Natural Gas Prices: Past Trends and Future Projections

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Natural Gas Prices

- Natural gas prices tend to be very volatile
- Relatively constant prices with occasional extremes
- Very difficult to predict future prices
  - we do not project natural gas prices, but they are a factor in electricity use and prices, so we do look at the projections of others
Factors Affecting Prices

• Demand
  – economic factors
  – weather
  – electricity sector

• Supply
  – drilling
  – pipelines
  – imports

• Storage

• Prices of other fuels
  – oil
  – coal
Indiana Natural Gas Consumption by Sector (Bcf)

- Total
- Residential
- Commercial
- Industrial
- Electricity

Years: 1997 to 2007
2008 U.S. Natural Gas Imports & Exports (Bcf)

Indiana Natural Gas Supply in 2007 (Bcf)

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>3.6</td>
</tr>
<tr>
<td>Imported</td>
<td>2,432</td>
</tr>
<tr>
<td>Exported</td>
<td>1,874</td>
</tr>
</tbody>
</table>

77% of the gas that entered the state (from the south and west) passed through and left the state (to the north and east)
Natural Gas Near-term Futures Prices ($/mmBtu)

Data source: Energy Information Administration (EIA)
What’s changed

• About 10 years ago, the amount of gas produced per new well started dropping
  – the best gas locations were becoming played out
• Also, large amounts of new gas-fired electricity generators were built
• As prices increased, new wells were drilled, but total production stayed flat
Since Then

- Price spikes have become more pronounced
- The “normal” price of gas has increased from around $2 to the $4-6 range
- Prolonged high prices in the fall of 2005 were due to supply disruptions after Hurricanes Katrina & Rita
More Recently

• Production of gas from “unconventional” sources, such as shale gas
• High prices in 2008 were largely a result of infrastructure issues
  – Pipeline system had to catch up to new wells
• New pipelines came into place around the same time as the demand dropped due to the economy
Current Natural Gas Consumption

• EIA estimates gas consumption will fall by 2.4 % in 2009
  – 12 % in industrial sector

• The price decrease makes gas more attractive for electricity generation
  – gas use by electricity sector expected to increase by 4.3 % despite 3 % drop in electricity sales
Current Natural Gas Production

- Low price has curtailed drilling activities
- Total working rigs in U.S. down by 45 % since start of the year
- EIA expects 2009 U.S. production to be 0.9 % higher than 2008 and 2010 production to be 3.5 % lower.
Current Natural Gas Storage

- As of the end of August 28, working gas storage was 3,323 Bcf
  - 501 Bcf above the 5-year average
  - 489 Bcf above the year before
- EIA projects it to reach 3,840 Bcf by end of October, beating the previous record
  - 3,565 Bcf in 2007
EIA’s Short-term Outlook (September 2009)

• Prices will remain low for the rest of 2009, averaging $3.65/thousand cubic feet for entire year
  – resilient production
  – high storage levels
  – low demand
  – possible increase in imports

• Prices will rebound somewhat in 2010, averaging $4.78/thousand cubic feet
EIA’s Long-term Projection (March 2009)

- Real (inflation adjusted) prices stay relatively flat until early 2020s then rise as more expensive resources are developed
- Prices vary depending on technology and economic growth assumptions
Indiana Real Residential Natural Gas Prices (2007 $/mmBtu)

Data source: EIA