

Seismic Shift in Energy Production Puts Coal-fired Plants At Risk

By: Vikas Dua

There has been an epic shift in energy production, a shift so drastic that it could knock coal from its perch as the king of electric energy while catalyzing a move towards energy independence in one fell swoop. Natural gas is making a move, a strong move toward becoming the electric energy source of choice. This move is being

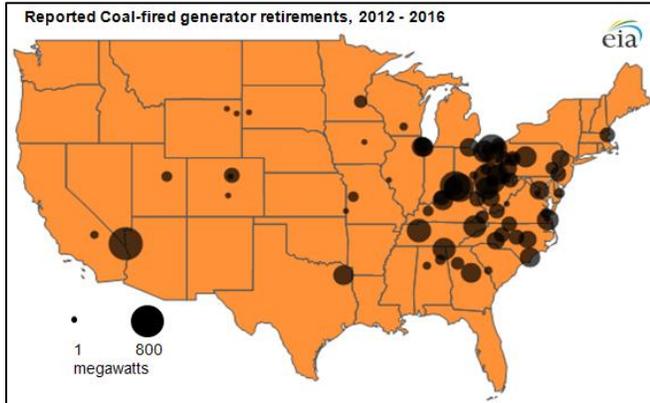


Figure 1 - Expected Coal Plant Retirements

catalyzed by a confluence of factors, including include a rash of recent domestic natural gas discoveries, slowed domestic energy demand growth and increased EPA regulations. The result is an increased number of mothballed and shuttered coal plants dotting the Central-Eastern US, including the Mid-Atlantic and Ohio-river valley areas. Energy from natural gas plants is replacing coal-fired facilities, as many of these plants are aged and have long out-lived their expected usage.

According to the Energy Information Administration (EIA), the amount of coal-fired energy generation

capacity expected to be retired between 2012 and 2016 (see Figure 1) is approximately 27 Gigawatts (GW) and is four times the amount of capacity that has been retired over the previous five-year period (6.5 GW)¹. In addition, 2012 was a record year for retirements with approximately 7.9 GW of coal-fired capacity being retired, versus 2.6 GW in 2011 and an average of 1.0 GW each year between 2006 and 2010. This is likely the largest year on record for coal retirements; however, if expectations hold 2015 may actually surpass 2012 with almost 10 GW of coal-fired capacity expected to be retired². Of the planned and announced plant closures, most are located in the Mid-Atlantic and Ohio-basin regions, which reflects where US coal reserves were believed to be primarily located in the 1950's when these plants were constructed. Two recent closures in Chicago, The Fisk and Crawford power plants, have been targets of environmental groups for years and represent only a small fraction of the 140+ plants that have either retired or announced retirement since January 1, 2010³.

So what do these trends mean for the restructuring industry, and what areas of the energy economy are most at risk? Approximately 55% of coal plants in 2011 were owned by utilities that often maintain a portfolio of energy generating assets and have been preparing to shift their energy generation to other assets for quite some time⁴. However, smaller companies who own, lease and operate coal generating units like Edison Mission Energy (the parent company of Midwest Generation), who filed for bankruptcy in December, are in danger unless they

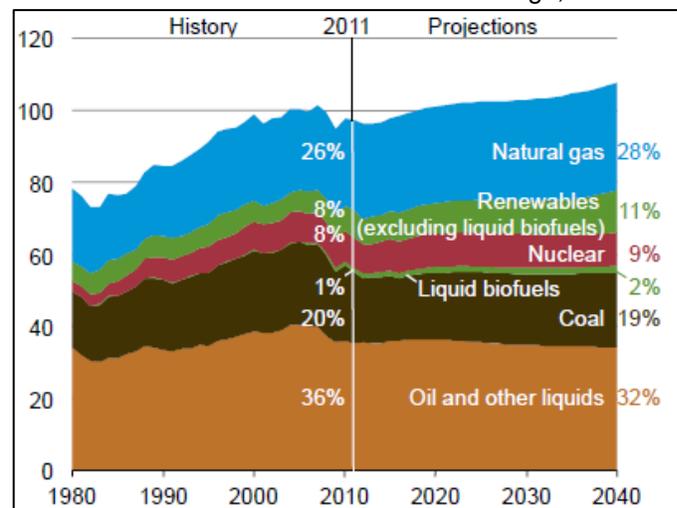


Figure 2 - Historical and Projected US Energy Sources

¹ <http://www.eia.gov/todayinenergy/detail.cfm?id=7290#>

² <http://www.eia.gov/forecasts/steo/archives/mar13.pdf>

³ <http://content.sierraclub.org/press-releases/2013/02/major-victory-clean-air-and-climate-aep-agrees-retire-3-coal-plants>

⁴ http://www.eia.gov/electricity/annual/html/epa_04_01.html

make drastic changes quickly. Other industries at risk are those supplying coal powered plants, such as mining, rail and heavy machinery. In 2010, the U.S. Energy Information Administration (EIA) projected that coal would drop to 45% (from 49% in 2008) of America’s electrical generation by 2035. Actual generation dropped to that level in 2011. Earlier this year, the EIA adjusted its long-term numbers again projecting that generation will fall, this time to 39%, by 2035⁵. In fact, projections for coal consumption are basically flat between now and 2035, increasing at only 0.1% per year, remaining below 2010 levels until after 2031. This is in stark contrast to electricity demand, which is expected to grow 22% between 2010 and 2035⁶.

With coal usage in the US expected to flat line, these effects can be seen in large mining companies such as Peabody Energy, Patriot Coal and Arch Coal.

Arch Coal has seen their stock fall over 90% since its high in 2008. Peabody has fallen over 75%, weathering the shrinking domestic coal market by responding through a renewed focus on overseas markets such as China. Patriot Coal, who filed for bankruptcy in July, is now reorganizing with an understanding that the market for coal has shrunk and they are going to need to downsize in order to succeed. Management is restructuring Patriot’s debt, cancelling unprofitable and unnecessary contracts and improving Patriot’s cost structure⁷.

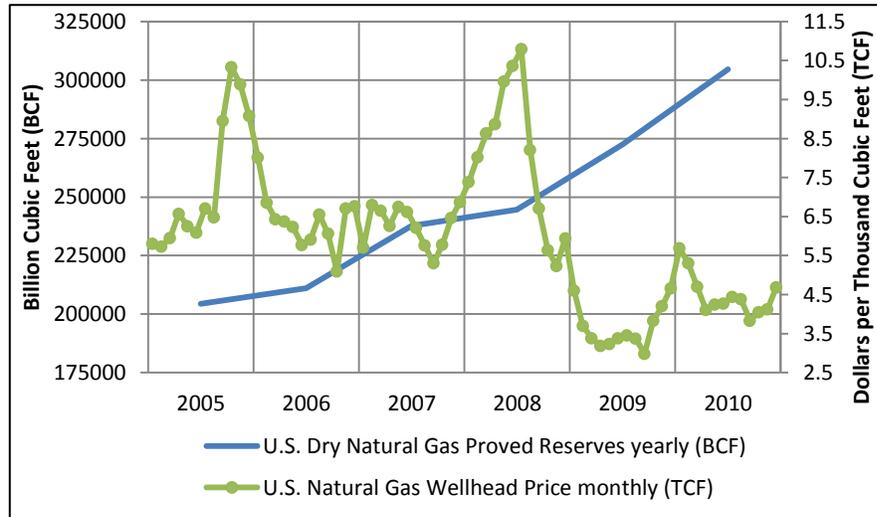


Figure 3 - US Natural Gas Proven Reserves

Smaller mines, coal plant suppliers, and railroads, where approximately 45% of US railroad carload traffic is coal⁸, will also be affected by these trends and should be closely observed by lenders and those who provide financing to these susceptible industries.

There are a number of factors driving this chain of events, the primary reason being an eruption of recent natural gas discoveries. Proven reserves of natural gas in the US has exploded in recent

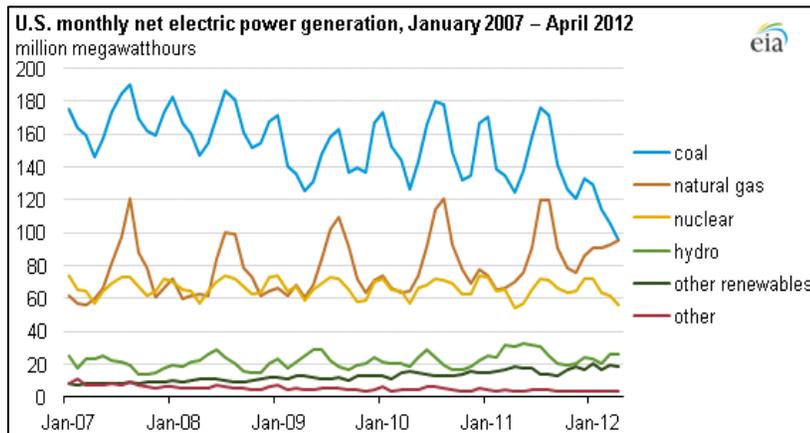


Figure 3 - US Power Generation by Type

years, increasing over 50% from just over 200 billion cubic feet (bcf) in 2005 to over 300 bcf in 2010⁹. With increased supply, price has consequently fallen almost 80% since 2008 and currently hovers around

⁵ <http://thinkprogress.org/climate/2012/01/25/409941/us-government-downgrades-projections-for-coal-again/>
⁶ http://www.eia.gov/forecasts/aeo/MT_electric.cfm
⁷ <http://www.patriotcoal.com/index.php?view=transformation&p=79>
⁸ <https://www.aar.org/newsandevents/Documents/RTI/2012-12-rti.pdf>
⁹ http://www.eia.gov/dnav/ng/hist/rngr11nus_1a.htm

\$3.00/mmbtu¹⁰. This drop in price and long run consistency of supply has resulted in utilities opting to invest in flexible gas turbine engines to meet their peak demand and also to pick up portions of their base load energy requirements that were once met by coal. In fact, **April 2012 marked the first time energy generation from natural gas equaled that of coal** - an historic first since the EIA began collecting data on energy generation. This trend will likely continue given the flexibility of gas turbines and cleaner emissions that result from burning gas. With these trends, we can expect to see an increasing number of coal plants shutting their doors for good.

Without a serious change in the economics of coal versus natural gas, you can expect to see these trends to continue to accelerate. Plus, given our current political climate and the amount of recent investment into natural gas, it's difficult to imagine anything changing in the near term that would seriously alter this trajectory. Paying close attention to the risks posed by the key players in the coal industry all the way down the value chain could prove to be a prudent move.

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Golden Oaks

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¹⁰ <http://www.eia.gov/dnav/ng/hist/n9190us3M.htm>