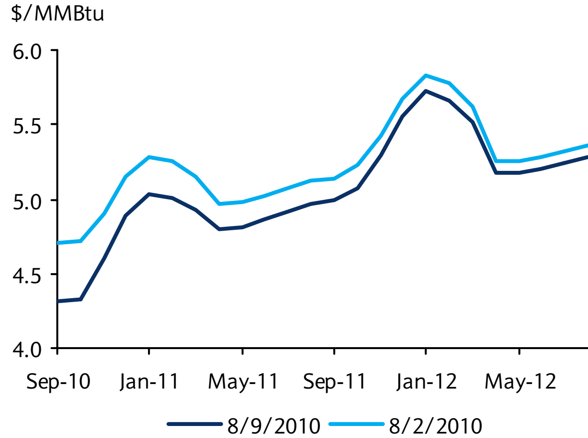


Figure 8: Henry Hub – UK NBP prompt differential

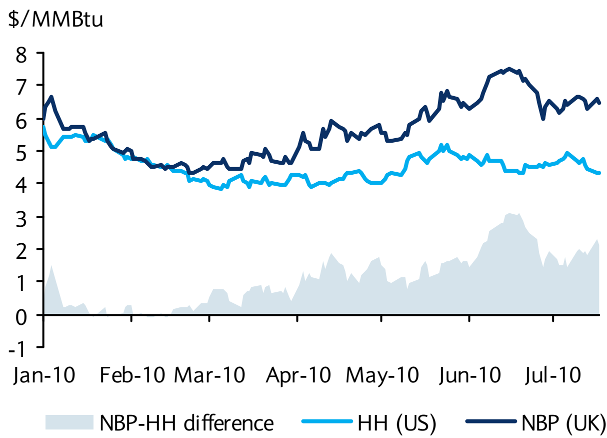


Figure 9: Transco Zone-6 New York basis, $/MMBtu

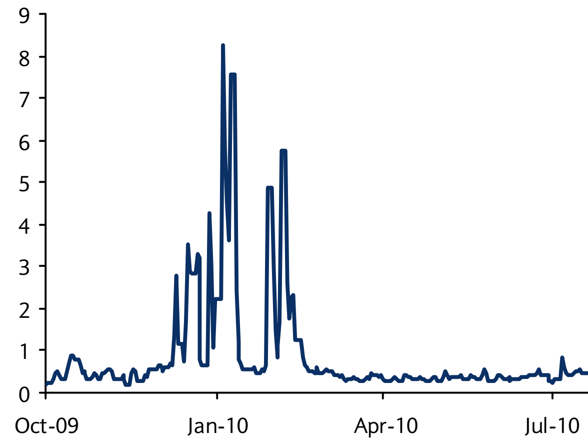


Figure 10: CIG Rocky Mountains basis, $/MMBtu

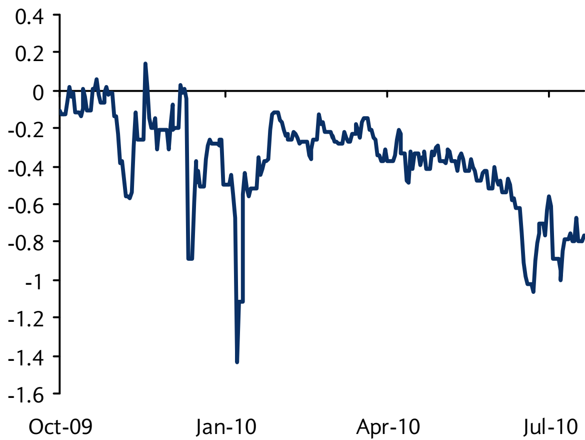
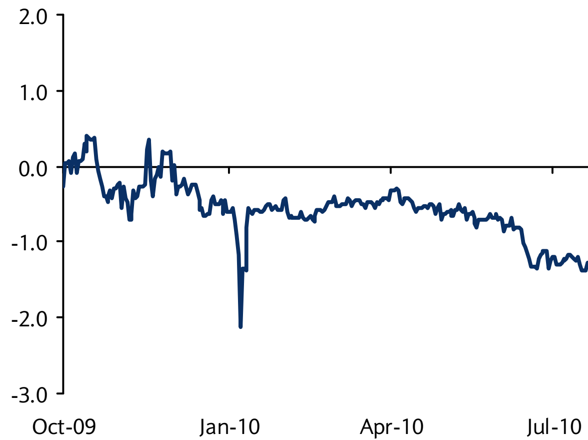


Figure 11: AECO basis, $/MMBtu



NATURAL GAS MARKET REFLECTIONS: STORAGE

Figure 12: Working gas in storage, total US, Bcf

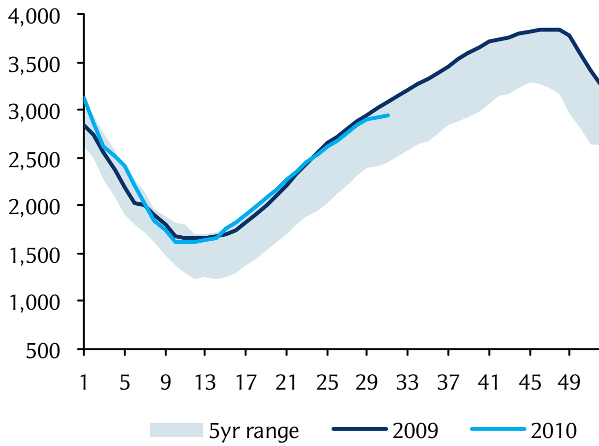


Figure 13: Working gas in storage, east region, Bcf

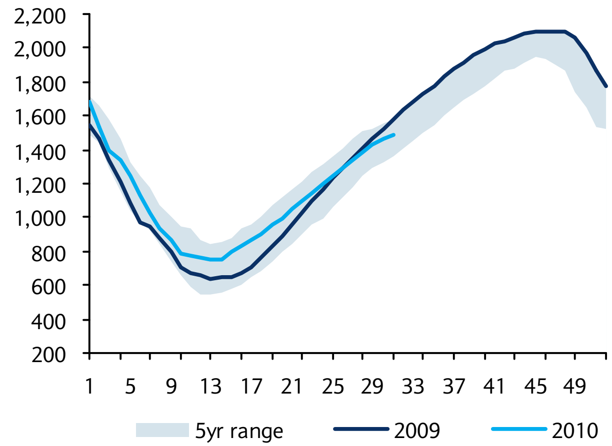


Figure 14: Working gas in storage, producing region, Bcf

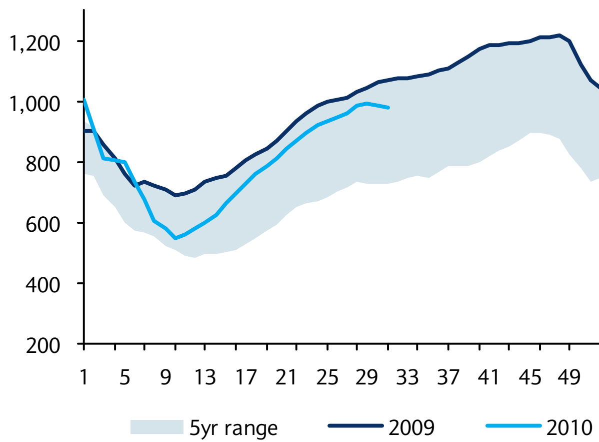


Figure 15: Working gas in storage, west region, Bcf

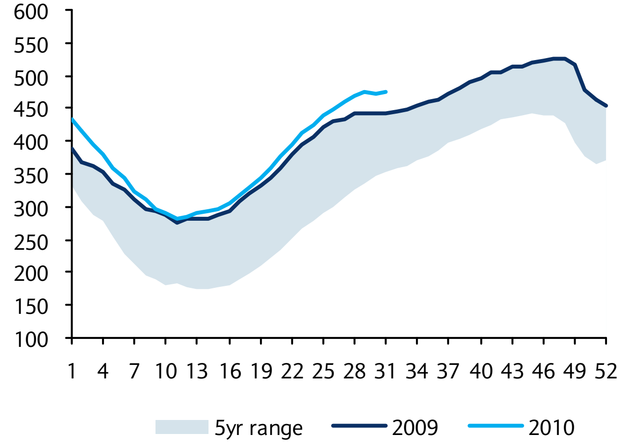


Figure 16: Working gas in storage, Canada, Bcf

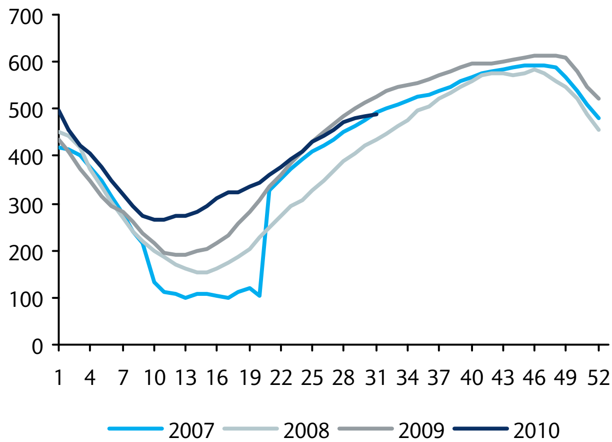
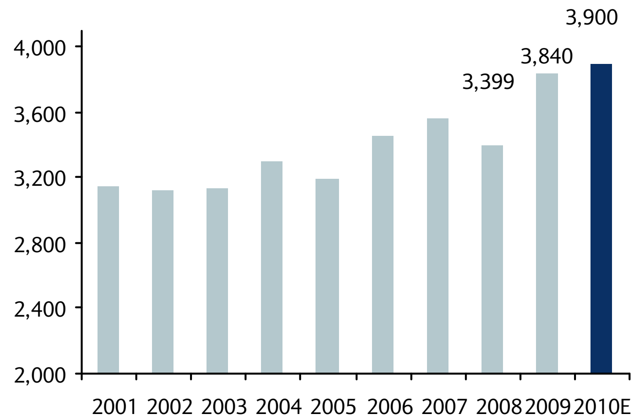


Figure 17: US end of injection season storage levels, Bcf



NATURAL GAS MARKET REFLECTIONS: SUPPLY

Figure 18: Daily US LNG imports, MMcf/d

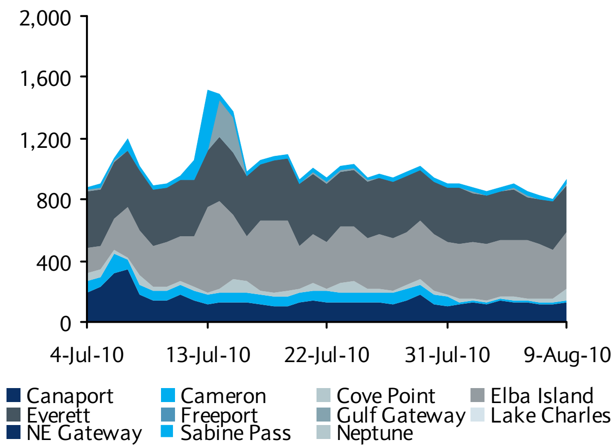


Figure 19: Monthly US LNG imports, MMcf/d

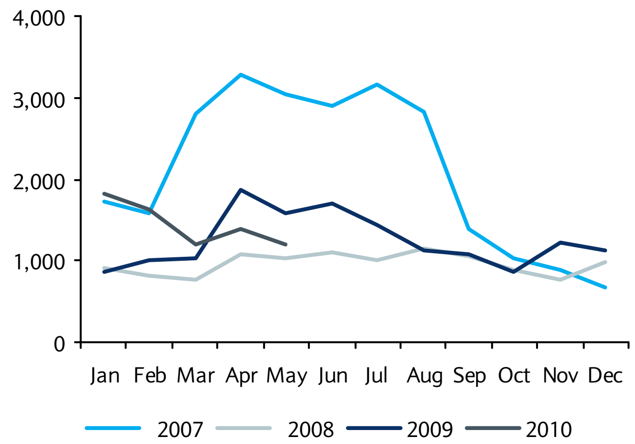


Figure 20: Net daily Canadian imports to the US, MMcf/d

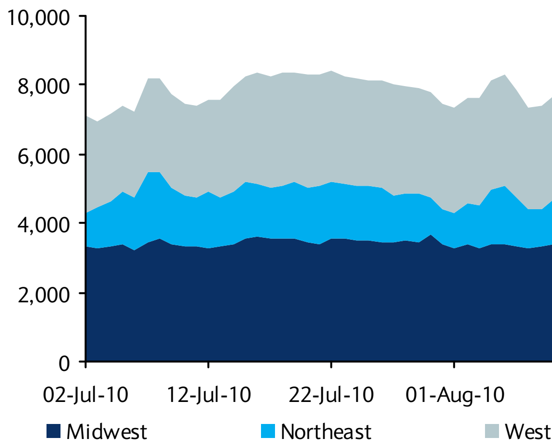


Figure 21: Net monthly Canadian imports to the US, MMcf/d

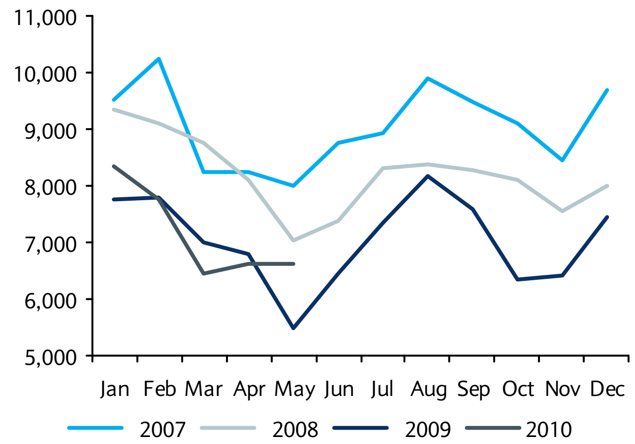


Figure 22: US natural gas rig count

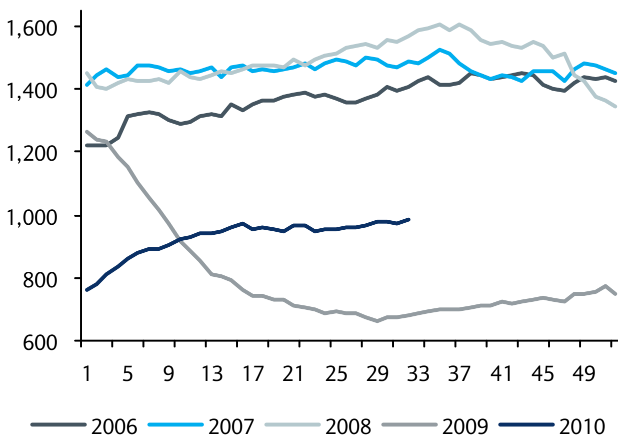
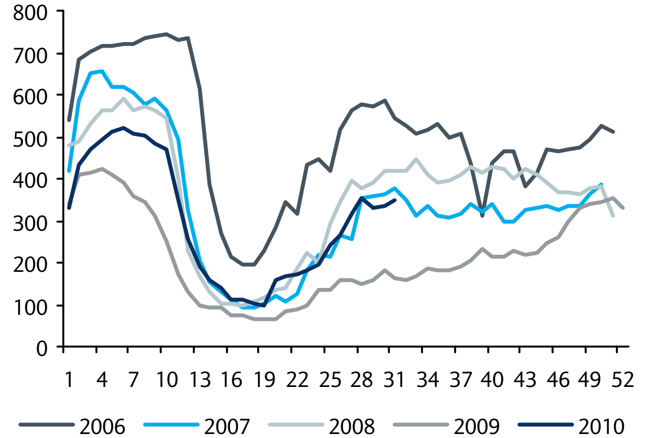


Figure 23: Canadian rig count



NATURAL GAS MARKET REFLECTIONS: DEMAND

Figure 24: Weekly US electric output, GWh

Figure 25: US nuclear power output, weekly Avg GW

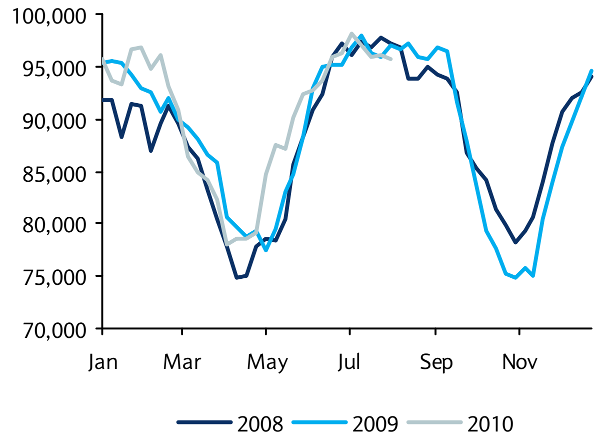


Figure 26: Fuel switching economics, New York City

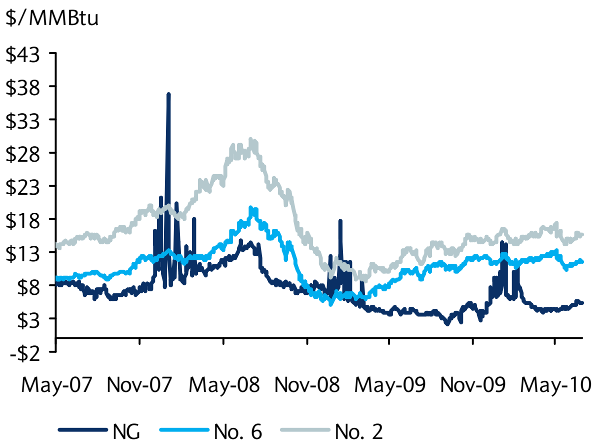


Figure 27: Fuel switching economics, Gulf Coast

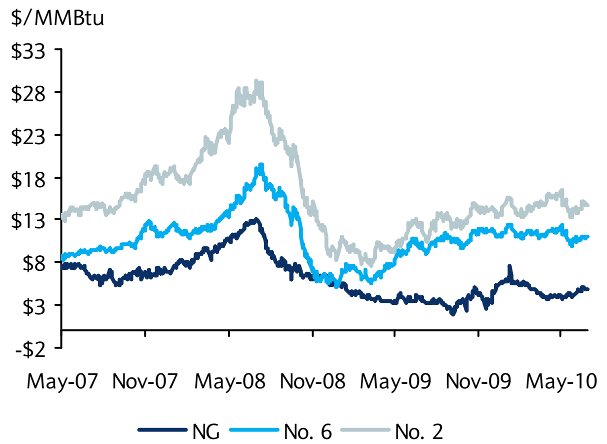


Figure 28: US weekly pop-weighted cooling degree days

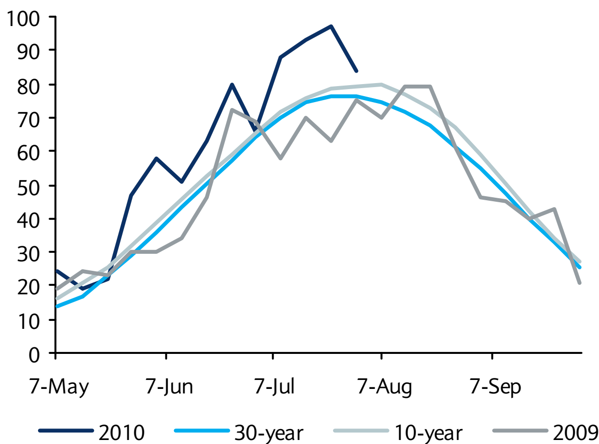
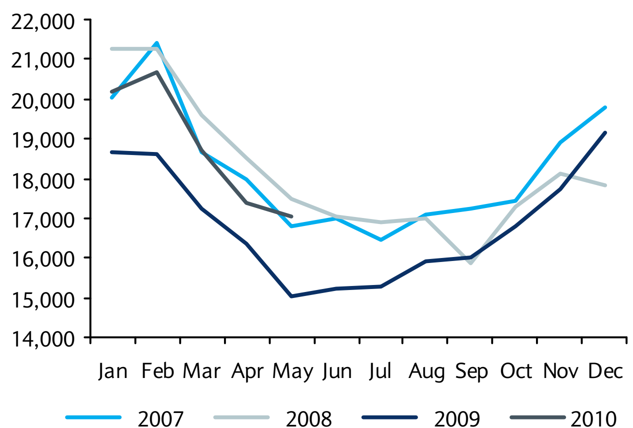


Figure 29: Monthly US industrial demand, MMcf/d



NATURAL GAS MARKET REFLECTIONS: BALANCES

Figure 30: US lower-48 natural gas supply/demand balances and price

	Annual average					y/y change			
	2007	2008	2009	2010E	2011E	2008	2009	2010E	2011E
Supply –total (Bcf/d)	**62.10**	**62.60**	**63.76**	**65.87**	**65.89**	**0.50**	**1.16**	**2.10**	**0.03**
US L-48 Supply	51.59	54.33	56.33	58.50	58.78	2.74	2.00	2.18	0.28
Canadian Exports to US, net	9.05	8.19	7.05	6.66	6.36	-0.85	-1.15	-0.38	-0.30
US Imports of LNG	2.11	0.96	1.24	1.43	1.43	-1.15	0.28	0.19	0.00
Exports to Mexico	0.65	0.88	0.85	0.73	0.68	0.23	-0.03	-0.12	-0.05
Demand – total (Bcf/d)	**63.44**	**63.50**	**62.58**	**64.29**	**65.11**	**0.07**	**-0.93**	**1.71**	**0.82**
Residential & Commercial	21.36	21.93	21.61	21.93	22.02	0.57	-0.32	0.32	0.09
Industrial	18.23	18.18	16.83	17.93	18.33	-0.06	-1.35	1.10	0.40
Power	18.71	18.20	18.85	18.85	19.25	-0.51	0.64	0.00	0.40
Other	5.13	5.19	5.29	5.58	5.51	0.06	0.10	0.29	-0.07
Storage Inventories (Tcf)									
End of March	1.6	1.3	1.7	1.7		-0.3	0.4	0.0	
End of October	3.6	3.4	3.8	3.9	3.9	-0.2	0.4	0.1	0.0
Economic Indicators									
GDP growth						0.4	-2.4	3.0	2.9
Industrial production growth						-2.2	-9.7	5.7	5.4
Natural gas price ($/MMBtu)	$7.12	$8.90	$4.16	$4.52	$4.10				

Source: Barclays Capital

Data in this report come from the following sources and from Barclays Capital calculations: Reuters, Bloomberg, Intercontinental Exchange, Baker Hughes, US Minerals Management Service, Canadian Association of Oilwell Drilling Contractors, US Energy Information Administration, Waterborne Energy, company websites, quarterly presentations and reports.

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Analyst Certification(s)

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