

Are You Dealing with Ongoing Energy Price Shocks?

Reducing Risk and Measuring Added Value For Building Energy Use

This brochure presents the many risks from building energy use and the value of standard energy measurement tools including the ASTM building energy protocol. The brochure also covers measuring the added cash flow from green building renovations with the *Green Value Score*.

Wall Street due diligence released at the New York Stock Exchange validated that the **costs for conventional energy will rise about 20% per year** for the next ten years due to:

- fossil fuel depletion (validated globally by energy investment bankers)
- growing regulatory constraints on carbon
- global population growth increasing energy demand

Cost increases for coal, natural gas, and crude oil, will in turn increase the cost of electricity and fuels and thus increase operational, financial, competitive, and obsolescence risks to all business. Also, energy price volatility creates substantial financial risks for business.

According to Boone Pickens, former CEO of Mesa Petroleum with a current \$10 billion investment in wind energy, all of the major oil companies have known about oil and natural gas depletion and long-term rising conventional energy costs for many years, but are afraid to tell the public.

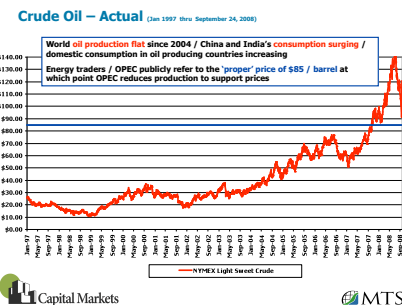
According to the graphs below provided by Capital Market Partnership (CMP) as released at its New York Stock Exchange press conference, the prices in coal, crude oil, and natural gases have all continually risen over the past ten years. The data alongside the graphs indicate each resources' current cost information and expected long-term increasing prices.

Crude Oil

Most Recent Pricing. According to Oil Depletion Analysis Centre (4/6/2010), "Oil hit an 18-month high of \$86.70 a barrel in New York on April 5 of this year" and "analysts in the US predicted that speculators would send the price towards \$100 by the summer".

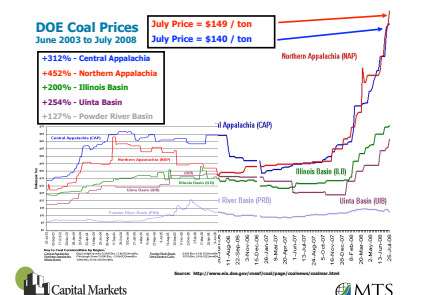
Long Term Trend. In addition to the prices in the graph (opposite and below in the Appendix), Simmons & Company International, the leading energy investment bankers, presents in "Twin Threats to Oil Resource Scarcity: Oil & Water" (2/24/10), that the lack of transparent data on the amount of oil available along with the known fact that we have past its peak, has created a global economic risk.

http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article7088354.ece
<http://www.simmonsco-intl.com/research.aspx?Type=msspeeches>



Coal

Most Recent Pricing. The New York Times article "Q & A: The State of the Coal Industry" (4/6/2010), informs that "despite the lower demand, coal prices have remained strong" and "much of that is because of long-



term coal contracts that were locked up in 2008 when prices for all forms of energy were at record levels”. <http://www.nytimes.com/aponline/2010/04/06/business/AP-US-Coal-Industry-QA.html>

Long Term Trend. Seventy percent of China’s energy comes from coal <http://www.eia.doe.gov/cabs/China/Background.html>, thus what happens in China affects global coal prices because China has the largest economy and population

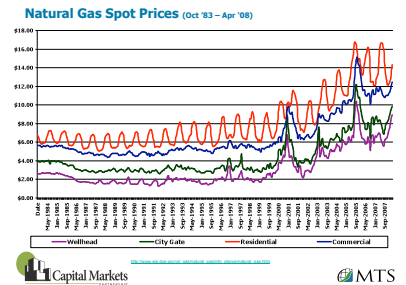
Natural Gas

Most Recent Pricing. The U.S. Energy Information Administration (EIA) reveals that average consumer price of natural gas for residential, industrial and commercial uses has been repeatedly volatile for the past four years. EIA expects natural gas prices to compete with oil.

http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/natural_gas_monthly/current/pdf/figure_03_04.pdf

Long Term Trend. Simmons International reports in “At Risk: Sustainability of Oil and Gas”, (Jan. 14, 2010) that risk is magnified by a lack of transparency of data in the amount of natural gas resources remaining. Simmons also reports that China’s emerging economy has an “insatiable energy appetite”. The increase in demand for natural gas along with its depleting state, ensures an increase in market price.

<http://www.simmonsco-intl.com/files/AON%20Annual%20Energy%20Insurance%20Symposium.pdf>



Solution

Simmons International has documented global diminishing supply of oil and gas reserves and validated that they peaked in 2005, and thus are on a path toward accelerated depletion.

(*Capital Markets Briefing Paper: The Business Case for Commercializing Sustainable Investment, Released at the NYSE in 2009*). See *Twilight in the Desert* (2005). <http://www.simmonsco-intl.com/files/Twilight%20in%20the%20Desert%20Presentation.pdf>

Simmons International advocates that in order to lower risks in the consumption of these resources, there is an urgent need for new energy plans. <http://www.simmonsco-intl.com/files/AON%20Annual%20Energy%20Insurance%20Symposium.pdf>

Given rising conventional energy costs over the long term, owners and investors now have the opportunity to measure building energy use and costs pursuant to a standard ASTM national consensus methodology. This standard also enables owners and investors to identify increased cash flow and reduced expenses from green building renovations by using the national consensus *Green Value Score*. <http://www.capitalmarketspartnership.com/>

Benefits of Relevant Consensus National Standards

- ASTM standard for Building Energy Performance provides an efficient and effective way to measure energy use and cost
- CMP *Green Value Score* provides an easy way to identify increased cash flow and reduced expenses from green building renovations, both at the portfolio and property level.
- The SMaRT Sustainable Product Standard provides manufacturers with the means to obtain market credit through LEED and Federal Procurement, for their conventional energy reductions, and increases profitability.

Appendix: Energy Cost Increases

The following slides show long-term increases in conventional energy costs.

Sustainable Investment Initiative

Green & Climate Neutral Buildings
Green Mortgages
Green Building Securities
Green Building Underwriting Standards

Reduced Risk & Higher Valued Collateral
Cheaper Cost of Capital / Increased Liquidity
Certified Sustainable Product Investment



Supported by Energy, Bank of America & Anonymous Foundations,
JP Morgan, Federal Home Loan Bank & CMP Partners



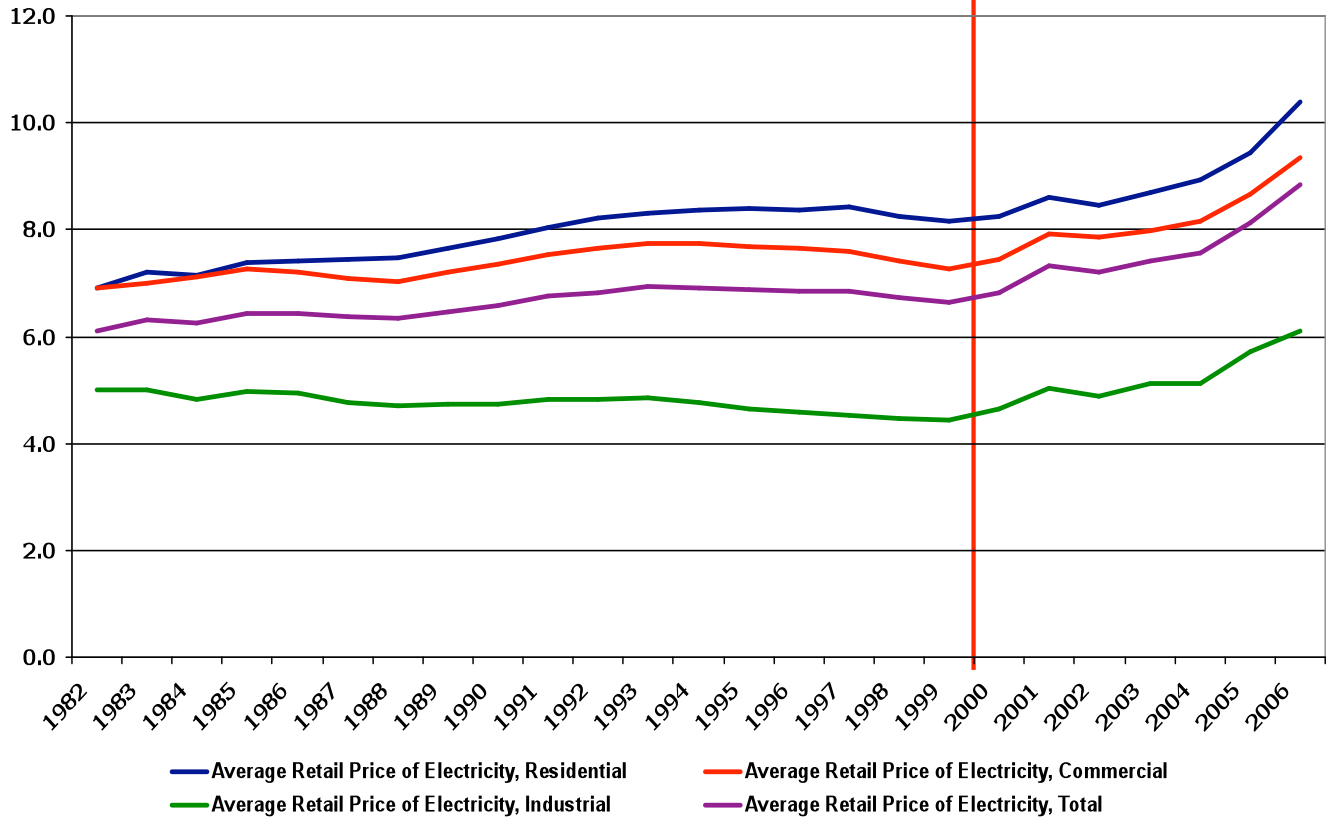
Capital Markets Partnership (CMP) – Partial List

- City of San Francisco**
- City of Chicago**
- City of Dallas**
- City of Denver**
- City of Miami**
- City of New York**
- City of Oakland**
- City of San Jose**
- City of Santa Monica**
- City of Seattle**



US Electricity Prices (1982 – 2006)

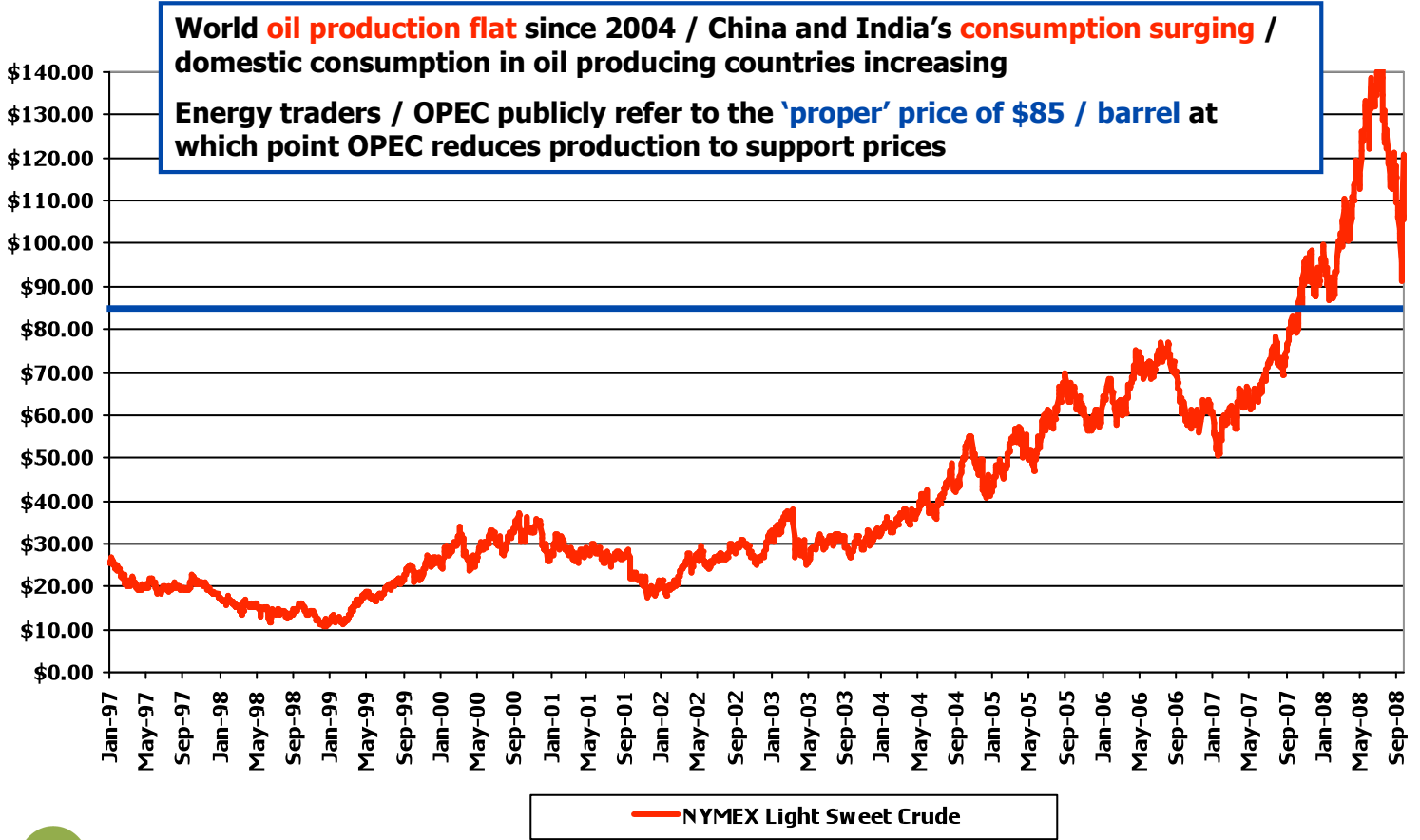
¢ / kwh



Source: US Department of Energy
<http://www.eia.doe.gov/fuelelectric.html>



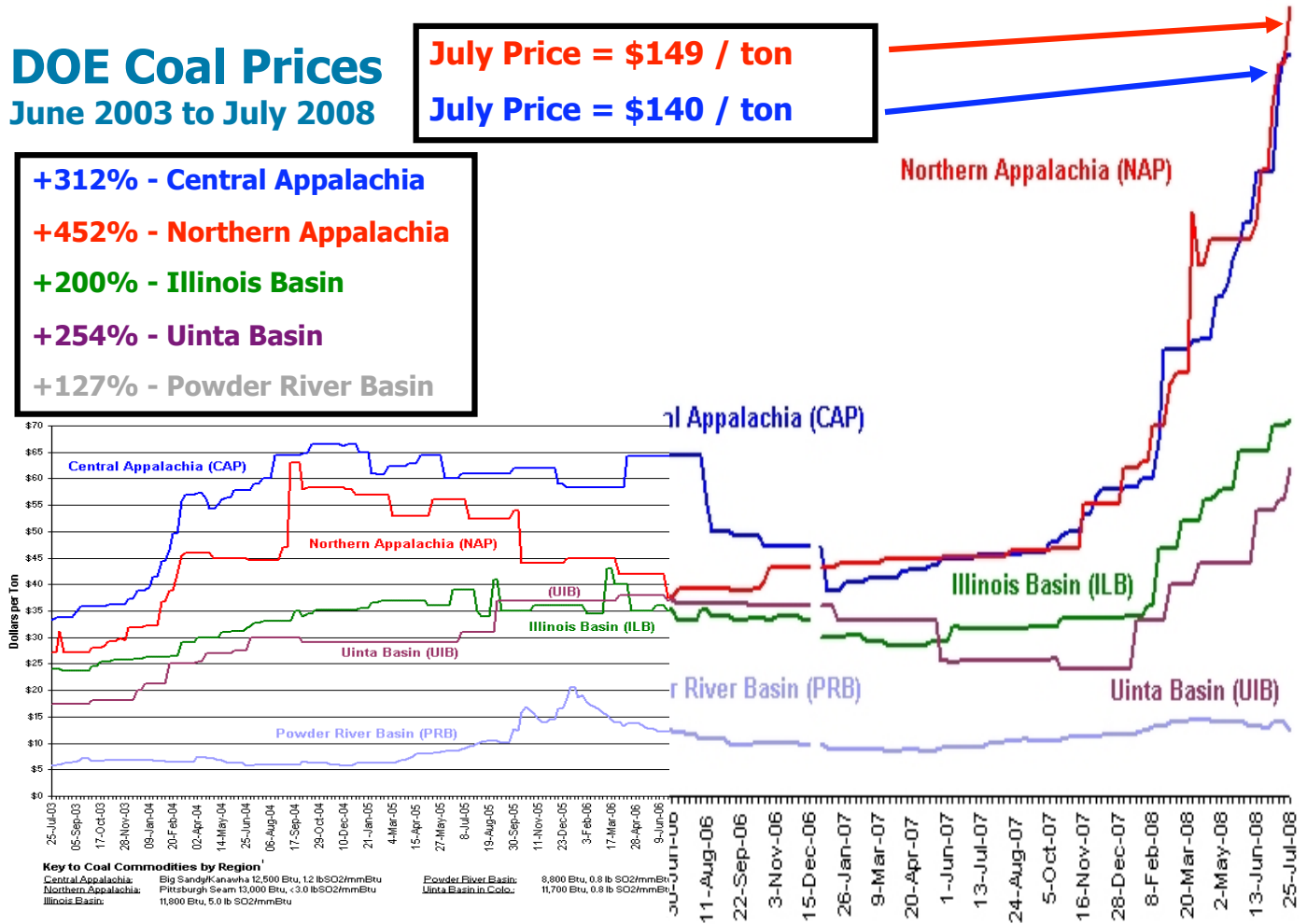
Crude Oil – Actual (Jan 1997 thru September 24, 2008)



DOE Coal Prices June 2003 to July 2008

July Price = \$149 / ton
July Price = \$140 / ton

- +312% - Central Appalachia**
- +452% - Northern Appalachia**
- +200% - Illinois Basin**
- +254% - Uinta Basin**
- +127% - Powder River Basin**

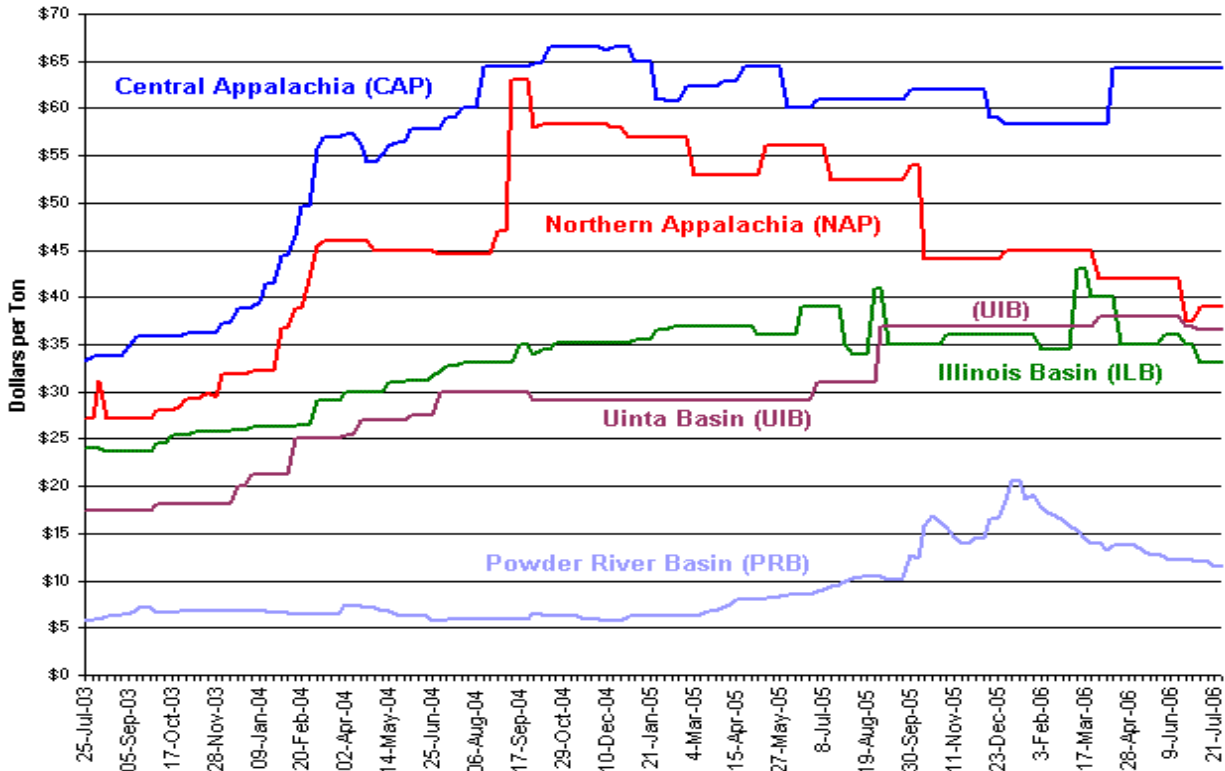


Source: <http://www.eia.doe.gov/cneaf/coal/page/coalnews/coalmar.html>



DOE Coal Prices

June 2003 to July 2006



Central Appalachia
+88%

Northern Appalachia
+41%

Illinois Basin
38%

Uinta Basin
114%

Powder River Basin
100%

Key to Coal Commodities by Region¹

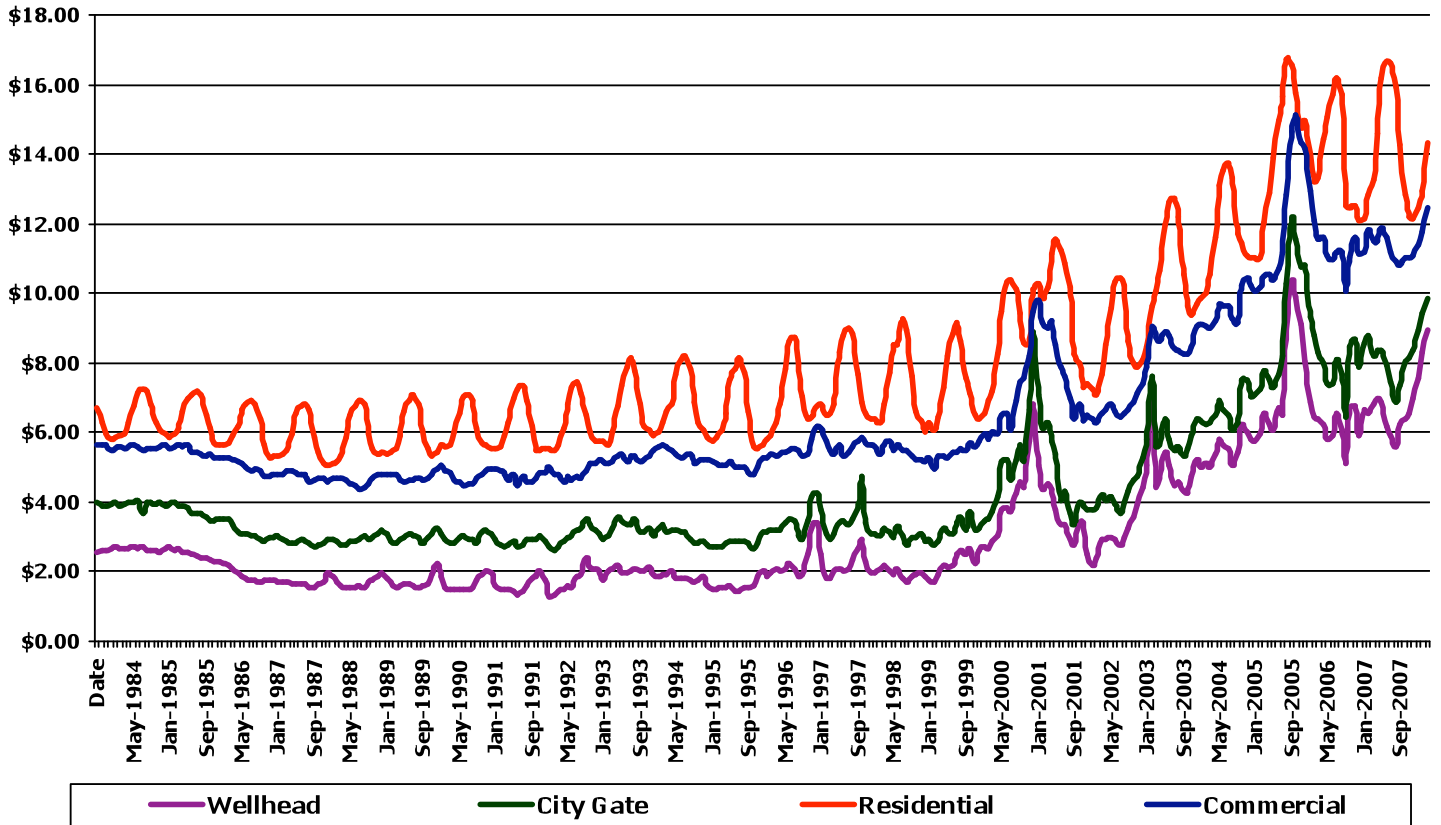
Central Appalachia: Big Sandy/Kanawha 12,500 Btu, 1.2 lbSO₂/mmBtu
Northern Appalachia: Pittsburgh Seam 13,000 Btu, <3.0 lbSO₂/mmBtu
Illinois Basin: 11,800 Btu, 5.0 lb SO₂/mmBtu

Powder River Basin: 8,800 Btu, 0.8 lb SO₂/mmBtu
Uinta Basin in Colo.: 11,700 Btu, 0.8 lb SO₂/mmBtu

Source: <http://www.eia.doe.gov/cneaf/coal/page/coalnews/coalmar.html>



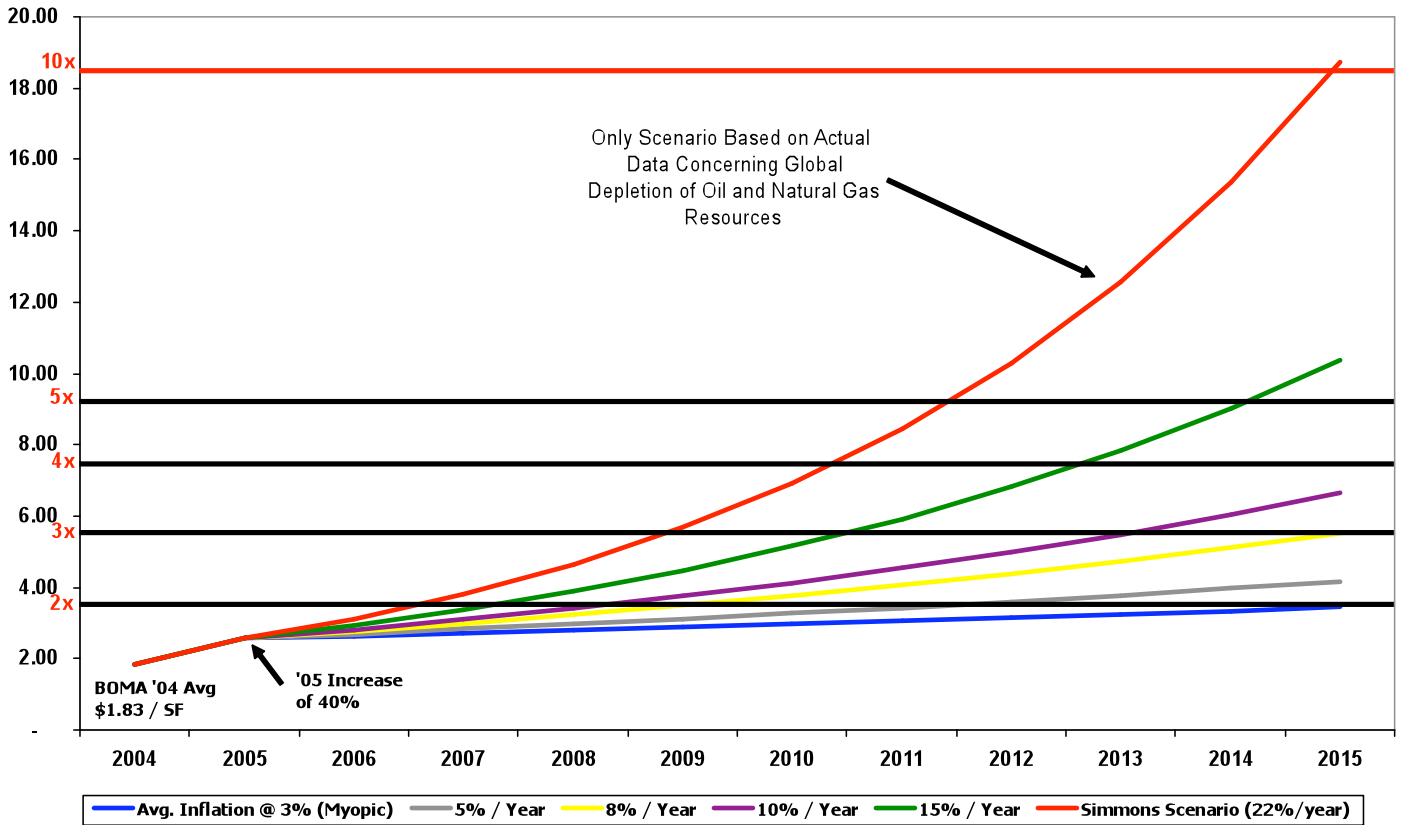
Natural Gas Spot Prices (Oct '83 – Apr '08)



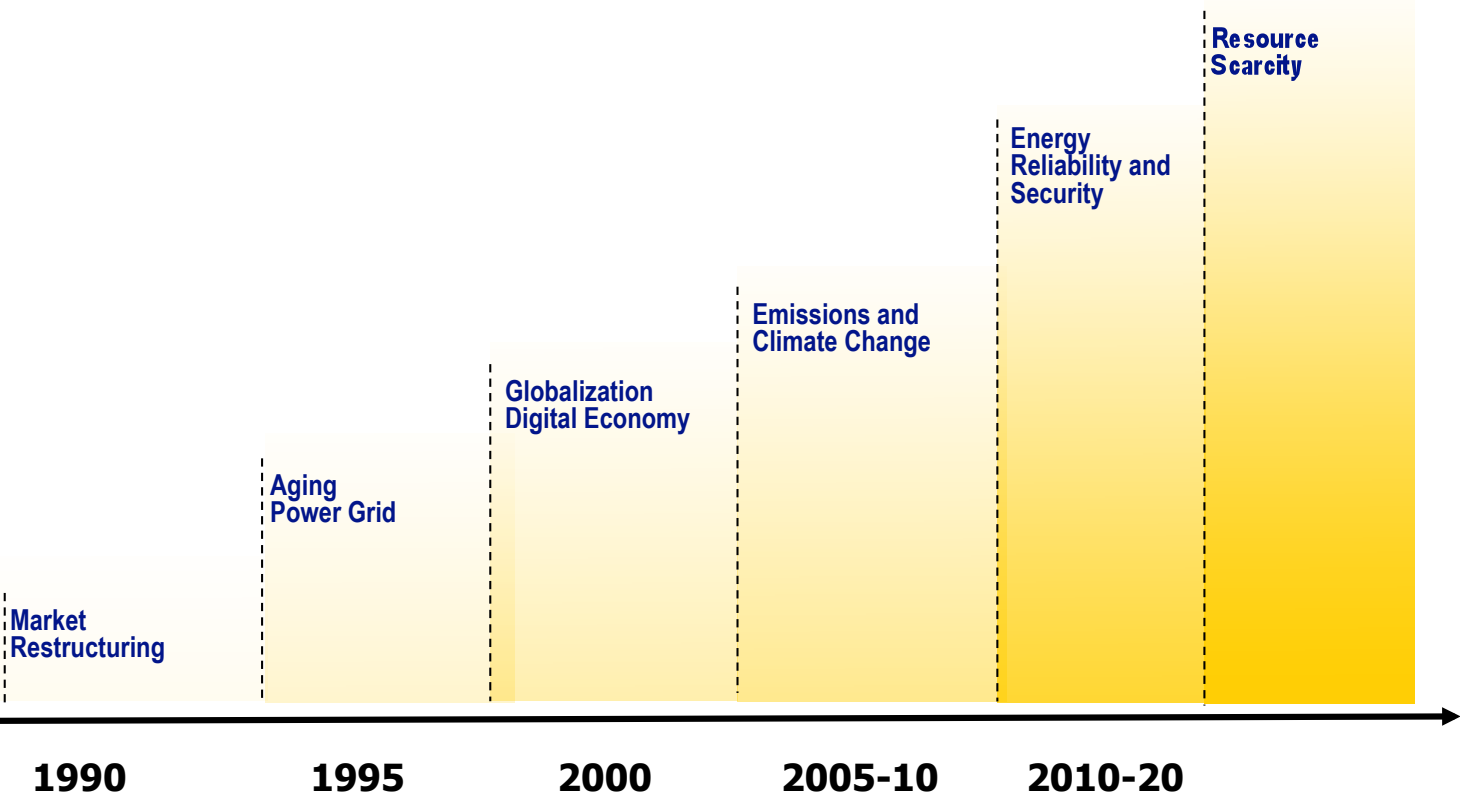
http://www.eia.doe.gov/oil_gas/natural_gas/info_glance/natural_gas.html



Conventional Energy Costs Expected to Continue Increasing at 20% / yr. for 10 yrs.



Energy Market Drivers





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