



# Winter 2008/2009 Energy Market Assessment

Item No. A-3  
October 16, 2008

Mr. Chairman, Commissioners. Today I'm pleased to present the Office of Enforcement's Winter 2008-2009 Energy Market Assessment.

I am here with Chris Ellsworth, a senior member of the Office of Enforcement and Jeff Wright of the Office of Energy Projects.

The Winter Assessment is staff's annual opportunity to share observations about natural gas, electric and other energy markets as we enter the winter heating season.

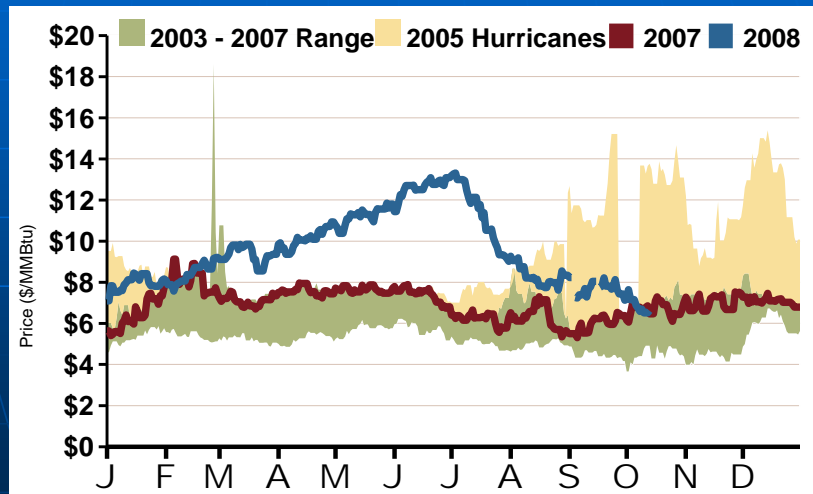
The prospects for natural gas markets this winter are looking better than they were just a few months ago at the beginning of summer. Both gas and oil prices rose to unprecedented levels earlier this year setting the market up for what might have been unprecedented winter prices. However, since the height of the market in early July, prices have receded considerably. As we enter the winter, gas in storage is above the five-year average, the National Weather Service is forecasting relatively mild winter weather, and natural gas production is robust.

## Current Gas Market Conditions

- Large Swings in Gas and Oil Prices
- Above Average Inventories
- Mild Winter Weather Outlook by NOAA
- Robust Growth in Gas Production
- Reduced LNG and Gas Pipeline Imports

After I discuss the large swing in natural gas and oil prices we have experienced this year, I will address each of the key issues driving our winter outlook.

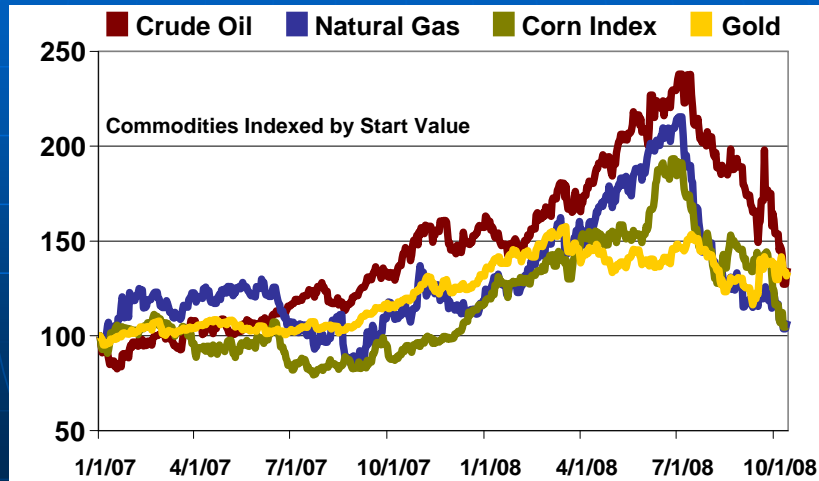
## Spot Gas Prices Peak in 2008



Source:  
Derived from  
Platts Data.

This chart compares next day spot natural gas prices traded at Henry Hub, Louisiana reported by Platts in 2008 and 2007 and also shows the 2003-2007 range of prices, separating out the effects of hurricanes Rita and Katrina. Henry Hub spot prices so far this year have averaged almost \$9.58/MMBtu – up about \$2.62/MMBtu from last year. Natural gas prices at the Henry Hub broke out of the 5-year range during the first half of 2008, peaking at \$13.32/MMBtu on July 3. Since then spot natural gas prices have returned to the 5-year normal range.

## Gas Prices Track Other Commodity Prices

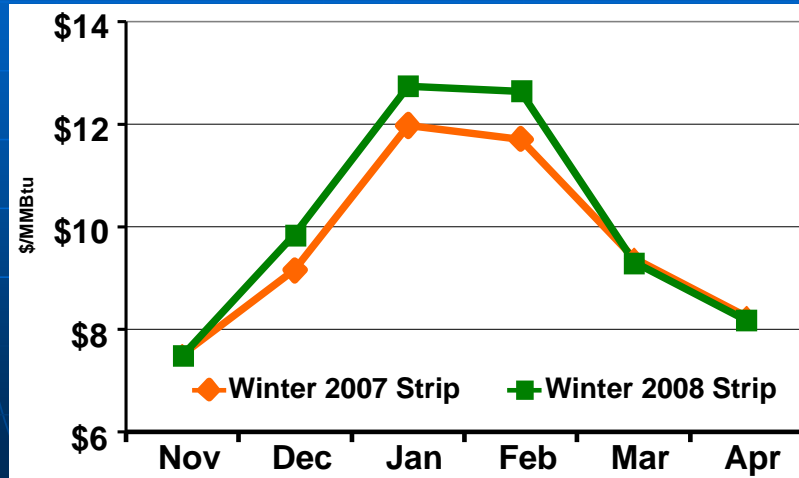


Source:  
Derived from  
Bloomberg.

Domestic natural gas fundamentals contributed to some of the run-up in natural gas prices. US gas storage in April 2008 was considerably lower than 2007 and 2006. In addition, June heat contributed to the peak in gas prices. However, the June heat gave way to a cooler July and August, so that summer power burn was down 6% compared to levels last year.

That said, since at least mid-2007 a range of commodities, including corn and gold, have experienced pronounced price increases. As you can see from this chart, natural gas price have tracked other commodity prices since at least mid-2007. It is likely that the dramatic rise in natural gas prices was related in part to a general rise in commodity prices.

## Forward Northeast Winter Natural Gas Prices Similar to Last Year



Source: Derived from NYMEX Clearport.

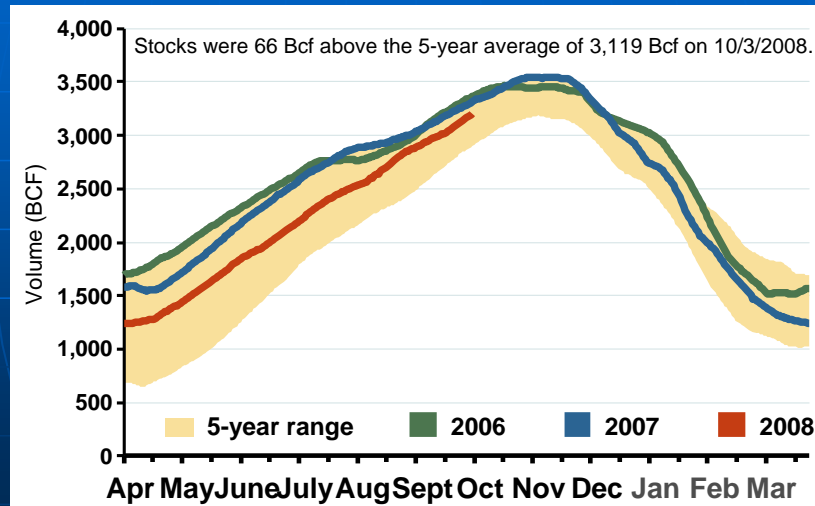
Despite large swings in gas and oil prices, the winter outlook for gas prices at Transco Zone 6 NY based on forwards is strikingly similar to the outlook the market had last year at this time. I'll note that the forward prices for Henry Hub are slightly lower than last year's forward prices. The fact that the Northeast prices are slightly higher can be attributed to a risk premium related to congestion concerns.

Forward prices are similar, inventories are at healthy levels, and the winter weather outlook is similar to last year, with the Climate Prediction Center at NOAA calling for a warmer than normal winter.

A key difference from last year is the higher growth in domestic gas production, which through July had increased almost 9% compared to 2007. This growth is tempered somewhat by a fall in gas imports.

Before I move on, it's important to note that most LDCs likely purchased gas for this winter over the course of the year. Therefore, the recent drop in natural gas prices will not be fully realized by most retail rate payers.

## Storage Levels Recover from Spring Low: 2008-09



The amount of gas in storage in November is a key benchmark of the gas industry's ability to flexibly respond to changes in winter weather.

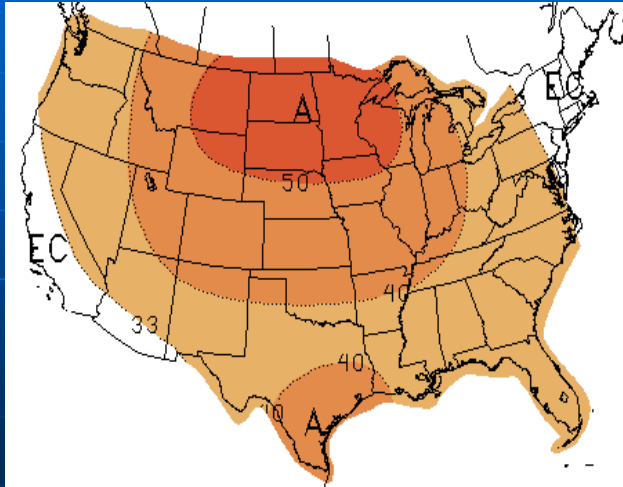
At this point, it appears that the U.S. will have sufficient gas in storage to meet winter demand.

In April – the beginning of the injection season – inventories were below last year's levels, but almost in the middle of the five year range. Moderate gas demand due to moderate heat in July and August, coupled with the general growth in gas supply has allowed storage to recover to 87% full. At current injections rates, storage could almost reach capacity of 3,789 Bcf by November. Substantially full storage will go a long way towards protecting the country from supply disruptions and prolonged high prices, assuming normal to warmer than normal winter weather.

## Current Forecast is Another Mild Winter

### NOAA's December 2008 through February 2009 Outlook

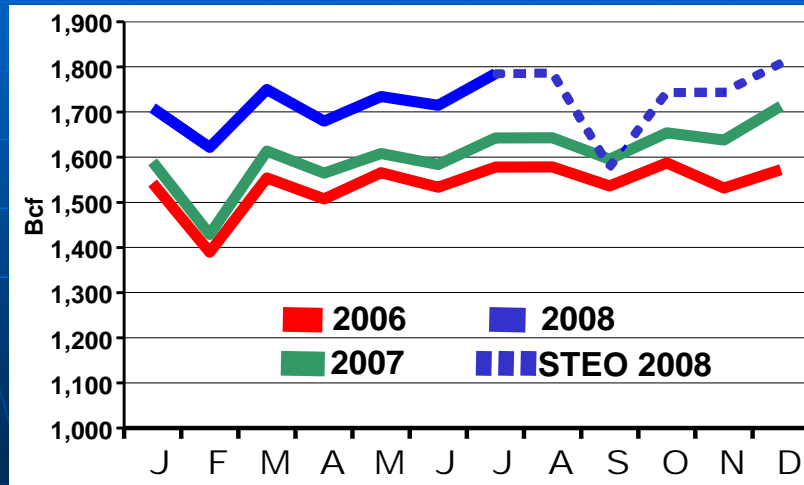
Source: NOAA Three Month Outlook-Official Forecast for Dec-Jan-Feb 2008-09 issued September 18, 2008. EC represents equal chance of above normal and below normal temperatures.



Weather is one of the most important factors that influences winter energy markets. NOAA released its weather outlook for the December through February period on September 18 and it calls for a generally milder than normal winter, yet slightly colder than last year. The map on this slide indicates that much of the country has at least a 40% chance of a warmer than normal winter, though the northeast is projected to experience near normal winter temperatures. This weather outlook is similar to the one NOAA issued last year at this time.

It bears noting that some weather forecasters have alternative views. For example, AccuWeather and WSI have reported a greater likelihood of a colder than normal winter, especially in the Northeast U.S.

## Natural Gas Production Rises Sharply



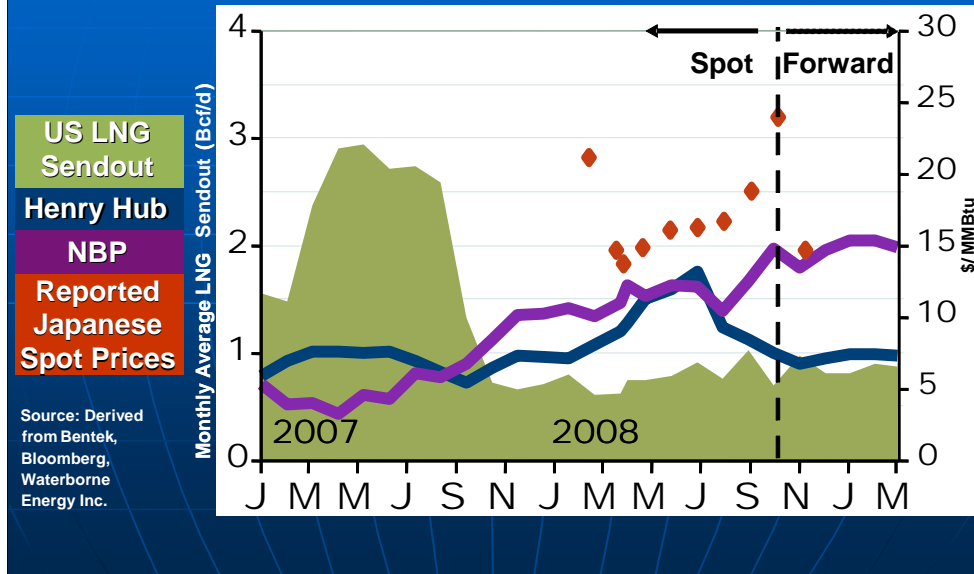
Source: Derived from EIA Short Term Energy Outlook (STEO), October 2008.

Along with storage inventories and weather, we believe the growth in domestic natural gas production this year should have a significant influence on prices this winter. This slide shows that the U.S. is in the midst of its second year of robust production growth. Production grew almost 9% through the first seven months of 2008 and EIA estimates that lower 48 gas production for the entire year will rise by 7% compared to 4% for 2007. A September dip in production due to hurricanes Ike and Gustav removed over 200 Bcf of cumulative gas production. I will discuss where this production increase is coming from shortly. These supply gains have been partially offset by declines in imports of LNG and pipeline supplies from Canada.

Expectations for growth in winter gas demand are not quite as robust as the growth in supply. Several factors have the potential to slow demand. As discussed earlier, NOAA currently forecasts a warmer than normal winter for most of the country. Any slowdown in economic activity would erode some of this growth in demand. That said, other market fundamentals may also influence gas use. Gas is currently cheaper than heating oil, residual fuel oil, and in some places even coal. This could put upward pressure on gas needs if these relationships persist. So far this year, some analysts report increased industrial gas use despite higher spot prices. Overall, EIA's latest short-term outlook indicates a modest gain of 900 MMcf/d or 1.3%, for U.S. gas use this winter compared to last winter.



## LNG Imports Decline as US prices Fall below Key World Markets



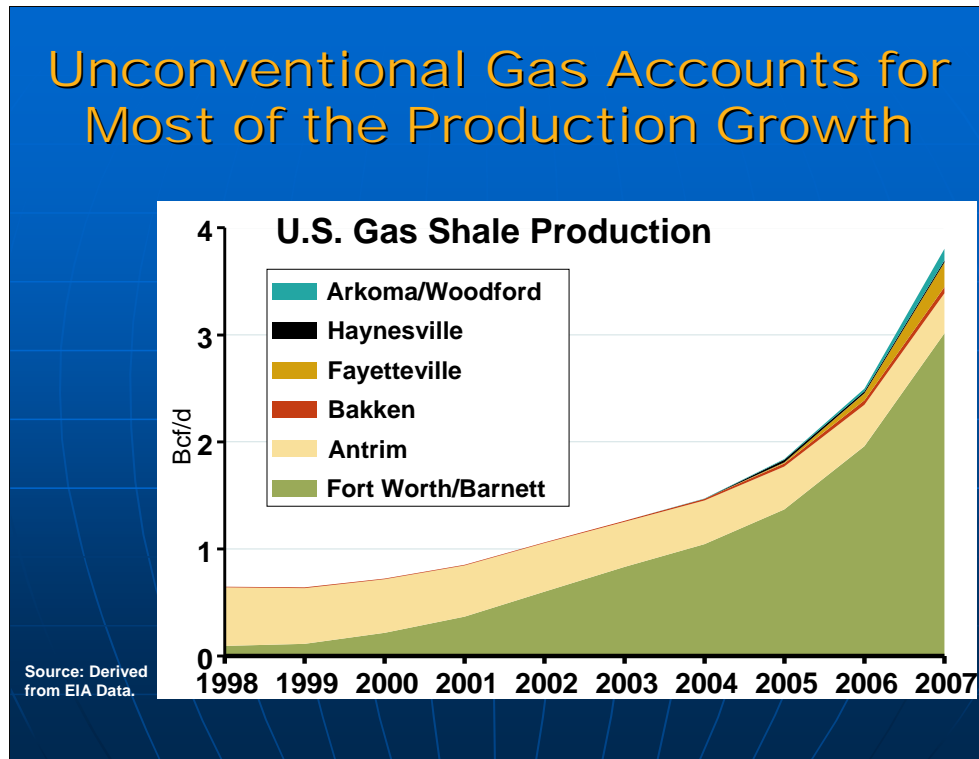
A wildcard in the supply/demand balance is LNG imports, which fell substantially this year compared to last. I'll note that the outlook is very dynamic, with recent news changing some of our expectations.

This slide shows sendout from U.S. LNG import terminals superimposed on representative gas prices in Europe and Asia. EIA's estimates that LNG imports in the U.S. will average about 1 Bcf/d this winter or about what the U.S. has imported on average so far in 2008. Moreover, the chart underscores that forward prices in the U.S. are expected to be lower than in competing markets and this is affecting LNG cargo expectations. That said, spot LNG prices in Asia recently come into parity with Europe at around \$14/MMBtu. Asia prices seem to be dropping along with oil prices.

I note that U.S. LNG imports have remained steady through terminals that rely on long-term supply contracts and when diversion economics are not favorable.

LNG will likely play a significant role in the future U.S. gas picture and add supply flexibility to the grid. 5.9 Bcf/d of new LNG re-gasification terminals, including Costa Azul, Sabine Pass, Freeport, and Northeast Gateway were added this year. A new 1 Bcf/d terminal is expected to be completed this winter in New Brunswick, Canada which can deliver natural gas to New England via the expanded Maritimes and Northeast Pipeline. Lastly, global liquefaction capacity may increase by over 5 Bcf/d, or 24 percent, during 2009, providing more potential supplies to the U.S. and other competing markets.

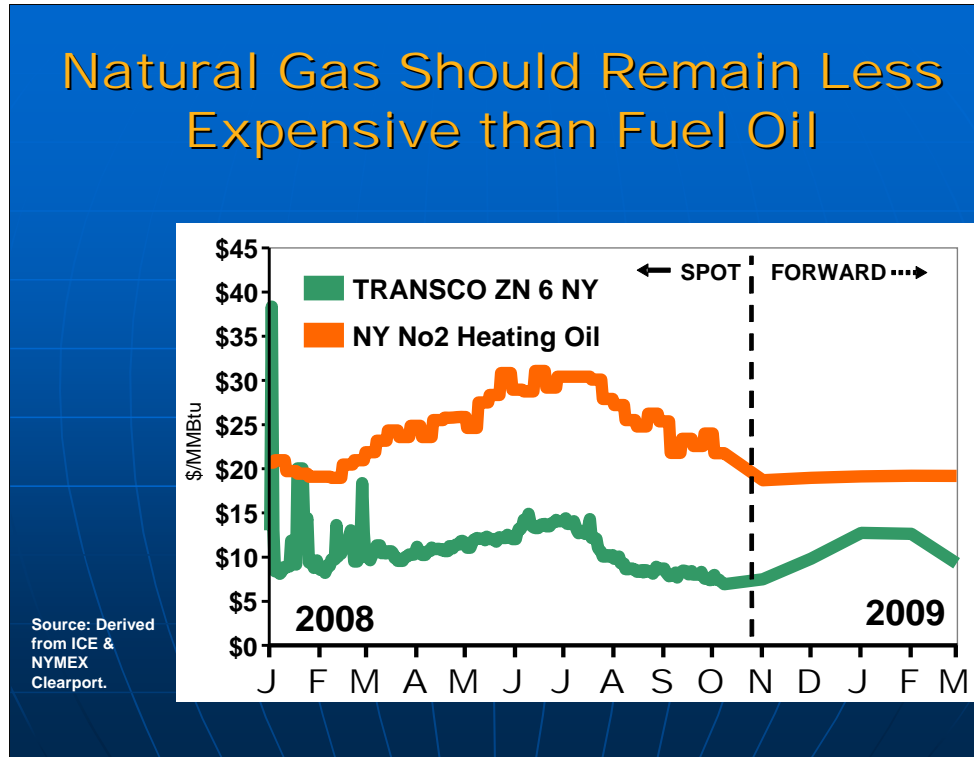
## Unconventional Gas Accounts for Most of the Production Growth



Most of the recent growth in gas production has come from unconventional gas sources. U.S. conventional gas production fell 24% between 1998 and 2007, from 37 Bcf/d to 28.5 Bcf/d. Just over half of U.S. daily gas production can now be considered to come from conventional sources compared to 72% ten years ago. Gas production from unconventional gas sources (shale, tight sands, coalbed methane and deep gas) grew at an average annual rate of 6.4% between 1998 and 2007, from 14 Bcf/d to 25 Bcf/d and could soon become the dominant source of gas production in the U.S.

The pace of unconventional gas production has quickened in the past two years, with gas shale showing the most rapid rate of growth. Between 2005 and 2007, U.S. gas shale production doubled from 1.8 Bcf/d to 3.8 Bcf/d. Also during this period, tight sands production rose 11% and coalbed methane rose 4%. The most prolific shale gas basin is the Barnett Shale, with production from new basins such as Haynesville and Fayetteville, just beginning to ramp up. New basins, such as the Marcellus shale in Appalachia, are also under development and could show similar production growth to other gas shale basins in the coming years.

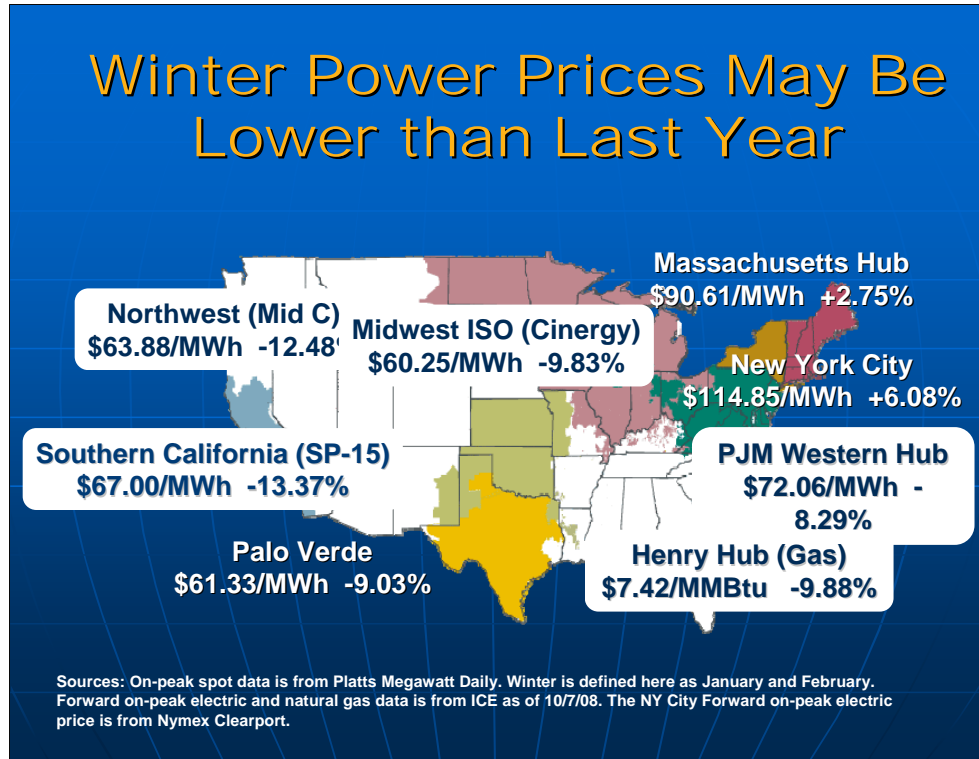
## Natural Gas Should Remain Less Expensive than Fuel Oil



While both oil and gas prices have fallen from their mid-year highs, natural gas prices remain well below heating oil prices on a per MMBtu basis.

This slide illustrates that on a British thermal unit equivalent basis, recent spot and current futures prices for gas are well below oil prices. Forward market prices now show that delivered gas at Transco Zone 6 NY averages about \$10.50/MMBtu, representing about a \$10/MMBtu discount to heating oil. This disparity in prices is affecting homeowner heating fuel decisions. Wachovia Research reports that NStar, which serves natural gas customers in Massachusetts, noted that inquiries about converting to natural gas from oil were five times higher during the first five months of 2008 than over the same period in 2007. At NiSource subsidiary Bay State Gas (also serving Massachusetts) conversion requests were up 97% for the same time periods. On Long Island, National Grid indicates that 12,000 homeowners had contacted it about switching to gas during the first seven months of 2008, more than double a year earlier.

## Winter Power Prices May Be Lower than Last Year



Finally, I will address the outlook for winter electric prices.

Other than in the Northeast, forward electric prices for the coming winter are between 8% and 13% lower compared to winter forward prices at this time last year. Forward electric prices in the Northeast are up to 6% higher than prices last year. The fall in forward electric prices over most of the country more or less matches expectations for lower natural gas prices at the Henry Hub. However, the increase in electric forwards in the Northeast matched the increase in Northeast forward gas prices discussed earlier.

High basis last year in the Northeast would appear to be influencing expectations for Northeast basis this coming winter. Last winter, basis at Transco Zone 6 averaged \$2.76 from November 07 to March 08, 83 cents higher than the previous year, and the highest average winter basis we have ever seen. Northeast gas prices were more volatile last winter than any other winter. We saw 28 instances of basis greater than \$5, double the number of instances from the 06/07 winter. Finally, forward prices for New York are also likely influenced by the fact that fuel oil will be on the margin for part of the time this winter.

This completes my presentation. We are happy to answer any questions you may have.



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