

It's not different this time

"Although increased supply from shale gas appears to have changed the production profile, we have seen similar scenarios occur after past spikes. The inherent lags between changes in drilling and production created natural gas spikes over the last ten years, and will continue to do so after this and every trough. All Americans paid a high price for over-reliance on natural gas in the last ten years. Our country cannot afford to repeat that mistake." -- Edward Stones, representing Dow Chemical Co. in testimony before the U.S. Senate, 2009.

References:

- [1] http://books.nap.edu/catalog.php?record_id=12091
- [2] Energy data based on files from EIA at <http://www.eia.doe.gov/>
- [3] <http://energy.senate.gov/public/index.cfm?FuseAction=Hearings.Witnesses>
- [4] <http://www.liheap.org/databook02/>

About Frank Clemente, Ph.D.

Dr. Clemente is a Professor at Penn State University where he specializes in research on the socioeconomic aspects of energy policy. His work has appeared in *World Oil*, *Public Utilities Fortnightly*, *Oil and Gas Journal* and a variety of other energy related media. *The materials presented here are solely the responsibility of the author and do not represent Pennsylvania State University in any manner.*



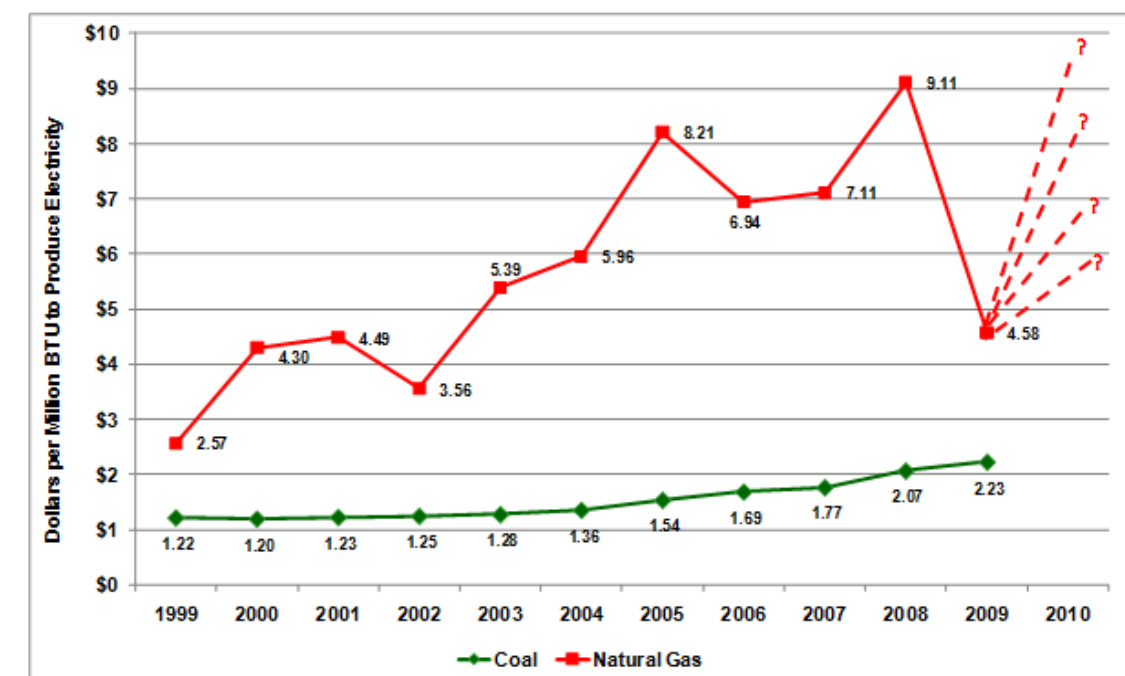
Natural Gas Price Volatility is a Continuing Concern

"The results for electricity from natural gas strengthened this conclusion: given the low and high prices of natural gas in recent years, [gas] can be one of the lowest cost - or one of the highest cost - sources of electricity." -- National Research Council, 2009

Natural gas prices are generally viewed as the most volatile of energy costs. This volatility is of increasing importance in the United States because there is now a strong correlation between gas prices and electricity prices for tens of millions of consumers.

At least 14 states now obtain more than 30 percent of their electricity from natural gas and are particularly susceptible to persistently destabilized prices. These states are: **AZ, CA, FL, LA, MA, ME, MS, NJ, NV, NY, OK, OR, RI and TX.**

Coal Prices to Produce Electricity are Lower and Far More Stable Than Gas Prices [2]



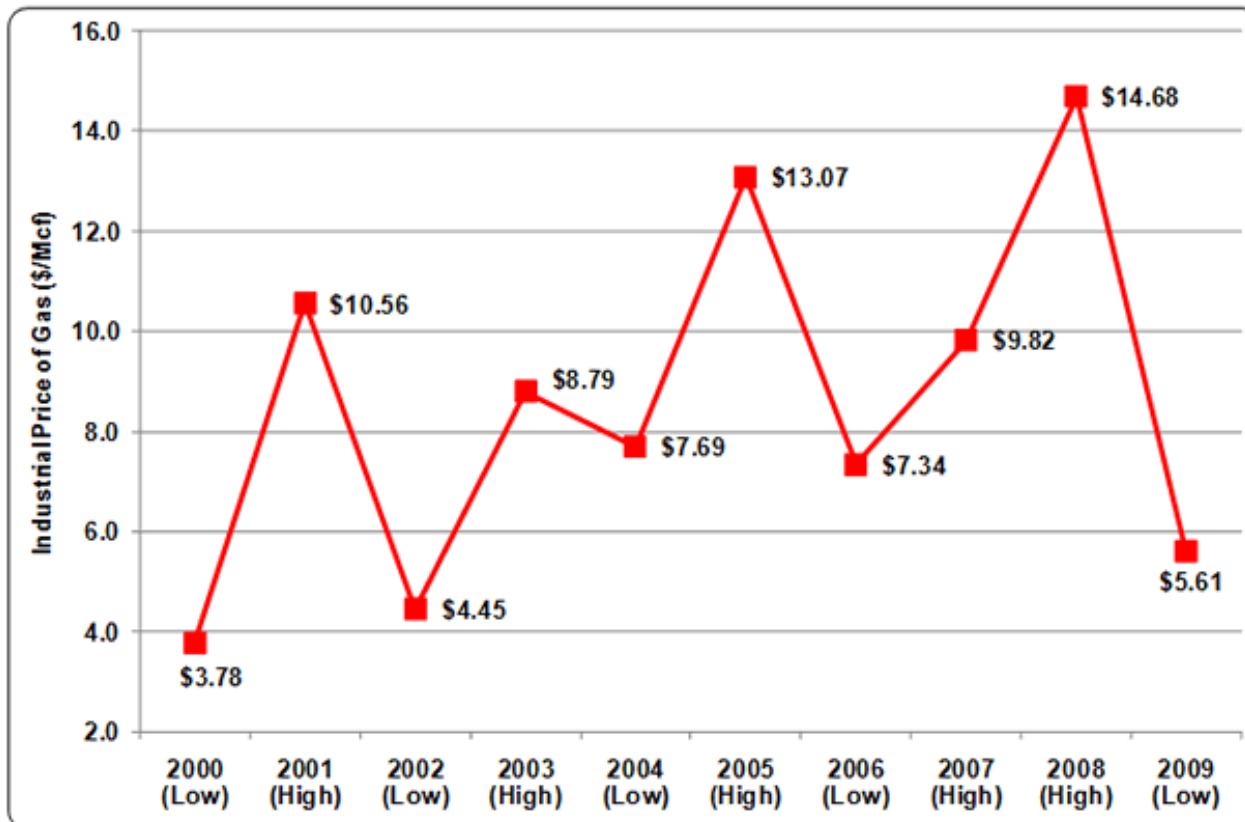
Volatility Also Adversely Impacts Many Manufacturing Companies

"Since 1997, there have been five natural gas price spikes. These price spikes have significantly contributed to the US manufacturing sector losing over 3.7 million jobs." -- Edward Stones, representing Dow Chemical Co. in testimony before the U.S. Senate, 2009 [3]

A wide variety of manufacturing firms utilize natural gas in the production process -- often as an essential feedstock. The impact of price volatility on these companies is far-reaching.

For example, in Illinois, which suffers from one of the nation's higher unemployment rates:

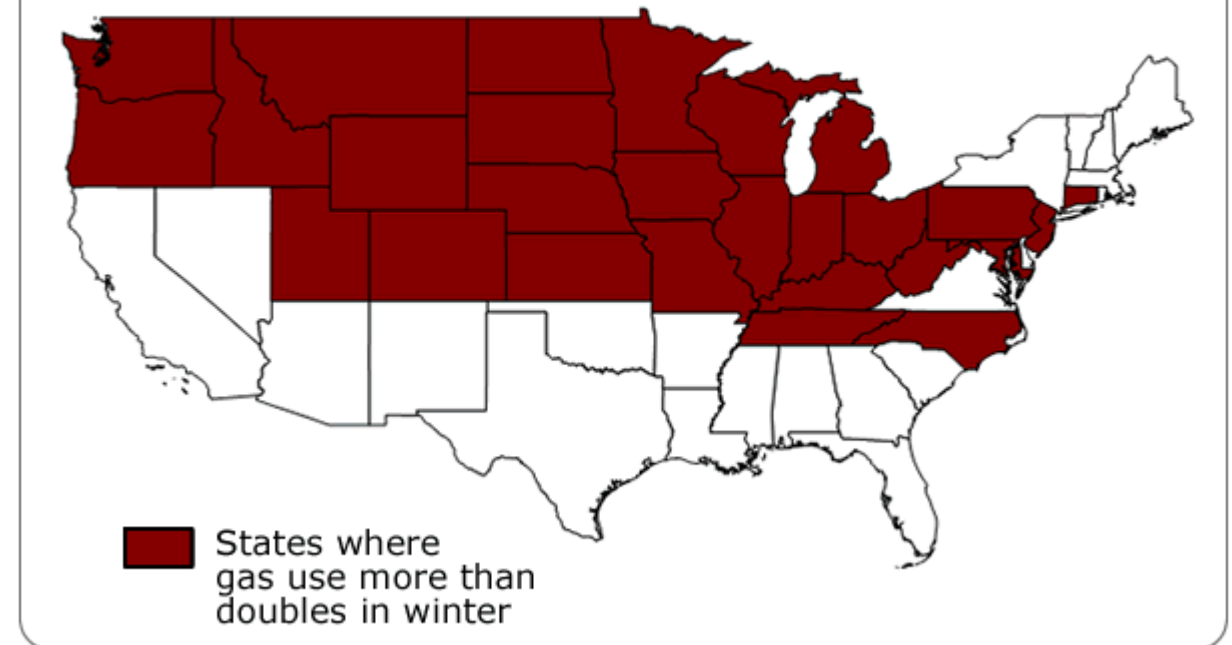
The Roller Coaster Ride of Industrial Gas Prices in Illinois Over the Past Decade



Families bear the brunt of fluctuating gas prices

Natural gas price volatility over the past decade has severely impacted families. In 2000, for example, residential gas prices started at \$6.37/mcf but escalated to \$13.74 in 2004. They then jumped to \$20.24 in 2008 but dropped to \$11.25 by the end of 2009. Upwards of 60 percent of the homes in the United States are heated with natural gas. Many of these homes are concentrated in the Midwest and mid-Atlantic states. During the winter their dependence upon natural gas is virtually total since most lack alternative sources of heating. Thus, their need for natural gas dramatically increases as temperatures plummet.

States Especially Vulnerable To Swings in Natural Gas Prices



Planning a family budget under such variability becomes nearly impossible at the lower income levels. The Low Income Home Energy Assistance Program (LIHEAP) and similar governmental agencies are chronically overwhelmed with requests for support for utility bills when home heating costs surge. Millions of families cannot sustain the escalating electric rates and home heating costs caused by high and volatile natural gas prices:

- 21% of LIHEAP recipients are families with children under five;
- 37% are elderly; and
- 50 % are disabled. [4]