



# AppalachianVoices

Protecting the Central and Southern Appalachian Mountain Region

## Virginia Coal Market Update -- June 1, 2012

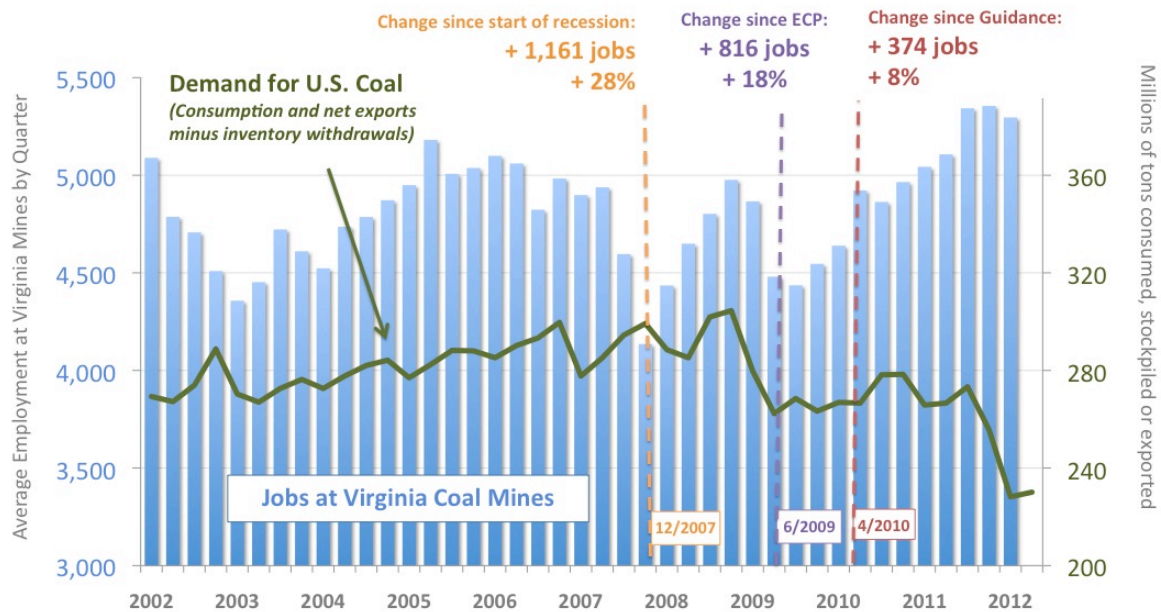
Consumption of coal by U.S. electric generators has declined sharply in the first few months of 2012., leading major Appalachian coal producers to idle mines and lay off workers<sup>1</sup>. Some coal industry supporters have been quick to attribute these layoffs to actions the EPA has recently taken to reduce emissions of mercury and greenhouse gases from coal-fired power plants and to reduce the impacts of surface coal mining on headwater streams in Appalachia, claiming that these actions amount to a “war on coal” by the Obama Administration that is threatening jobs and the economy in Appalachia.

In an analysis of recently released data from the Energy Information Administration and the Mine Safety and Health Administration, Appalachian Voices finds no evidence that EPA actions are leading to job losses in Virginia’s coal industry, where payrolls have grown by 18% since the agency first stepped up oversight of Clean Water Act permitting in June, 2009. Looking to the longer term, low natural gas prices and increasing coal production costs pose some risk to coal mining jobs, however, Virginia’s mining industry is less dependent on thermal coal sales to electric utilities than any other state. While depleted coal reserves and the inevitable long-term shift away from coal for electricity generation to cleaner (and cheaper) sources of energy leave little potential for job growth in Virginia’s coal industry, its diverse portfolio of buyers and emphasis on production of high-quality metallurgical coal positions it well to weather downturns in thermal coal demand.

### Is employment in Virginia’s coal mining industry declining as a result of recent EPA actions?

No. According to data provided by MSHA, the number of coal mining jobs in Virginia in 2011 reached its highest level since 1998 and was up 18% since the Obama Administration announced more stringent “Enhanced Coordination Procedures” for permitting of mountaintop removal mines in June, 2009. This increase is all the more impressive because it occurred in spite of a dramatic decline in demand for coal over the same period (see chart below).

### Coal mine employment in Virginia has increased since EPA began enhanced scrutiny of mountaintop removal permits, despite declining demand for coal



Sources: Employment data from MSHA Quarterly "Part 50: Address/Employment Information" data files; Demand data from EIA Short Term Energy Outlook (accessed on 5/17/2012); Analysis by Appalachian Voices - May, 2012

Moreover, unlike other Appalachian states, a survey of recent news stories and coal company announcements turned up no announcements of mass layoffs or idling of coal mines in Virginia in response to the recent drop in demand.

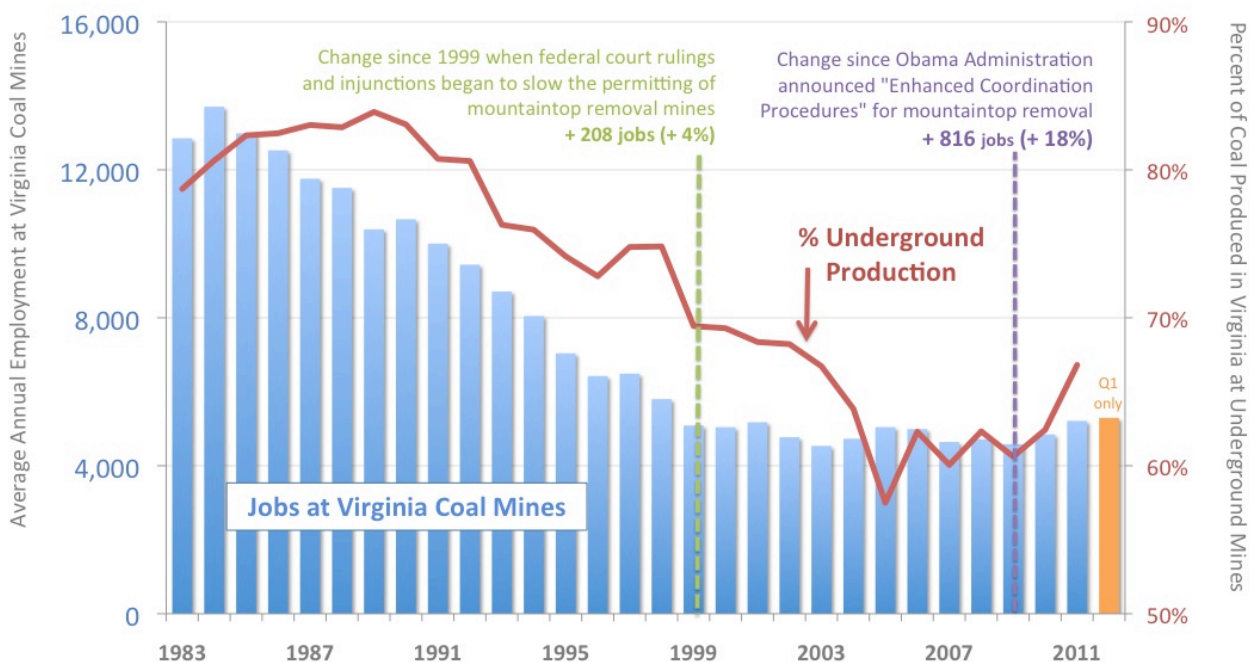
Some have blamed the EPA for the decline in coal demand itself, suggesting coal use (and thus mining jobs) would be higher were it not for the agency's stringent new rules on mercury and greenhouse gas emissions from power plants. That contention is untenable as an explanation for current declines in coal demand, however, because the mercury rule won't go into effect until 2015 and the greenhouse gas rule only impacts proposals for new power plants that are not already operating or permitted for construction. While utilities are expected to retire a number of older coal-fired generators by 2015 or 2016, rather than retrofit them to comply with new rules on power plant mercury emissions, the amount of coal-fired generating capacity that has already been retired as a result of new EPA rules amounts to a rounding error in this analysis.

According to the Energy Information Administration (EIA), the sharp decline in coal consumption is the result of extraordinarily low natural gas prices combined with a mild winter across much of the continent<sup>2</sup>. The Federal Energy Regulatory Commission states in its recent "Winter Market Assessment" that natural gas production is high – and likely to remain high -- for two reasons: the rapid increase in unconventional gas drilling in the Marcellus Shale and the enormous increase in domestic oil drilling resulting from high oil prices. According to FERC<sup>3</sup>:

*"Natural gas production continued to grow in 2011, setting records throughout the year ... Shale gas now accounts for more than 25% of U.S. production, up from 5% in 2007. There has also been an increase in production of associated gas from oil shale wells, as high oil prices led to the acceleration in drilling for shale oil... In some regions, the rush to extract oil from oil rich shale formations has also resulted in high levels of flaring, or burning of natural gas."*

So how has employment at Virginia mines remained stable – indeed increased -- in the face of such a dramatic drop in coal demand? A look at longer-term trends in Virginia's coal mining industry provides part of the answer. The two thirds drop in Virginia's coal mine employment between 1983 and 2003 was driven by productivity gains at both surface and underground mines, but also by a 20% decline in production at underground mines, most of which was replaced by surface mines that employ fewer miners to produce the same amount of coal. Since coal mine employment hit bottom in 2003, the proportion of coal mined underground has stopped falling and has actually begun to increase – along with coal company payrolls. To the extent that EPA's actions have caused permitting delays for mountaintop removal mine permits in Virginia since 2009, underground mines, which were operating at a remarkable 90% capacity utilization rate in 2010<sup>4</sup> (up from 75% in 2009), have been able to take up market share.

### Historic Job Losses at Virginia Coal Mines Were Associated with a Shift to Surface Mining, Which Employs Fewer Miners, While Recent Gains Correlate With a Shift Back To Deep Mining



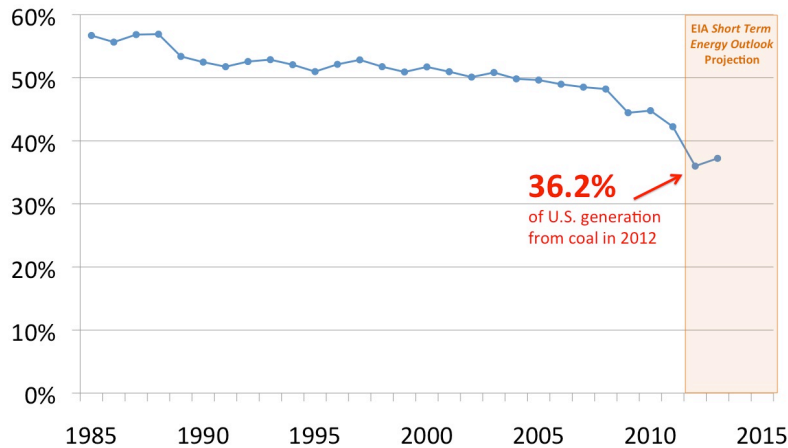
Sources: MSHA Quarterly "Part 50: Address/Employment" data files; Analysis by Appalachian Voices - May, 2012

## Do current trends in coal markets indicate future risks to coal mining jobs in Virginia?

While the recent high level of displacement of coal demand by natural gas could be a temporary phenomenon, the gradual erosion of coal's share of the domestic electricity market is anything but temporary. By 2011, the proportion of electricity generated from coal had already fallen by 15% from its high of nearly 60% in the late 1980s (see chart below).

### Coal's Declining Share of US Electricity Generation

further declines projected by the Energy Information Administration



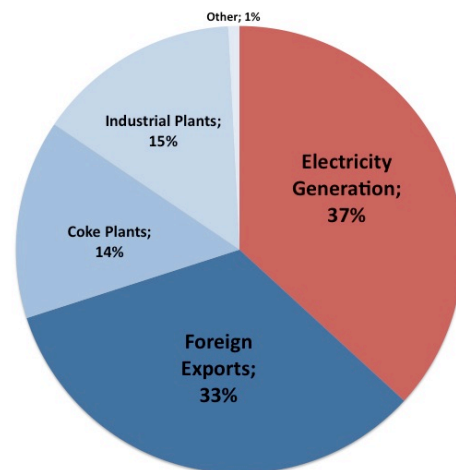
Sources: EIA Monthly Energy Review, March 2012; EIA Short-Term Energy Outlook, 8 May, 2012. Analysis by Appalachian Voices, May 2012.

Moreover, this gradual erosion of market share was not the result of dramatic policy changes, but rather the result of competition from other energy sources. While EIA projects that coal will recover a few percentage points in 2013 from the record low of 36% it will set this year, there appears to be little chance that the trend can be reversed, even if all of EPA's updates to air pollutant emissions limits and greenhouse gas emissions from new electric generators were overturned. As a result, there does not appear to be much upside potential for job growth in the coal industry in the years ahead unless major new export markets and the rail and port infrastructure they require are developed. On the other hand, if demand for metallurgical coal remains high and the U.S. coal industry continues its recent trend back toward a greater reliance on deep mining, then dramatic job losses could be avoided even in the face of declining demand for thermal coal.

With respect to Virginia's coal industry in particular, there is no state that is better positioned to weather an extended downturn in demand for thermal coal for electricity generation. Fully 1/3 of Virginia coal was exported in 2010, while another 14% was sold to coke plants. Given that almost 90% of coal exports from East Coast ports were metallurgical coal in 2010<sup>5</sup>, it appears that almost half of Virginia's coal production is now metallurgical coal (see chart at right).

Since prospects for dramatically growing employment in Virginia's mining industry appear unrealistic, job growth in Southwest Virginia will require developing new industries in the region. Fortunately, there also appears to be little threat that actions by the EPA or other government agencies will lead to job losses, providing some breathing room for policy-makers to take a longer view toward economic growth and diversification in the region.

### Less than Half of Virginia's 2010 Coal Production was Sold to Electric Generating Plants in the U.S. While a Third was Shipped Overseas



Source: EIA Annual Coal Distribution Report for 2010, Released 30 Nov, 2011. Analysis by Appalachian Voices - May, 2012.

#### Citations:

1. 'Banning cars that fly': Coal faces the market; May 21, 2012 by Ken Ward Jr. (URL: <http://blogs.wvgazette.com/coalattoo/>)
2. EIA Short Term Energy Outlook, published May 8, 2012 (URL: <http://www.eia.gov/forecasts/steo/>)
3. "Winter 2011-12 Energy Market Assessment: Item No A-3," a presentation published by the Federal Energy Regulatory Commission on 20 October, 2011.
4. EIA Annual Coal Report for 2010, Released September, 2011 (DOE/EIA-0584)
5. EIA Quarterly Coal Report, October-December, 2011; released 18 April, 2012.