

Take a Deep Breath Virginia



The cost of constructing a new coal-fired power plant has increased by 50% in the last year alone.

Appalachian coal production is declining, coal prices are rising, and we're importing coal from Indonesia.

Now Dominion is promoting a plan to re-regulate electricity markets that would put all the risks onto Virginia's rate payers.

Are We Heading Into a “Perfect Storm?”

A Report to the General Assembly of the Commonwealth of Virginia

Executive Summary

Virginia is rightly taking a hard look at how to meet our escalating needs for energy - but are we failing to see a “perfect storm” looming on the horizon? Because almost no new coal-fired power plants were built over the last 25 years, and coal supply exceeded demand during this period, there is a widespread perception that coal is the least expensive and most reliable energy choice. While it’s true that America possesses a lot of coal (26% of the world’s known coal reserves), the perception that America is the “Saudi Arabia of Coal” is the result of a highly successful public relations campaign rather than a close examination of the facts. According to the Department of Energy, the U.S. will become a net importer of coal in the next 5-10 years and will continue to import an increasing proportion of coal into the future.

How can this be? The short answer is that not all parts of the country have equal access to coal reserves, which are mostly located in the western U.S. It is almost universally recognized among geologists and coal industry analysts that eastern coal production capacity is rapidly declining, that nationwide transportation infrastructure is at or near capacity, and that these factors are already causing an increase in the price of coal - a trend that is projected to continue for the foreseeable future. These supply issues, exacerbated by increasing competition from 150 new coal-fired power plants proposed across the country, will put states like Virginia that rely on rapidly dwindling Appalachian coal reserves at risk of severe cost increases. Already, demand for labor and materials resulting from the construction of new power plants has doubled the cost of construction over the last two years.

These factors are making imports increasingly attractive in eastern states and some companies, most notably Dominion, are already importing coal from Indonesia and other coal exporting countries. Unfortunately, imports are not a long-term solution as demand for coal from international sources is projected to increase faster than that for domestic sources.

The implications of limited coal transportation and supply for consumers in the eastern US are dramatic. Energy markets are notoriously volatile and an over-reliance on one particular fuel source for electricity can have major impacts on electricity rates as well as energy security and reliability. Virginia, which currently relies on coal for 45% of its electricity production, bears some of the greatest risk as this “perfect storm” of upward price pressures approaches - a familiar situation after our experience with natural gas just a decade ago.

In the context of this “perfect storm,” Virginia is now considering a plan to re-regulate utilities in the state. While Dominion’s plan has rightly been criticized because it is heavily weighted toward Dominion’s interests rather than the interests of ratepayers, the very motivation behind the bill - making it easier to build new coal-fired power plants - creates far more risk to rate-payers than simply giving Dominion greater access to Virginians’ pocketbooks. As outlined in this report, building new coal-fired power plants is an exceedingly risky gamble and the real costs and risks of such a move have not been considered, nor has Dominion been forthright with the public about such risks. This lack of forthrightness is not unexpected, as Dominion’s bill puts the interests of rate-payers clearly at odds with the interests of Dominion’s share-holders. Assuring Dominion of cost recovery for new plants creates an incentive for them to build additional generating capacity whether or not demands could be met through less expensive alternatives, as the costs of fuel, construction and operation of these plants are passed directly to ratepayers and Dominion is assured of a healthy profit on the construction and operation costs. But passing the proposed bill would give ratepayers no oversight and every incentive to make risky new investments in coal-based infrastructure. Virginia’s citizens deserve legislators to make better decisions on their behalf.

Key Recommendations

1. Oppose re-regulation of Virginia’s electricity market as well as initiatives to restructure utilities’ cost-recovery of new investments in generating capacity until legislators and the public have had ample opportunity to investigate the full repercussions of such a move. Any legislation that would create greater incentives for Dominion to gamble on risky and costly new infrastructure while Virginia’s electricity consumers shoulder the risk should not be enacted lightly or hastily.

2. Commission an independent study regarding: 1.) the increasing construction costs and projected fuel costs given declining coal production capacity in Virginia and across Appalachia; 2.) the transportation capacity and projected costs of servicing existing and expanded demand for coal from Virginia’s utilities; 3.) a realistic cost comparison of alternative ways to meet Virginia’s electricity demand given revised cost estimates for coal-fired generation; and 4.) the risks to Virginia’s ratepayers and overall economy from re-regulation of Virginia’s utilities and other initiatives promoted by Dominion.

Virginia's Reliance on Imported Coal

Currently, about 45% of Virginia's electricity is produced by coal. According to the Energy Information Administration, in 2003, 96% of domestic coal consumed in Virginia was produced in the Central Appalachian Basin. About 40%, or 9.7 of 26 million tons, was coal produced in Virginia, with the balance coming from West Virginia and eastern Kentucky.¹

Unfortunately for Virginians, the coal region from where our utilities procure coal, collectively known as the Central Appalachian Coal Basin, is suffering the most rapid production declines of all U.S. coal basins (see next section). While the



Map of current and historic coal producing regions in Virginia. Almost all remaining reserves are located in 5 counties in southwest Virginia - the region marked in red. Source: Westman and others, 2000².

coal production projections for the Central Appalachian Basin are discouraging, the projections for Virginia's portion of those coal beds are far worse. Despite optimistic projections from the Virginia Mining Association and other mine industry advocates, Virginia's coal production has been in decline since its peak in 1990, and is facing an accelerating pace of decline over the next few decades before our recoverable reserves are gone completely (see graph below).

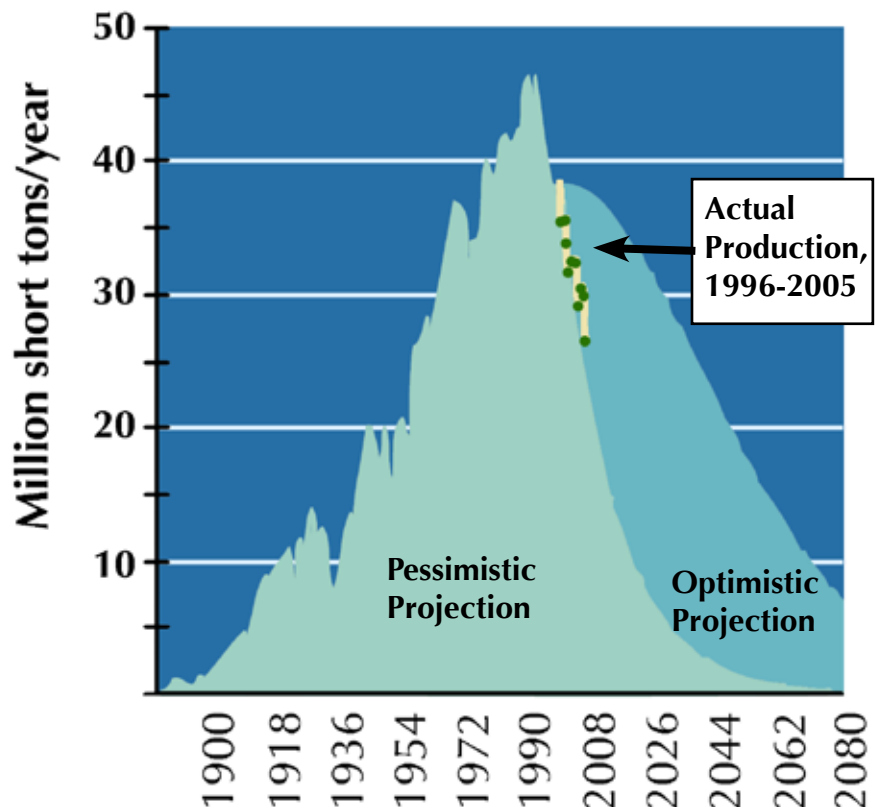
The most extensive study of coal reserves in Virginia's southwest coalfields to date was conducted by researchers at Virginia Tech in 2000. According to the study:

"Using current industry definitions, 1.6 billion tons of economically mineable reserve were estimated... the majority of coal reserves are in deeper seams which require expensive development to access. These development costs significantly increase the risk involved with these seams, making them less attractive in the currently volatile coal market."

*By assuming that coal production over time follows a bell-shaped curve, future production can be estimated....Overall, this analysis indicates that annual Virginia coal production is likely to decline over the next decade, perhaps by 5 to 10 percent."*²

The figure to the right shows two possible production scenarios provided in the Virginia Tech study based on production trends through 1996 and extrapolation using the "bell curve" method. While the researchers thought the "optimistic projection" was more likely, trends over the past decade clearly favor the more pessimistic projection.

Historic and Projected Coal Production in Virginia



Sources: Westman and others, 2000. "Powell River Project: Estimation of Southwest Virginia Coal Reserves," Publication Number 460-139. and "Coal Production in the United States" Energy Information Administration, October 2006².

Increasing Prices of Appalachian Coal

“Since 2003, mining costs in Central Appalachia have risen roughly 45% from the upper \$20.00s per ton to the lower \$40.00s per ton, establishing a new base platform for coal pricing.”

- Hill and Associates, Central Appalachian Coal Supply Study Summary, 2006³

“With declining productivity and mining difficulties in Central Appalachia and rising demand for coal in the Southeast, imports become increasingly competitive with domestic U.S. coal production.”

- 4

“...the lack of capacity growth in some key regions despite sharp upward price shocks indicates that the cost of new supply may be much higher than even current prices—and certainly much higher than the embedded costs that domestic power generators are accustomed to paying for coal supplies.”

*From: “A Wakeup Call for Coal” - Public Utilities Fortnightly, December, 2006
by Gary L. Hunt and Hans Daniels of Global Energy Advisors⁵*

A variety of factors are leading to upward price pressure on coal and are projected to lead to dramatically increasing prices in the near future - particularly in Atlantic states like Virginia that lack the advantages of states containing or neighboring coal basins with sufficient coal reserves to maintain and expand production for decades into the future. In brief, these factors are:

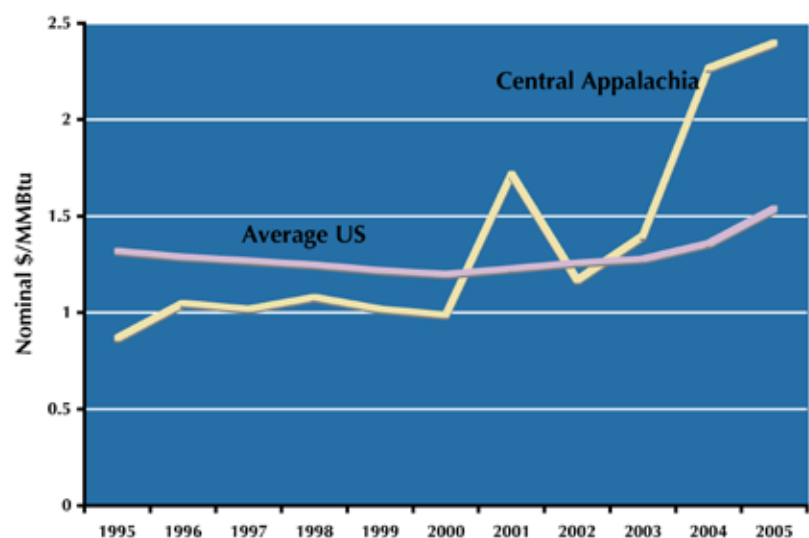
1. Declining coal production and recoverable reserves in nearby coal-bearing regions, particularly the Central and Northern Appalachian Basins^{3,5,6,7,8,9}, which are the source of Virginia’s entire coal supply other than international imports¹.

2. Transportation constraints that are preventing supplies of coal from the Powder River Basin (the only major coal basin in the nation that has been increasing production in recent years¹¹) from meeting current customer demand. Coal consumers depending on these supplies, particularly those in the East, are facing sharply increasing transportation costs that are projected to increase even more sharply in the future^{10,11,12}.

3. Demand and competition from massive new investments in domestic and international coal-fired electricity generation. The costs and cost variability for coal feedstock once this new generation of power plants come online are projected to be quite different than what electricity generators have grown accustomed to over the last 20 years when almost no new coal-fired power plants were built and there was an excess capacity of coal production and transportation capacity^{13,14} (see figure at bottom right).

Each of these factors are considered in more detail in subsequent sections of this report.

Spot Prices of Central Appalachian Coal vs. the US Average



Source: “Trends in U.S. Domestic Coal Markets: Are Higher Prices and Higher Price Volatility Here to Stay?” Pincock Perspectives, #58, September, 2004.

Declining Coal Reserves and Production

“Sufficient high-quality, thick, bituminous resources remain in [major Appalachian Basin] coal beds and coal zones to last for the next one to two decades at current production. After these beds are mined, given current economic and environmental restrictions, Appalachian Basin coal production is expected to decline.”

- U.S. Geological Survey Professional Paper 1625–C, 2001⁶

“[2002-2005] is the first time the Appalachian Region has experienced four consecutive years of coal production of less than 400 million short tons since the 1960s.”

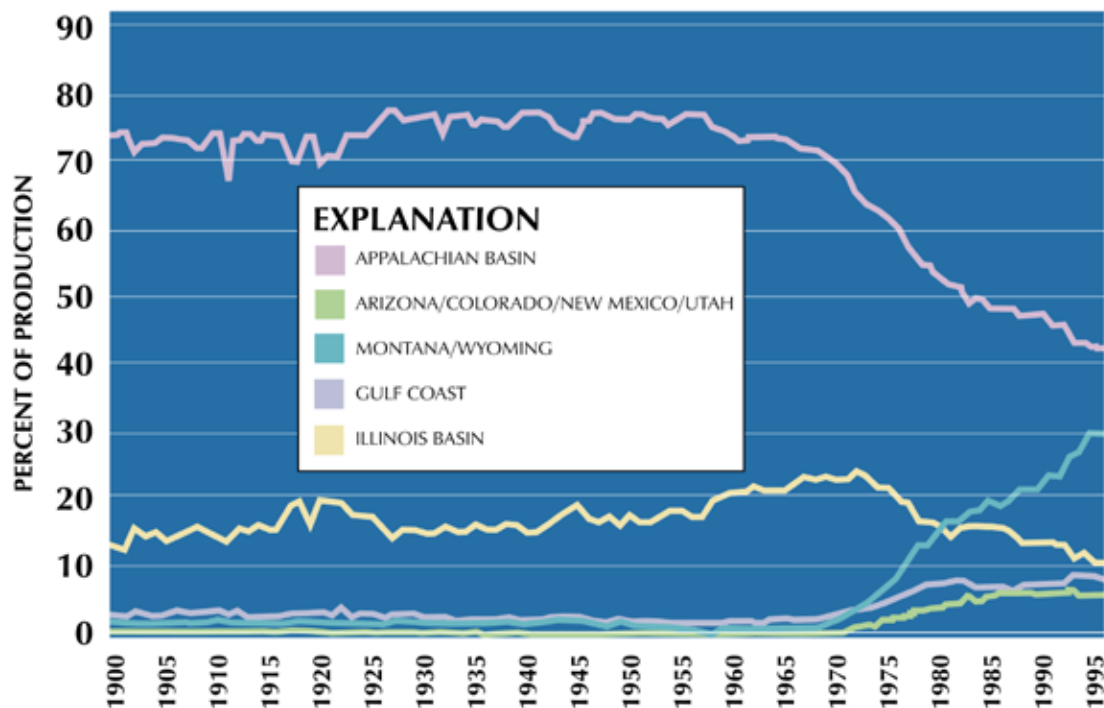
- DOE/EIA-0584 (2005) Annual Coal Report 2005¹⁶

“Central Appalachia proved-in-place production capacity declined by 8 million tons per year in 2005, despite record level price signals since late 2003. ”

*From: “A Wakeup Call for Coal” - Public Utilities Fortnightly, December, 2006
by Gary L. Hunt and Hans Daniels of Global Energy Advisors⁵*

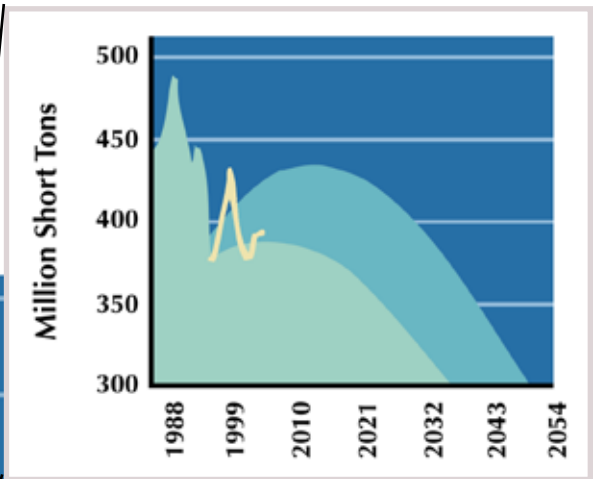
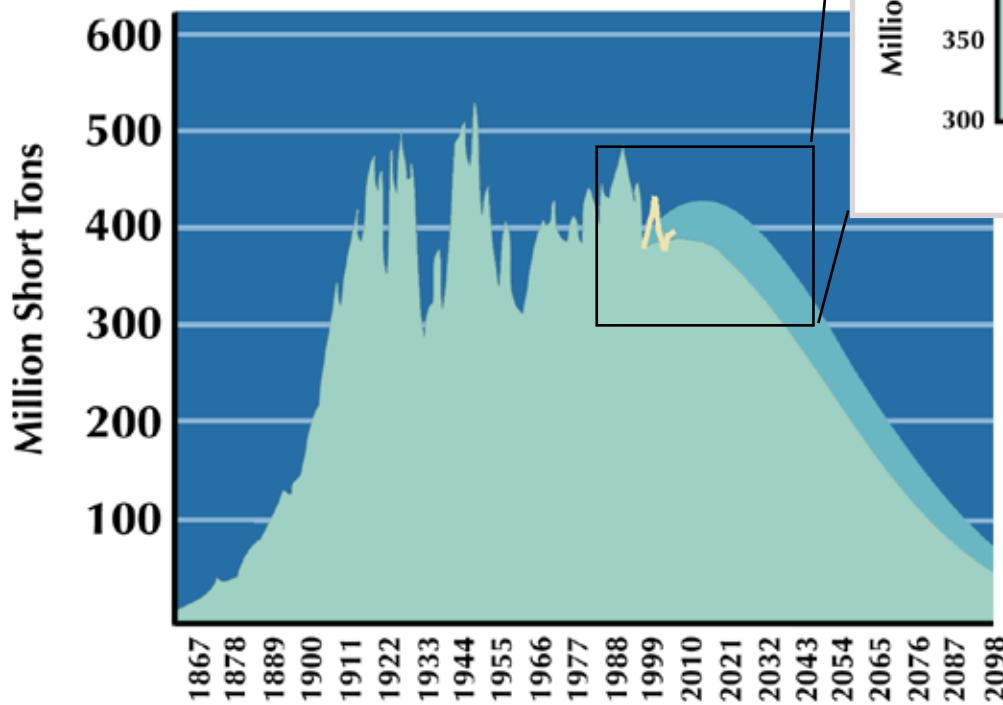
The USGS, the Energy Information Administration, and many state geologic surveys all agree that both Northern and Central Appalachian Basin coal reserves have peaked, that the bulk of the remaining coal is in thinner and in less accessible seams and thus the supply of economically, technologically and legally recoverable coal (see next section) will last for only one to two decades more at current production rates if current economic and social trends continue. Recent trends indicate that it may already have begun to decline even more rapidly than projected by the USGS. The period between 2002 and 2005 marked the first 4-year period since the 1960s that Appalachian coal production has been below 400 million short tons¹⁶.

GRAPH SHOWING PERCENT OF U.S COAL PRODUCTION BY REGION



The Appalachian basin traditionally led the country in coal production, and, until 1970, produced 70% or more of all coal produced in the nation. Between 1970 and 1996, that percentage declined to about 43%, and has since declined to about 35%. Source: U.S. Geological Survey Professional Paper 1625–C, 2001⁶.

Actual and Projected Coal Production in the Central Appalachian Basin



In their assessment of Appalachian coal reserves, the USGS projected coal reserves would begin to decline between 2010 and 2020, based on a median projection of available coal reserves. However, between 2002 and 2005, Appalachian coal production has not exceeded 400 million short tons, suggesting the more pessimistic model is more accurate.

Source: Milici, R.C., 1999, Bituminous coal production in the Appalachian Basin—past, present, and future: U.S. Geological Survey Miscellaneous Field Studies Map MF-2330⁷

It's important to note that while the actual amount of coal underlying the Appalachians is enormous, only a fraction of this coal can be profitably and legally extracted. Physical factors such as the thickness of coal seams and the thickness of bedrock overlying those seams are major determinants of the feasibility and profitability of mining them. There are also significant legal and social factors that can influence where mining can occur such as land ownership, proximity of towns and national parks.

In addition, there are a variety of short-term factors that can influence the profitability and feasibility of mining. According to the EIA, major factors that affected coal production in 2005 were “weather, environmental, legal challenges, and global economics,” while, “the overriding issue for the U.S. coal industry in 2005 was transportation of coal from the mines to the consumers.” Additional factors cited by the EIA in their 2005 Coal Report included: “The combination of reserve degradation in the region, along with the legacy of past lawsuits that had either temporarily halted or extended the review time for the issuance of needed permits for new mines or to expand current operations,” as well as “increased operating costs (fuel, steel, explosives, training of new miners, etc.), along with some geological issues (roof falls, sandstone intrusions, and high methane gas levels).” After coal supplies declined severely in 2003 and early 2004, the EIA cited these additional factors as causes:

- “Readily minable reserves have diminished: although the single-year productive capacity of U.S. coal mines has increased, the duration of coal production from active mines has declined and become concentrated in fewer companies.”
- “The decline in overall operating reserves means that an increasing number of individual mines are approaching the limits of useful mine life; Eastern mines increasingly report “geologic problems...”
- “[2005] saw major delays in processing of new Federal fill permits in watersheds that are essential for large surface mines and mountaintop removal mines and disruptions to some established mines due to individual lawsuits, permit violations, and adverse mining conditions.”

Increasingly Controversial Mining Techniques

“The USGS and state geological surveys of Pennsylvania, West Virginia, Ohio, Kentucky and Virginia have...concluded that only a fraction of the original coal resource can be extracted and marketed economically under current conditions given social and technological restrictions.”

“...[Central Appalachian Basin coal is mined] increasingly by mountaintop removal methods. Mountaintop removal mining is a controversial surface mining technique where tops of mountains are removed to expose multiple coals, depositing the overburden into the heads of adjacent valleys.”

- U.S. Geological Survey Professional Paper 1625-C, 2001

An increasing portion of Virginia's - and the entire Central Appalachian Basin's - coal comes from surface mines requiring controversial mountaintop removal and valley fill methods. These techniques are increasingly necessary due to the depth, thinness and inaccessibility of remaining seams, since the thickest and most accessible seams have already been mined^{6,16}.

Already, these mines operate at the very margins of profitability and remain profitable largely as a result of generous federal and state subsidies such as “synthetic fuel” tax credits, thin seam tax credits, and Virginia's Employment Enhancement Tax Credit^{17,18,19}. Even the pessimistic projections of recoverable reserves cited in previous sections of this report assume that controversial mining practices will remain legal and that billions of dollars in subsidies will be renewed for the next few decades. This is a big assumption that does not appear to be justified given recent political trends and the growing opposition to destructive mining techniques occurring at the headwaters of much of the drinking water supply of eastern U.S. cities.

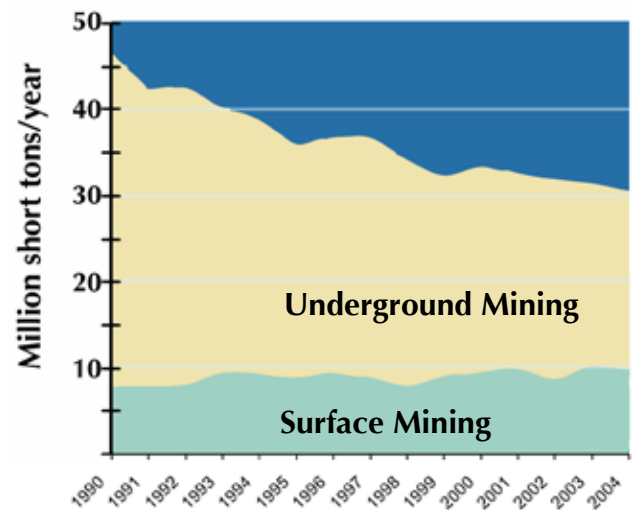
Moreover, expanding mountaintop removal mines will require them to move even closer to large communities and protected areas, causing increasingly negative environmental and social impacts.

Finally, the necessity for coal mine operators to increase production through mountaintop removal mining imposes additional costs irrespective of the damages caused by the practice. As the EIA reports:

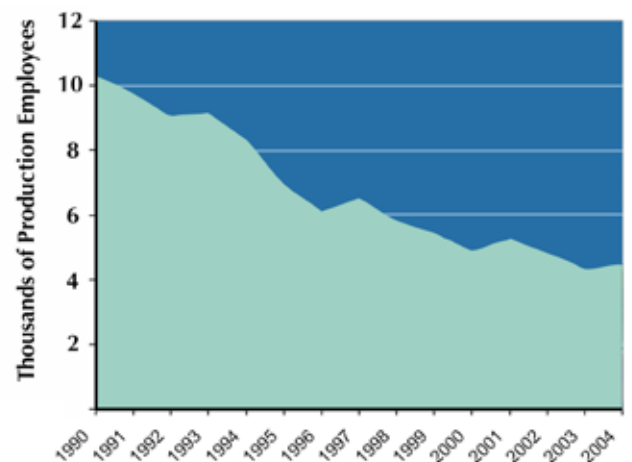
“economically feasible surface mines tend to recover multiple beds of coal, of which only a minor percentage will have the desired Btu/sulfur properties. The other coal must also be salable for at least a modest profit for these mines to stay in business, but currently in the spot market those off-spec coals are being mined at a loss.”¹⁶

Even if mountaintop removal and other controversial mining methods remain legal for the next few decades, the rapidly escalating costs of litigation brought by local citizens regarding pollution of water supplies, damage to homes, and mining-related deaths of miners and local residents, will increase costs for coal companies and ultimately for coal consumers. In addition, the potential for another sludge dam disaster such as the Buffalo Creek flood of 1972, which cost 125 lives and the 2000 Martin County, KY, spill, which the EPA called the “biggest environmental disaster ever east of the Mississippi,” could result in cost increases and sharp restrictions on mining practices at any time.

Types of Mining Used in Virginia's Coalfields

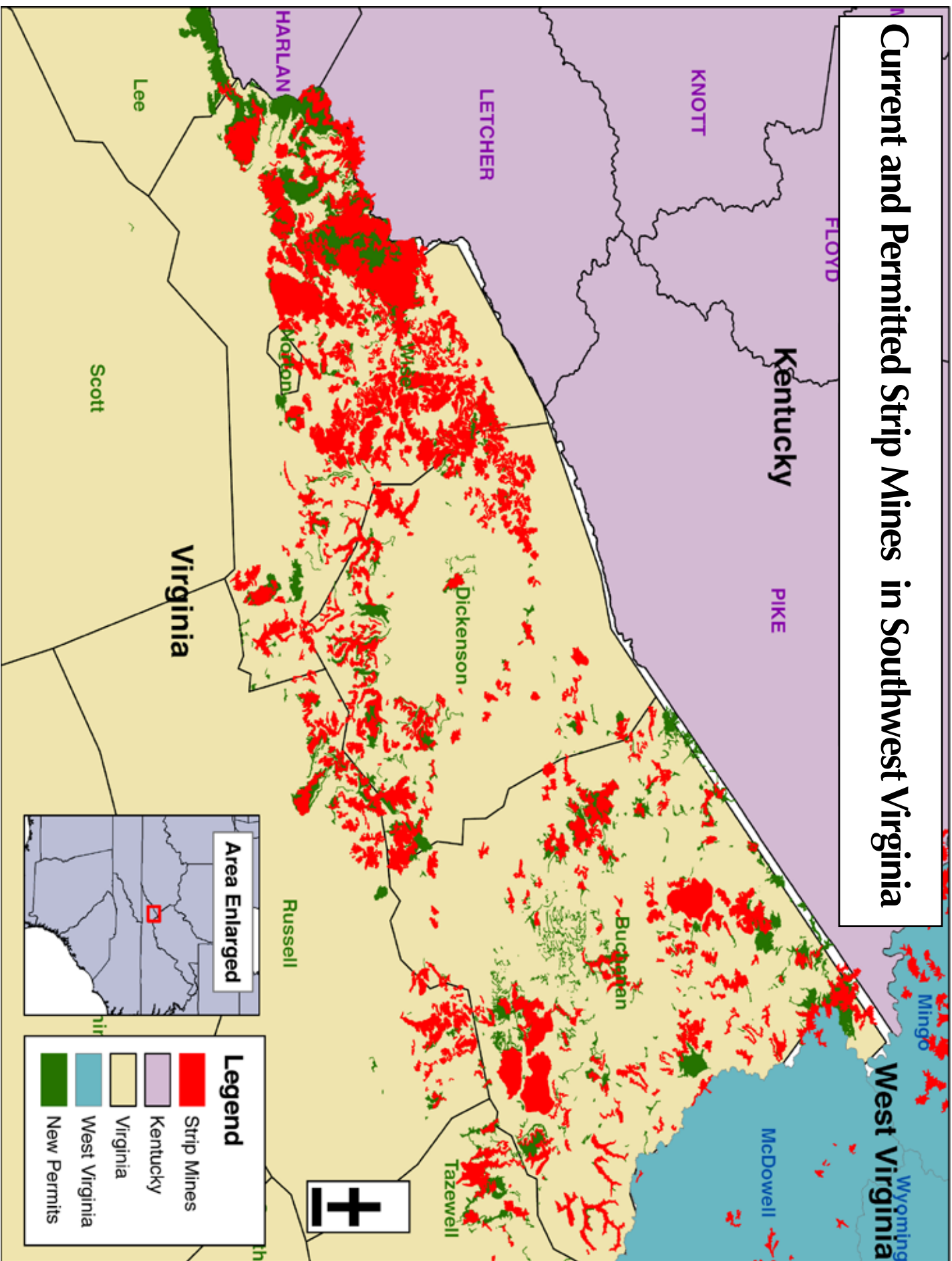


Employment Trends in Virginia's Coalfields



As coal seams have become more difficult to access, Virginia's mines have increasingly been forced to shift from underground to more controversial and destructive surface mining. Associated with this shift has been a significant decline in employment in Virginia's coal counties. Source: Westman and others, 2000³.

Current and Permitted Strip Mines in Southwest Virginia



Alternative Coal Supplies and the “New Normal”

“We are headed for a time of excitement and turmoil in the coal industry unlike anything we have seen before. Renewed interest in coal as a fuel source could increase demand by as much as 4% per year during the next twenty years, but very little attention is focused on the ability of the U.S. coal-chain infrastructure and reserve base to support such an expansion.”

- Gary L. Hunt, President, Global Energy Advisors⁵

“Replacing the Decline in [central Appalachian coal production] as coal demand grows is the central challenge facing U.S. steam coal markets.”

- William P. Wolf, Director, Business and Market Analysis, John T. Boyd Company, 2006⁸

“Railroad customers, including utilities and coal producers... expect ‘strong’ rate increases continuing into 2007, driven by ‘ongoing tight rail capacity and expectations for continued strong rail freight demand.’”

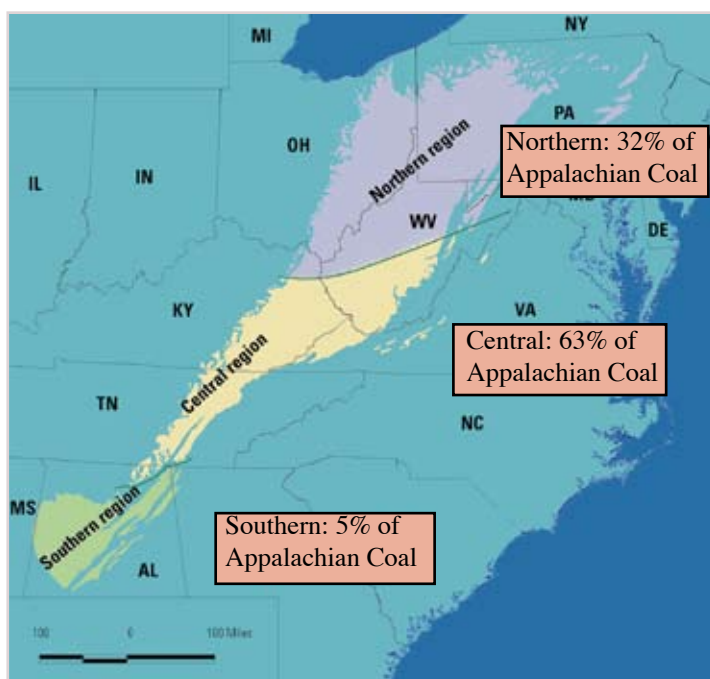
- DOE/EIA “Coal News and Markets” - 20 December, 2006²⁰

Not all coal is created equal and Virginia’s coalfields, as with much of the rest of the Central Appalachian Basin, produced some of the most desirable coal because of its low sulfur content and high heat values. Since 1990, this coal has commanded a premium because Phase II of the Clean Air Act Amendments of 1990 (Public Law 101-549) mandates maximum sulfur emissions of 1.2 lbs of sulfur dioxide per million Btu, which equates to 0.6 lbs of sulfur per million Btu. About 30 percent of Central Appalachian Basin coal and 90 percent of Powder River Basin coal meets compliance standards limiting sulfur dioxide emissions to 0.6 pounds of sulfur per million Btu. However, coal from other significant coal basins in the East, the northern Appalachian and Illinois Basins, does not meet the standards³.

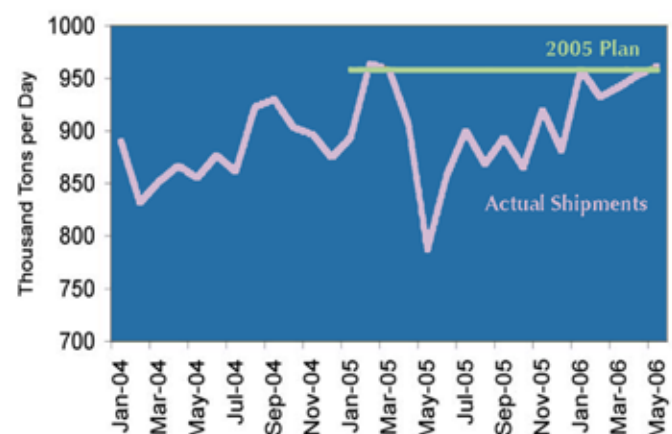
As Central Appalachian coal production declines, Virginia will be put in a particularly difficult position because our largest utilities, Dominion and Appalachian Power, have chosen not to install modern pollution controls on most of their coal-fired power plants. Thus, Virginia will be forced to continue meeting our coal demand with increasingly scarce and costly low sulfur coal.

While an abundance of low sulfur coal is contained in Wyoming’s Powder River Basin, this coal will be mostly unavailable to meet Virginia’s demand because the transportation infrastructure for transporting coal (mostly railroads) is already stretched to the point that, in recent years, the demand for coal at power plants has been limited by transportation^{10,11,12} (see graph below).

Coal Reserves in Appalachian Basin Zones



Joint Line Coal Shipments Jan, 2004 - May, 2006

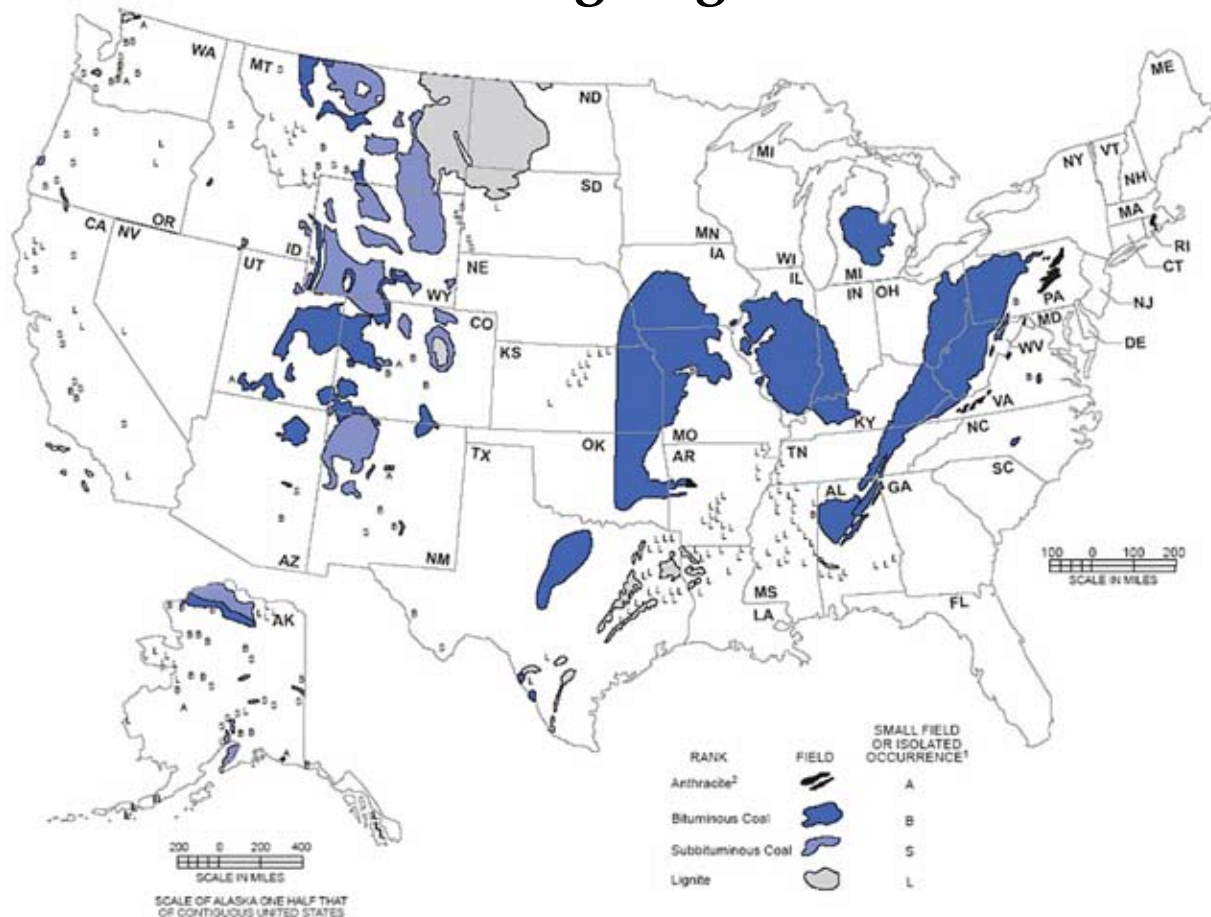


Source: Pace Global and Argus Media Group, “Coal Transportation Report”

The capacity of railroads to deliver coal from the PRB has been insufficient to meet demand in recent years - a trend that is projected to worsen. According to consultants at Pace Global Energy Services LLC “The supply chain for PRB coal remains vulnerable to disruptions, and these disruptions can potentially be very costly.”

Source: Clair and Dean Wise. April, 2005.

Coal Producing Regions of the U.S.



Source: DOE/NETL report, September 29th, 2006²¹

Furthermore, according to a recent white paper entitled “The New Normal” by Lee Clair and Dean Wise, partners in the energy and transportation consulting firm, Northbridge Associates, the costs of transporting coal supplies from the Powder River Basin and other major coal basins are going nowhere but up. According to Clair and Wise:

“The chronic long-term capacity issue is the capital required to add fixed infrastructure capacity – ports, rail lines, rail terminals, and highways – and those challenges will be with us well into the next decade. In addition to the absolutely large price tag, there are physical, environmental, and political barriers that will lengthen the process by years, not months. It’s certainly not clear that the carriers, nor the public sector, have either the wherewithal or the right plan to put the requisite billions of capital dollars into the right projects at a fast enough pace to bring us back to the “old normal” of widespread excess capacity... So we should expect the “new normal” to be a pretty lengthy state of increasing costs, tight capacity, and related service performance challenges.”¹¹

These transportation constraints will not just affect the availability Powder River Basin coals, but Illinois and Northern Appalachian Basin coals as well. More importantly, just as with the Central Appalachian Basin, both the Illinois and Northern Appalachian Basin have been in decline in recent years. Northern Appalachian coalfields are also past peak production and predicted to decline rapidly in coming decades, and so sourcing that coal provides little long term benefit. In terms of Illinois coals, according to the 2000 USGS Assessment of reserves:

“coal availability and coal recoverability studies in the Illinois Basin show that only a part of the original coal resources within the 7.5-minute quadrangles studied is available for development. Even less of the original resource is actually recoverable, and only a small percentage of the original coal resource is economically recoverable (13 percent of the resource for eight Illinois quadrangles, 7 percent for three Indiana quadrangles, and less than 1 percent for five quadrangles in western Kentucky).”²²

While the increasing demand for high-sulfur coal following the installation of sulfur scrubbers on many power plants is predicted to make a greater proportion of these reserves economically recoverable²², it is precisely that increased demand that is likely to lead to large increases in coal prices in the coming decades.

Increasing Demands on Coal Supplies

“Ninety-three (93) gigawatts of new coal-fired power plants are under consideration, representing 153 coal-fired power plants- or enough electricity to power 93 million homes.”

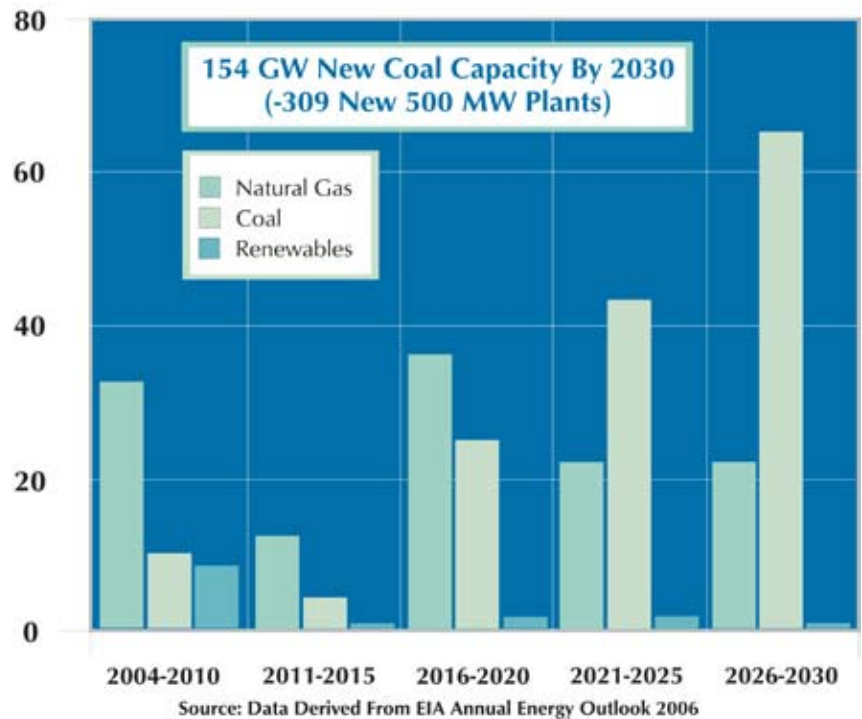
- “Coal’s Resurgence in Electric Power Generation” DOE/NETL, September 29th, 2006²¹

“Industry analysts believe that [Coal to Liquids] plants will be able to operate profitably as long as crude oil prices remain above \$40 per barrel, according to Mark Koenig of Rentech, Incorporated.”

- DOE/EIA “Coal News and Markets” -5 November, 2006²³

Demand for the increasingly limited coal supplies is only going to escalate as a new generation of domestic power plants comes online. The National Energy Technology Lab has tracked 154 new coal-fired power plants that are proposed, in the permitting process, or currently under construction across the U.S.²¹ Much of this new capacity is planned for the eastern U.S., which, given transportation constraints, will dramatically increase demand on the dwindling Appalachian reserves unless a far larger proportion can be imported from overseas. According to the Energy Information Administration:

“With declining productivity and mining difficulties in Central Appalachia and rising demand for coal in the Southeast, imports become increasingly competitive with domestic U.S. coal production.”²⁴



Indeed, Dominion is already importing coal for their plant in Chesapeake, Virginia.^{24,25} The question is whether the cost of imports will remain attractive well into the future. The assumption that sufficient imports will be available to meet increasing demand in the eastern US, and that the cost will remain relatively low, depends on a number of unpredictable factors such as international relations and global power dynamics.

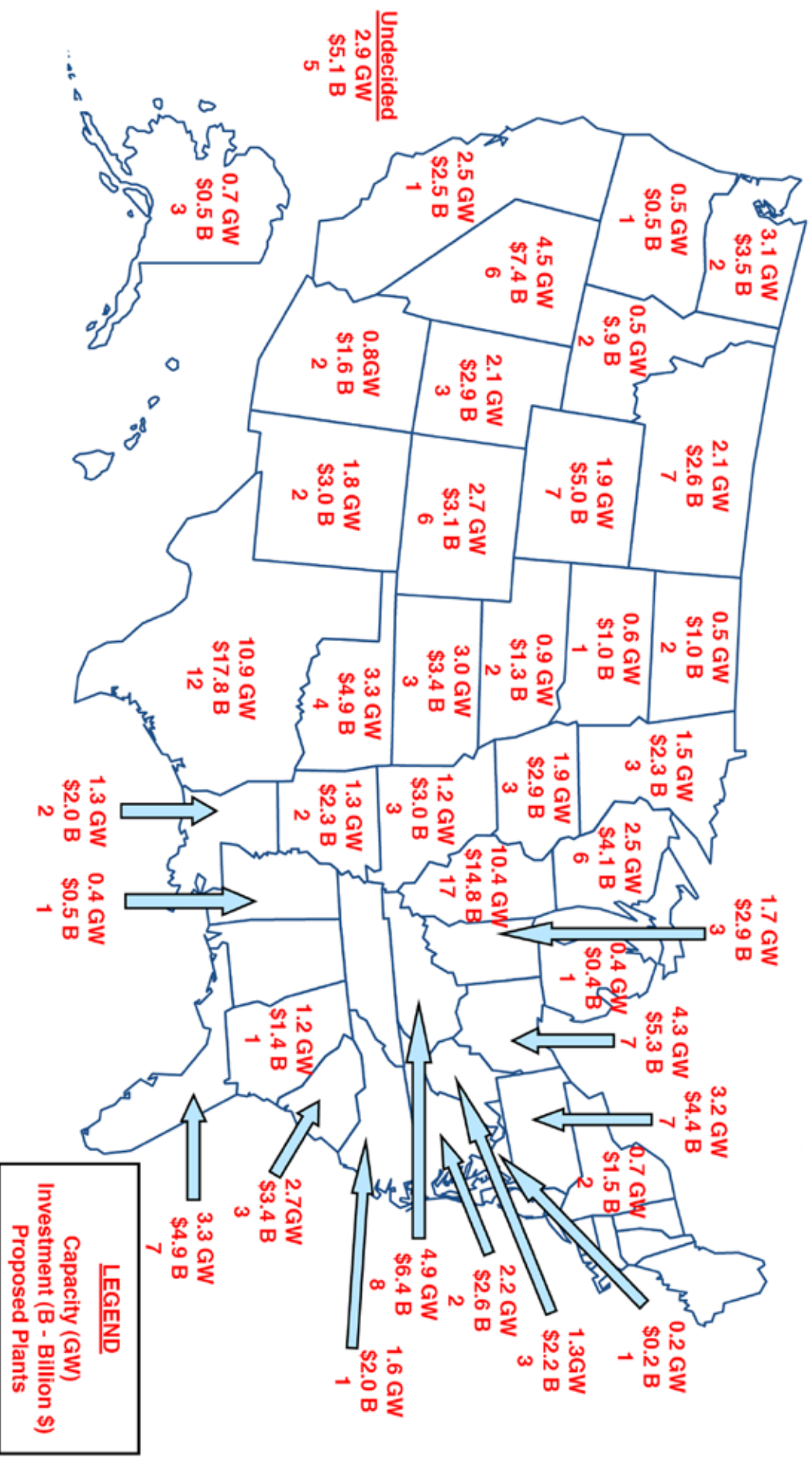
Even more importantly, just as US demand is increasing, international demand is escalating even more rapidly. According to an article in the May-June issue of *Harvard Magazine*:

“China plans to build 168 traditional coal plants in the next two years alone. The economic lifetime of those plants might be 50 years or more.”²⁵

The push for coal-to-liquids technology exacerbates the increasing demand for coal both domestically and internationally. While conventional wisdom dictates that coal-to-liquids technology is cost-competitive when oil prices exceed \$40 per barrel, existing proposals in Congress aim to lower that bar substantially. A bill proposed by Congressman Rick Boucher of Virginia would create government incentives that would make coal-to-liquids profitable should oil prices fall as low as \$30 per barrel²⁶.

Given the well-known volatility of energy markets, even a minor shortage in supply or perceived risk of shortages can send energy prices skyrocketing. These escalating demands virtually ensure more than a “minor” shortage in supplies.

Proposed New Coal-Fired Generating Capacity Across the U.S.



Source: DOE/NETL report, September 29th, 2006²¹

Skyrocketing Costs of Power Plant Construction

“in just the past few months we have certainly seen a trend of fewer bidders, higher prices, earlier payment schedules and longer delivery times as vendors react to the significant increase in volume of work resulting from the announcement of new power plant projects and other large energy projects both in the United States and abroad.”

- Testimony of William McCollum on behalf of Duke Energy Carolinas to the North Carolina Utilities Commission on 29 November, 2006²⁷

“...between 2002-2003 and 2005-2006, the costs of building a new coal fired power plant increased approximately 35 to 40 percent. Second, in 2006, we see that the costs of new coal power plants appear to have further increased another 40 percent. Thus, new coal-fired power plant capital costs have increased approximately 90 to 100 percent since.”

- Testimony of Judah Rose on behalf of Duke Energy Carolinas to the North Carolina Utilities Commission on 29 November, 2006²⁸

Electricity consumers in North Carolina received an unpleasant surprise late last year when Duke Energy Carolinas reported that their initial estimates of \$2 billion for the 1,600 MW expansion of their Cliffside Power Station had escalated to \$3 billion as a direct result of increased demand for materials and labor resulting from the boom in new coal-fired power plant construction across the country. Moreover, it was revealed in January, 2007, that related financing cost increases could well push the price tag in excess of \$3.5 billion. The situation in North Carolina should concern Virginians; first, because these construction cost increases (which Duke representatives testified were reflective of costs nationwide) have not yet been factored into Dominion’s price estimates of building new coal fired power plants; second, because the exact same demand factors that are causing cost overruns in power plant construction will lead to similar price pressures on coal fuels as that new generation of coal fired power plants comes online.

Energy Security in the Commonwealth

“Trains carry 40 percent of intercity freight—a much larger portion than is moved by any other single mode of transportation. About 20 percent of that freight is coal, a critical resource for the generation of electricity.”

- Department of Homeland Security, “The National Strategy for the Physical Protection of Critical Resources and Key Assets” February 2003.²⁹

Putting 45% of Virginia’s electricity “eggs” in the coal “basket,” does not only put Electricity Consumers in the Commonwealth at risk of price spikes, but it also puts them at risk of supply disruptions should the coal supply chain itself be disrupted through natural disasters or terrorist attack. The Department of Homeland Security (DHS) has identified railroads and electric generating facilities as some of the nation’s most critical infrastructures and key assets. As such, while Virginia’s domestic coal reserves swiftly diminish—forcing the state to increase its reliance on coal produced in the PRB and elsewhere—the Commonwealth will become increasingly vulnerable to potentially catastrophic and lengthy disruptions in its electricity generating systems caused by terrorist attacks against the nation’s railway system in other states.

Moreover, the further from the Commonwealth such an attack occurs, the more disastrous and longstanding the consequences may be. As explained by DHS:

“[r]ailroads have well-developed contingency plans and backups for dispatch, control, and communications equipment, that are sufficient for localized or minor disruptions. Developing this type of backup to enable continuation of operations after a cataclysmic event is problematic given the costs associated with extensive structural enhancements.”²⁹

- From the “The National Strategy for the Physical Protection of Critical Resources and Key Assets” (emphasis added).

Reliance on coal shipped from overseas suppliers is no panacea either because the nation’s ports have also been identified by DHS as critical infrastructures subject to attack by terrorists. Until America wins the War on Terror, her ports and railways will not be reliable conduits for supplying coal to the Commonwealth.

Re-Examining Re-Regulation in Virginia

Less than a decade ago, Dominion Power adamantly supported legislation that would deregulate the electric utility industry in the Commonwealth. Now that legislators are considering re-regulation, many have been surprised by Dominion's about-face on the issue and have been prompted to ask why the company is now actively promoting a bill that would re-regulate the market. It's no secret that Dominion's initial proposal for a re-regulation bill is considered by many media and industry-watchers as unabashedly favorable to their shareholders at the expense of ratepayers³⁰, but the issue may be more complicated than that.

Considering that Dominion plans to build a new power line across the Northern Piedmont, a new coal-fired power plant in Southwest Virginia and possibly additional coal-fired generating units across the state at a time that construction costs are rising by as much as 50% per year, it's no surprise Dominion would rather have rate-payers rather than shareholders and investors shoulder the financial risks associated with these plans. One need not be an industry analyst to recognize the three key reasons why Dominion would support limited re-regulation:

1. Dominion is competing with as many as 153 new coal-fired plants (see page 11) for increasingly scarce skilled labor and materials to build its proposed plants in St. Paul and elsewhere across the Commonwealth. As such, investors and shareholders are becoming more and more reluctant to invest in companies that do not have guaranteed rates of return.
2. Overwhelming public opposition to Dominion's proposed Northern Piedmont power line makes shareholders and other investors wary of proceeding against the public's will.
3. As global warming trends make regulation of greenhouse gases almost inevitable, investors and shareholders are increasingly worried about the additional costs of installing, operating and maintaining new pollution controls.

While each of these factors are legitimate concerns for Dominion, placing these risks back on the shoulders of ratepayers without fully considering the consequences for electricity markets or protecting rate-payers' interests would be a colossal failure of judgement on the part of the General Assembly. Before rushing to enact legislation, Virginia's legislators owe it to their constituents to fully examine the implications of such a move.

Policy Recommendations

The perception that Virginia's recoverable coal reserves are sufficient to power our electricity needs, or even substantially offset the need for coal imports into the future is demonstrably false. Virginia's General Assembly should look closely at this situation rather than rely on reassurances from coal industry associations. The National Academy of Sciences has formed a committee that is conducting a comprehensive review of the best available information on the status of coal reserves across the country. At a minimum, the General Assembly should refrain from sponsoring any legislation that paves the way toward the building of new coal-fired power plants until the results of this study are released and analyzed in relation to Virginia's energy markets. The NAS study is due to be released in July, 2007, and more details are available on their website at:

<http://www8.nationalacademies.org/cp/projectview.aspx?key=189>.

In the meantime, specific recommendations for this legislative session are as follows:

- 1. Oppose re-regulation of Virginia's electricity market** as well as initiatives to restructure utilities' cost-recovery of new investments in generating capacity until legislators and the public have had ample opportunity to investigate the full repercussions of such a move. Any legislation that would create greater incentives for Dominion to gamble on risky and costly new infrastructure, while Virginia's electricity consumers shoulder the risk, should not be enacted lightly or hastily.
- 2. Commission an independent study** regarding: 1.) the increasing construction costs and projected fuel costs given declining coal production capacity in Virginia and across Appalachia; 2.) the transportation capacity and projected costs of servicing existing and expanded demand for coal from Virginia's utilities; 3.) a realistic cost comparison of alternative ways to meet Virginia's electricity demand given revised cost estimates for coal-fired generation; and 4.) the risks to Virginia's ratepayers and overall economy from re-regulation of Virginia's utilities and other initiatives promoted by Dominion.

Citations

1. Domestic Distribution of U.S. Coal by Origin State, Consumer, Destination and Method of Transportation, 2003, DOE/EIA Website: <http://tonto.eia.doe.gov/FTP/ROOT/coal/coaldist2003/distable3.pdf>
2. Westman and others, 2000. *Powell River Project: Estimation of Southwest Virginia Coal Reserves*. Publication Number 460-139.
3. Hill and Associates, Central Appalachian Coal Supply Study Summary, 2006. Website: <http://www.hillandassoc.com/centralappalachian.htm>
4. DOE/EIA-0484(2006) "International Energy Outlook 2006."
5. "A Wakeup Call for Coal" by Gary L. Hunt and Hans Daniels - Public Utilities Fortnightly, December, 2006. Website: http://www.pur.com/pubs/pdf.cfm?id=12012006_PowerMeasurements.pdf
6. Ruppert, L.F., 2001, Chapter A—Executive summary—Coal resource assessment of selected coal beds and zones in the northern and central Appalachian Basin coal regions, in Northern and Central Appalachian Basin Coal Regions Assessment Team, 2000 resource assessment of selected coal beds and zones in the northern and central Appalachian Basin coal regions: U.S. Geological Survey Professional Paper 1625-C.
7. Milici, R.C., 1999, Bituminous coal production in the Appalachian Basin—past, present, and future: U.S. Geological Survey Miscellaneous Field Studies Map MF-2330, scale 1:2,500,000 (available on the web at <http://pubs.usgs.gov/mf-maps/mf-2330/>).
8. "COALVISION 2006" Presentation to the 15th Annual Conference of the Mineral Economics and Management Society, April, 2006 by William P. Wolf, Director, Business and Market Analysis, John T. Boyd Company.
9. "Coal Production in the United States" Energy Information Administration, October 2006. Website: http://www.eia.doe.gov/cneaf/coal/page/coal_production_review.pdf
10. Testimony of WILLIAM M. MOHL, Vice President, Commercial Operations Entergy Services, Inc. On Behalf of the Edison Electric Institute to the Federal Energy Regulatory Commission, AD06-8-000, June 15, 2006. Website: http://www.eei.org/about_EEI/advocacy_activities/Federal_Energy_Regulatory_Commission/060615MohlFercRail.pdf.
11. The New Normal: Why Businesses Should Redesign Now, and Not Wait for Freight Rates and Service to Get "Back to Normal" by Lee Clair and Dean Wise. April, 2005. http://www.norbridgeinc.com/services/Norbridge_New_Normal_April2005.pdf
12. "Spike in PRB demand prompts rail limits." NORTH AMERICAN TRANSPORTATION NEWS AND ANALYSIS Volume 23, 25, 21 December 2004. Website: <http://www.argusmediagroup.com/pdf/20040621ctr.pdf>
13. "Building New Coal Generation/SNG: Regulated vs Unregulated," a presentation by Jacob Williams, Peabody Energy to the Michigan Public Service Commission - 21st Century Energy Planning Group Meeting: August 22, 2006. http://www.cis.state.mi.us/mpsc/electric/capacity/energyplan/peabody_williamsaug22_2006.pdf.
14. North Carolina Utilities Commission, 2006, Supplemental Testimony of Judah Rose. for Duke Energy Carolinas, DOCKET NO. E-7, SUB 790. Website: http://www.duke-energy.com/about/plants/new_generation/coal/cliffside/regulatory/rose.pdf
15. Source: "Trends in U.S. Domestic Coal Markets: Are Higher Prices and Higher Price Volatility Here to Stay?" Pincock Perspectives, #58, September, 2004.
16. DOE/EIA-0584 (2005) Annual Coal Report 2005
17. "The Great Energy Scam," Time Magazine, Oct. 13, 2003 By Donald L. Barlett and James B. Steele. Website: <http://www.time.com/time/magazine/article/0,9171,1005864,00.html>
18. "An Overview of Senate Energy Bill Subsidies to the Fossil Fuel Industry," May 12, 2003, Written Comments by Aileen Roder, Program Director, Taxpayers for Common Sense. Website: <http://www.taxpayer.net/greenscissors/LearnMore/senatefossilfuelsubsidies.htm>
19. Synfuel Winning Favors and Scrutiny, April 19, 2006, Ken Silverstein, EnergyBiz Insider. Website: http://www.energycentral.com/centers/energybiz/ebi_detail.cfm?id=131
20. DOE/EIA "Coal News and Markets" - 20 December, 2006
21. "Coal's Resurgence in Electric Power Generation" DOE/NETL, September 29th, 2006
22. "Resource Assessment of the Springfield, Herrin, Danville, and Baker Coals in the Illinois Basin" by J.R. Hatch, R.H. Affolter. U.S. Geological Survey Professional Paper 1625-D, 2002. Website: <http://greenwood.cr.usgs.gov/energy/coal/PP1625D/>
23. DOE/EIA "Coal News and Markets" -5 November, 2006
24. "International Energy Outlook 2006," June 2006. DOE/EIA-0484(2006). Website: <http://www.eia.doe.gov/oiaf/ieo/coal.html>
25. "Fueling Our Future" by Jonathan Shaw. Harvard Magazine, May-June issue, 2006. Website: <http://www.harvardmagazine.com/on-line/050692.html>
26. "Coal-to-liquid a top priority for Boucher" by Tom Colley, Bluefield Daily Telegraph, November 18, 2006. http://www.bdtonline.com/local/local_story_322203650.html
27. North Carolina Utilities Commission, 2006, Supplemental Testimony of William R. McCollum Jr. for Duke Energy Carolinas, DOCKET NO. E-7, SUB 790.
28. North Carolina Utilities Commission, 2006, Supplemental Testimony of Judah Rose. for Duke Energy Carolinas, DOCKET NO. E-7, SUB 790.
29. Department of Homeland Security, "The National Strategy for the Physical Protection of Critical Resources and Key Assets" February 2003.
30. "Panel slams Dominion's plan to regulate electric rates," The Virginian-Pilot, Norfolk, Va. (January 9, 2007) http://uaelp.pennnet.com/news/display_news_story.cfm?Section=WireNews&Category=HOME&NewsID=142866



Produced by Appalachian Voices
January, 2007
www.appvoices.org