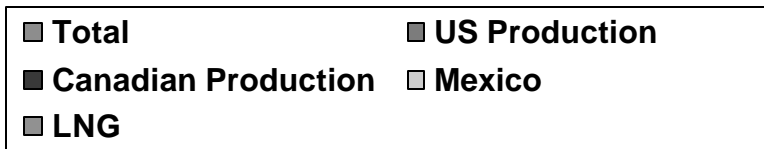
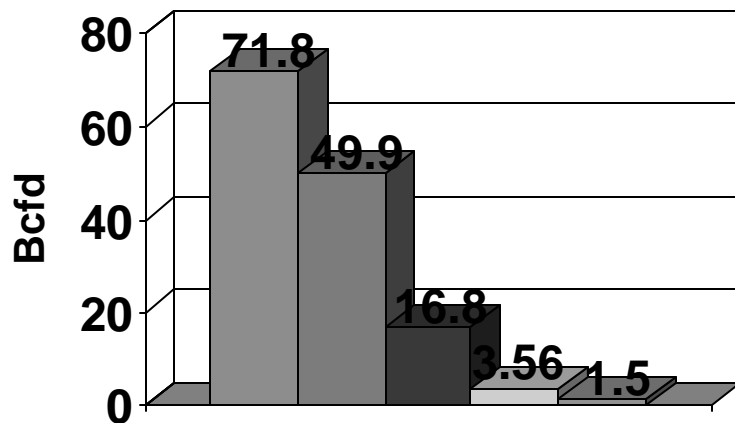


**North American Natural Gas  
Outlook: Prospects and Risks**  
*CONNECTICUT POWER AND ENERGY SOCIETY*  
**September 13, 2006**

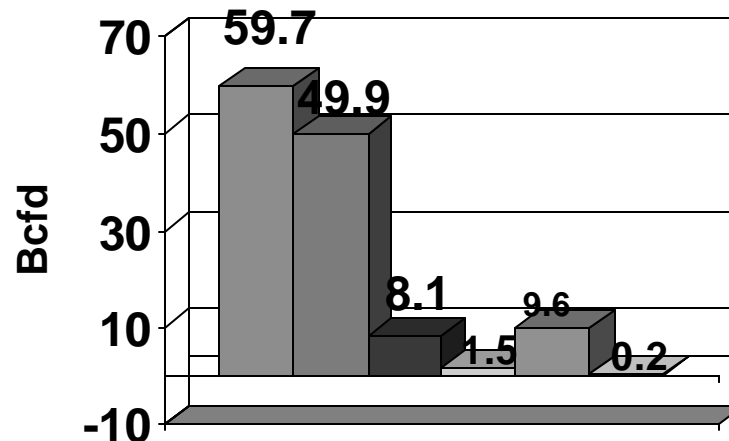
**Ron Denhardt**  
**Chief Executive Officer**

**2005 North American natural gas supply was 71.8 Bcfd and US Consumption was 59.7 Bcfd. Projected US natural gas consumption growth rates range from 1.5% to 2.5% per year from 2005-10 (1.0 to 1.6 Bcfd).**

**North American Natural Gas Supply (2005)**



**US Natural Gas Supply (2005)**



Other is storage and statistical discrepancy

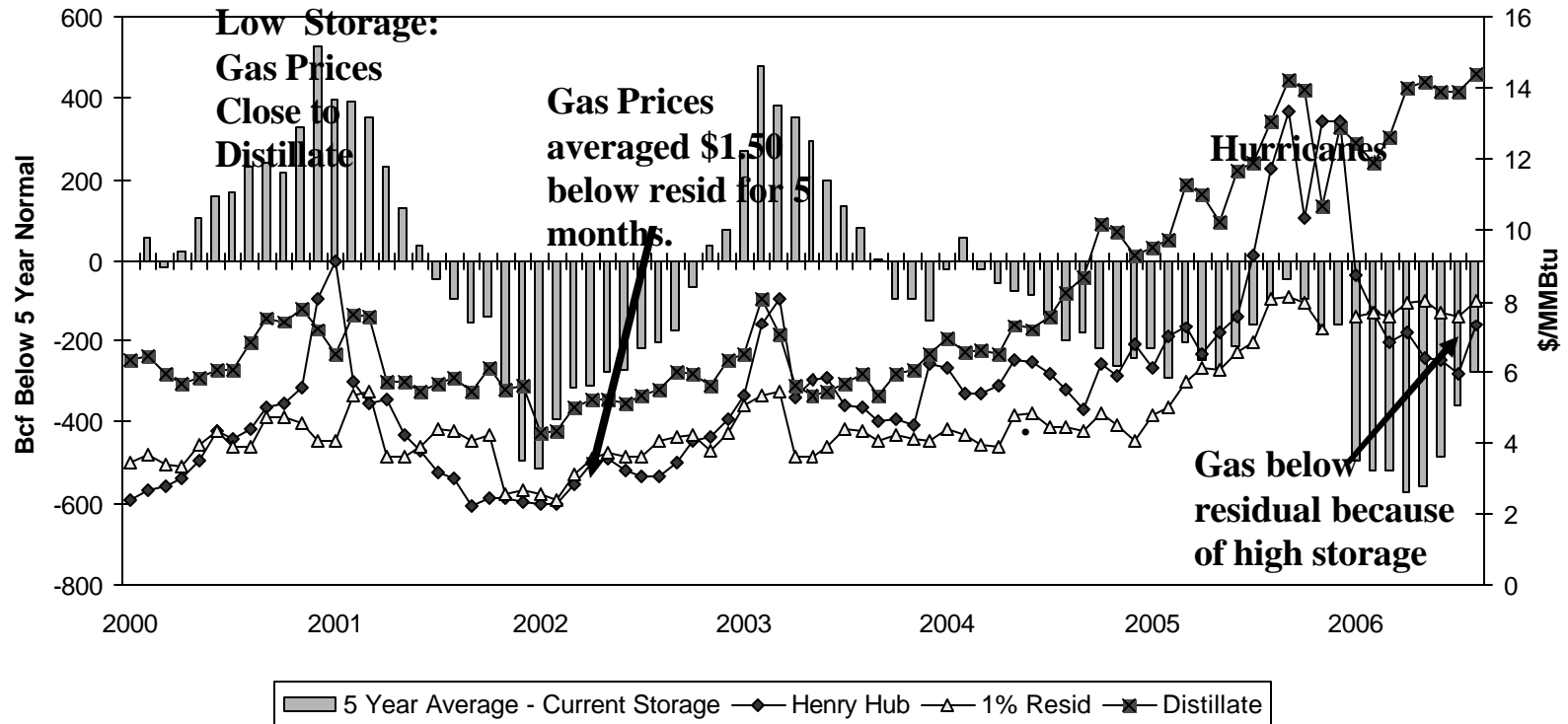
**Working gas storage is likely to end October close to 3500 Bcf vs. a record 3467 Bcf in 1991 and 3194 Bcf last year. However, storage injections suggest a tight supply-demand balance and hurricanes are still a concern.**

---

- **Weather adjusted working gas storage injections are averaging 2 Bcfd less than last year.**
- **Lower weather adjusted injections are a result of:**
  - Fuel switching to residual fuel oil (1 Bcfd)
  - More liquids taken out of the gas stream (.5-1 Bcfd)
  - Extremely hot weather has caused more use of gas turbines
  - Storage capacity is being strained
  - Economic growth with flat supply

Henry Hub prices tend to be closer to residual fuel oil when storage is higher than normal, and to distillate when storage is below normal. (1% Residual \$8, Distillate \$14). Heating season forward price for gas is about \$10.00 per MMBtu.

## Henry Hub Prices vs Working Gas Storage



**With normal weather, we expect Henry Hub prices to average about \$1.00 per MMBtu greater than 1% residual fuel oil during the heating season. There is substantial downside risk from this level and even more from current forward market prices which are over \$2.00 per MMBtu higher than 1% residual fuel oil.**

- **10% Change in HDDs could change heating season demand 400 Bcf or more. Forecast is for warmer than normal winter.**
- **Last heating season weather adjusted storage withdrawals were 2 Bcf (300 Bcf) below the 5 year average because of high prices. High prices are likely to cause storage withdrawals per HDD to be lower than average again this heating season.**

### **Heating Season Supply – Disposition (Bcf/d)**

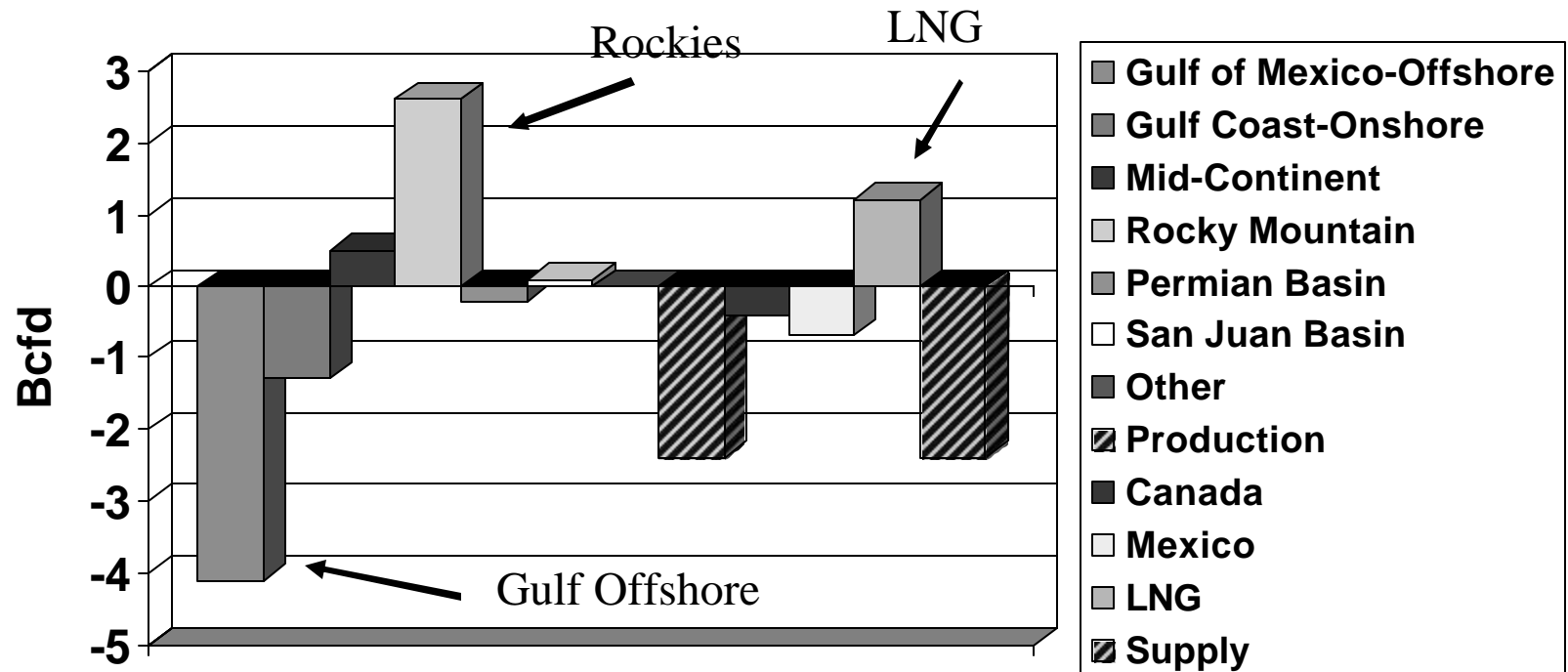
<b>Sector</b>	<b>06-07</b>	<b>05-06</b>	<b>Change</b>	<b>%Change</b>
Residential	23.0	21.4	1.7	7.2%
Commercial	12.7	12.2	0.5	3.9%
Industrial	18.8	18.4	0.4	2.0%
Electric Power	13.7	12.6	1.1	8.1%
Other	4.94	4.92	0.03	0.5%
<b>Total Deliveries</b>	<b>73.2</b>	<b>69.52</b>	<b>3.67</b>	<b>5.3%</b>
Dry Gas Production	51.5	50.1	1.4	2.8%
Canada & Mexico	7.6	7.8	-0.2	-2.5%
LNG	1.7	1.4	0.3	24.8%
Net Imports	9.3	9.2	0.2	1.7%
Supplements	0.2	0.2	0.0	-6.7%
<b>Total</b>	<b>61.0</b>	<b>59.5</b>	<b>1.5</b>	<b>2.6%</b>
Storage Withdrawals	12.2	10.0	1.5	15.4%
<b>Supply</b>	<b>73.2</b>	<b>69.5</b>	<b>3.7</b>	<b>5.3%</b>

#### **Storage (Bcf)**

Oct 2006	3501	Nov 2007	1668
----------	------	----------	------

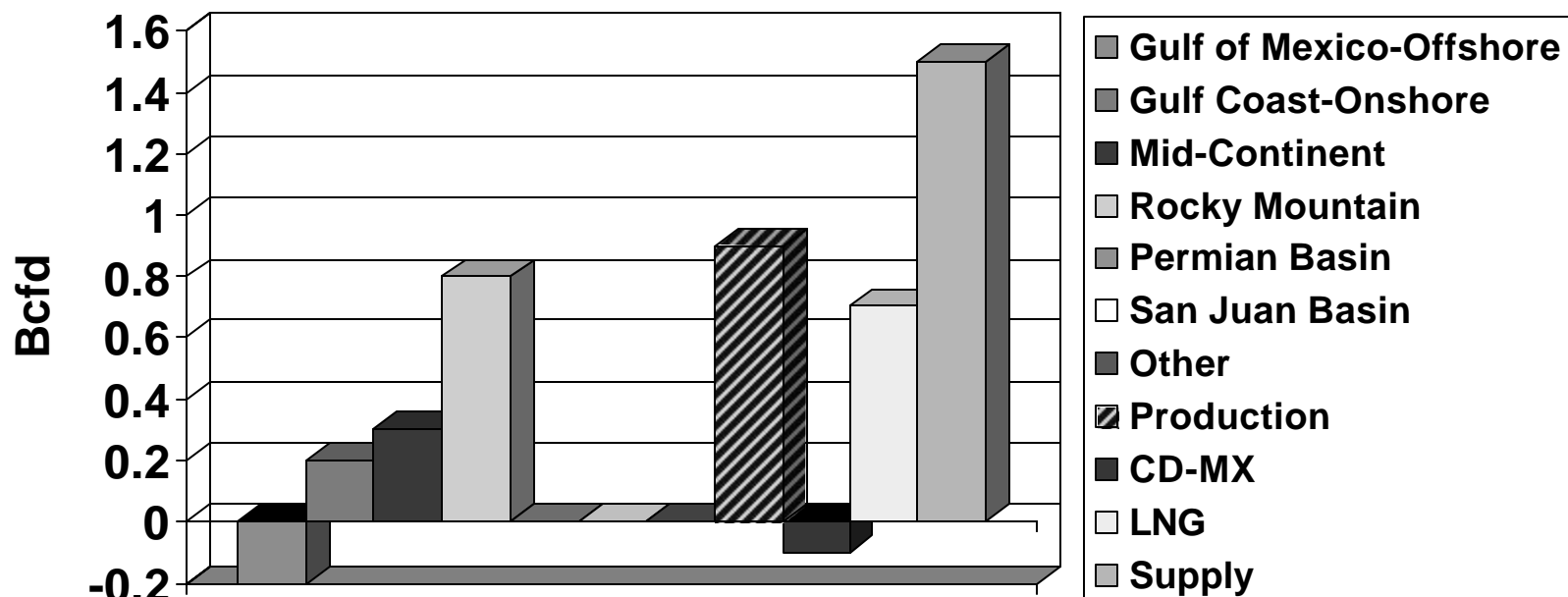
**US supply has declined over the past 5 years.  
 Offshore gulf coast production has declined sharply.  
 The growth has been from Rockies and LNG imports.**

**Supply Change (2000-2005)**



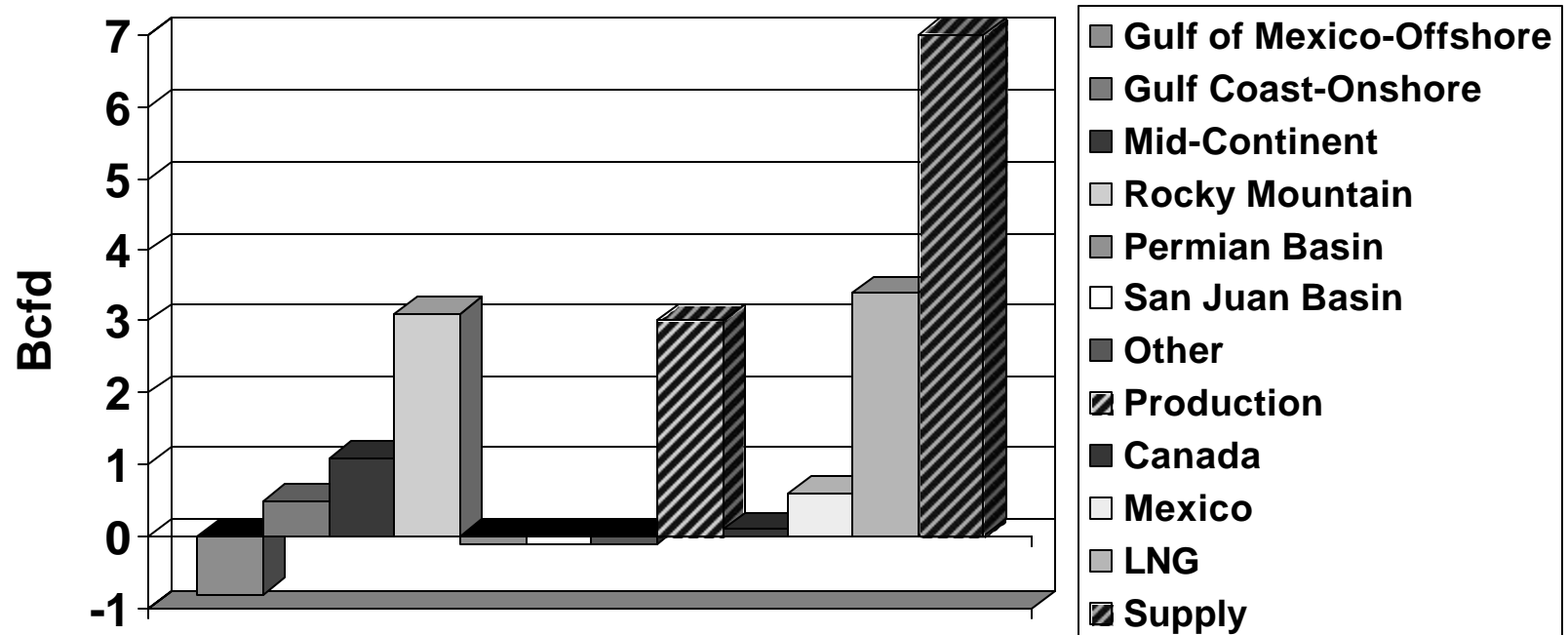
**Barring hurricanes and extreme weather, increased supply (2.5% growth) is likely to cause non-heating season prices to be \$1.00 - \$2.00 per MMBtu below NYMEX (currently \$9.25 per MMBtu) in 2007.**

### Supply Change (2006-2007)



**US supply decline is projected to reverse its historic trend and grow sharply. The major sources of growth will be the Rockies and LNG imports. This supply would support an annual growth rate of 2.2%. Unless demand growth is very strong, prices should fall significantly in real terms.**

## Supply Change (2005-2010)

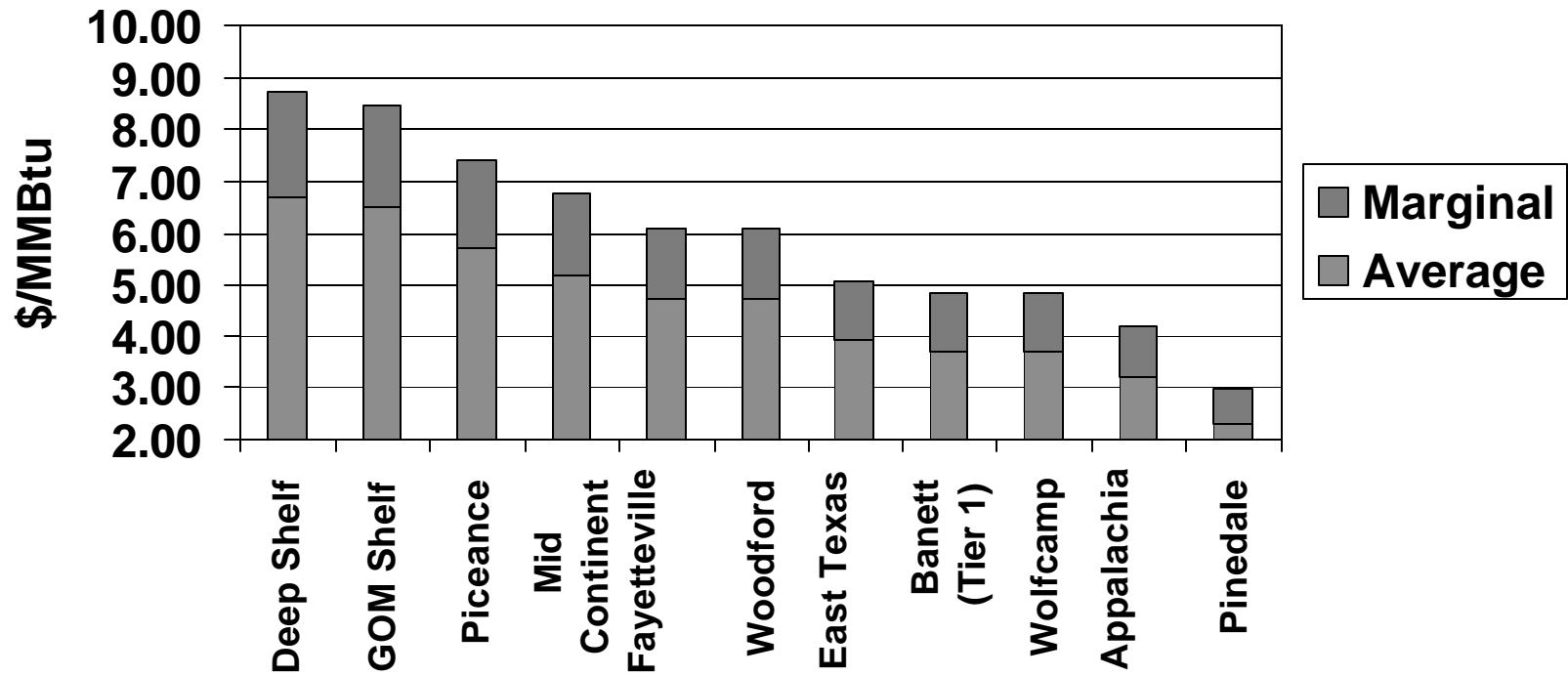


Source: SEER, Lippman Consulting Inc.



**Substantial volumes of production could be lost at prices below \$7.00 - \$8.00 per MMBtu. A major uncertainty is the marginal production cost and how it will change over time.**

## Production Cost



Source: Pickering Partners

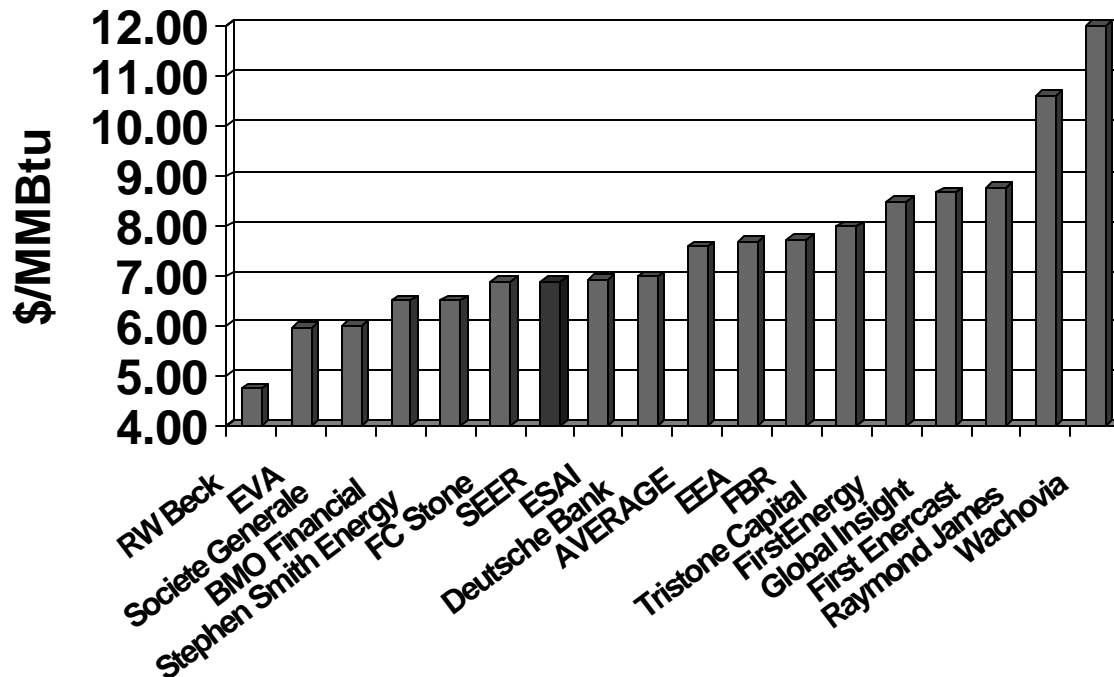
**Between 2008 and 2010 LNG imports and oil price declines are likely to cause Henry Hub prices to decline but there is substantial disagreement about how far.**

---

- **By 2008 substantial increases in oil production and refinery capacity, are likely to cause oil prices to decline to between \$40 and \$55 per barrel. Longer term there is substantial controversy about oil supply but oil shale and coal liquefaction are economic at \$30 to \$35 per barrel.**
- **Political instability, increasing reliance on OPEC, project delays, and faster than expected declines of existing production provide the upside for oil and natural gas prices.**
- **Gas prices will be linked to oil through fuel switching, conversion of oil fired plants to gas, gas and oil use for chemical processes, and gas to liquids production. North America will have to compete for world supplies. The value of the US dollar will be as important as production and shipping cost for LNG.**

There are a wide range of projected prices for 2010 but most are between \$6.00 and \$8.00 per MMBtu.

## 2010 Henry Hub Prices (Current Dollars)



**Prices are currently well above long run production cost and are likely to decline significantly in real terms but the outlook is subject to tremendous uncertainty. Consequently, risk management is crucial.**

---

- **During the remainder of the non-heating season a major hurricane could cause a large increase in the prices.**
- **Working gas storage at the end of the heating season could vary by 800 Bcf depending on weather.**
- **A slow down in economic growth could cause a sharp drop in oil and natural gas prices.**
- **Geo-political events provide the potential for oil price shocks.**
- **Longer term technology, the size of the resource base, demand growth, and the cost of rigs will be major forces driving prices.**