The High Cost of Coal

Executive summary

Holding to the widely repeated mantra that coal is cheap and plentiful, utility companies have proposed two new coal-fired power plants in Georgia. These plants will discharge 16 million tons of carbon dioxide – more than the entire state of Idaho's emissions for one year – into our air annually.[1] However, this mantra is a myth – in Georgia, coal is neither plentiful nor cheap.

First, Georgia has no coal reserves. As a result, any money spent on coal is sent out of the state and in some instances abroad.[2] Georgia already annually spends over $2 billion on coal and will spend at least another $192 million on coal if Plant Washington is built, according to Power4Georgians a group of electric membership co-ops (EMCs) working to build a coal plant in Washington County. [3]

Second, coal is proving to be far from cheap. In the past year alone, the average cost of a ton of U.S. coal has nearly doubled.[4] Moreover, electricity from coal-fired power plants will likely become much more expensive in the coming years with the establishment of national limits on the emission of carbon dioxide, the leading pollutant behind global warming. For example, Duke Energy (which gets 71 percent of its electricity from coal) estimated that one of the leading global warming proposals in Congress could raise electricity rates by 10 to 60 percent.[5] And if Georgia's new plants are eventually required to capture and store their carbon dioxide emissions, their average cost of electricity generation could double.

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Myth 1: Coal is plentiful

Because there is no coal production in Georgia, the state must import all of its coal which means every dollar spent on fuel for a coal-fired power plant is sent out of Georgia. The price rise and production cuts associated with Appalachian coal production has led Georgia to buy more western coal, meaning Georgia is importing coal from farther away. Thus, the end cost of the coal is more expensive, especially considering rising fuel and transportation costs.

Georgia does, however, have renewable energy potential that does not need to be imported. For example, if we were to double our wood removals in Georgia, and use all the waste, all coal could be displaced.[6] Further, even if we import wood, it is much cheaper than coal: On average coal delivered to Georgia costs approximately $48/ton while wood delivered to Georgia costs approximately $30/ton.[6]

There is also potential for solar energy, especially if we invest as aggressively as we currently spend and plan to invest in coal. If we were to use the same amount we spent on coal in 2006 and the money to construct and fuel Plant Washington for one year—that is, 4,237,225,100—Georgia could provide 188,321 to 770,404 of its citizens with residential photovoltaic systems.[7][8] Solar energy may require a larger initial investment per capita than coal, but once the parts are purchased and installed, solar power costs nothing to fuel. Further, the manufacturing costs for solar panels are declining each year through new research and economies of scale.

Myth 2: Coal is cheap

The price of coal varies based on the type of coal and the location of the coal. There is more energy stored in some coal, like American Appalachian coal, which, in turn, increases the coal's price. The cost of shipping coal can cost more than the cost of mining it, as in Georgia's case for importing Powder River Basin coal.

In the last year, the price of American coal has nearly doubled. Powder River Basin coal (PRB), which the proposed plant in Washington County plans to use, has risen to $14/on from $8 since April 2007. Transporting PRB to Georgia from Montana and Wyoming drives the cost up to $50/on.[9] In some cases, the rise has been even more dramatic: Appalachian steam coal prices have increased approximately 75 percent this year.[10]

The dramatic rise in price is a result of international events and demand as well as higher transportation prices. Though coal has historically been a stable energy source the price of coal is increasingly dependent on events elsewhere in the world. First, Australia, the world's largest exporter, as well as other exporters such as Colombia, Venezuela and South Africa, are exporting less due to port infrastructure failures or production problems. At the same time, the demand for steam coal to fuel new power plants and industrial plants has continued to grow in China, India and other parts of Asia. This is further compounded by the fact that in early 2007, China became a net importer of coal for the first time.[11]

Resultantly, there is a higher demand for American coal, helping to push up the price of domestic electricity and decrease coal's market price stability. U.S. coal exports jumped 19.2 percent last year, according to the Energy Department, and are expected to rise another 15 percent this year.[12]

Table 1

Average Spot Coal Prices (Dollars per Short Ton)					
Week Ended	**Central Appalachia 12,500 Btu, 1.2 SO2**	**Northern Appalachia 13,000 Btu, <3.0 SO2**	**Illinois Basin 11,800 Btu, 5.0 SO2**	**Powder River Basin 8,800 Btu, 0.8 SO2**	**Uinta Basin 11,700 Btu, 0.8 SO2**
23-Nov-07	$52.95	$55.25	$33.50	$11.05	$24.00
30-Nov-07	$56.80	$55.25	$33.50	$11.15	$24.00
07-Dec-07	$57.70	$55.25	$33.50	$14.00	$24.00
14-Dec-07	$57.70	$55.25	$33.50	$11.50	$24.00
21-Dec-07	$57.70	$55.25	$33.50	$11.50	$24.00

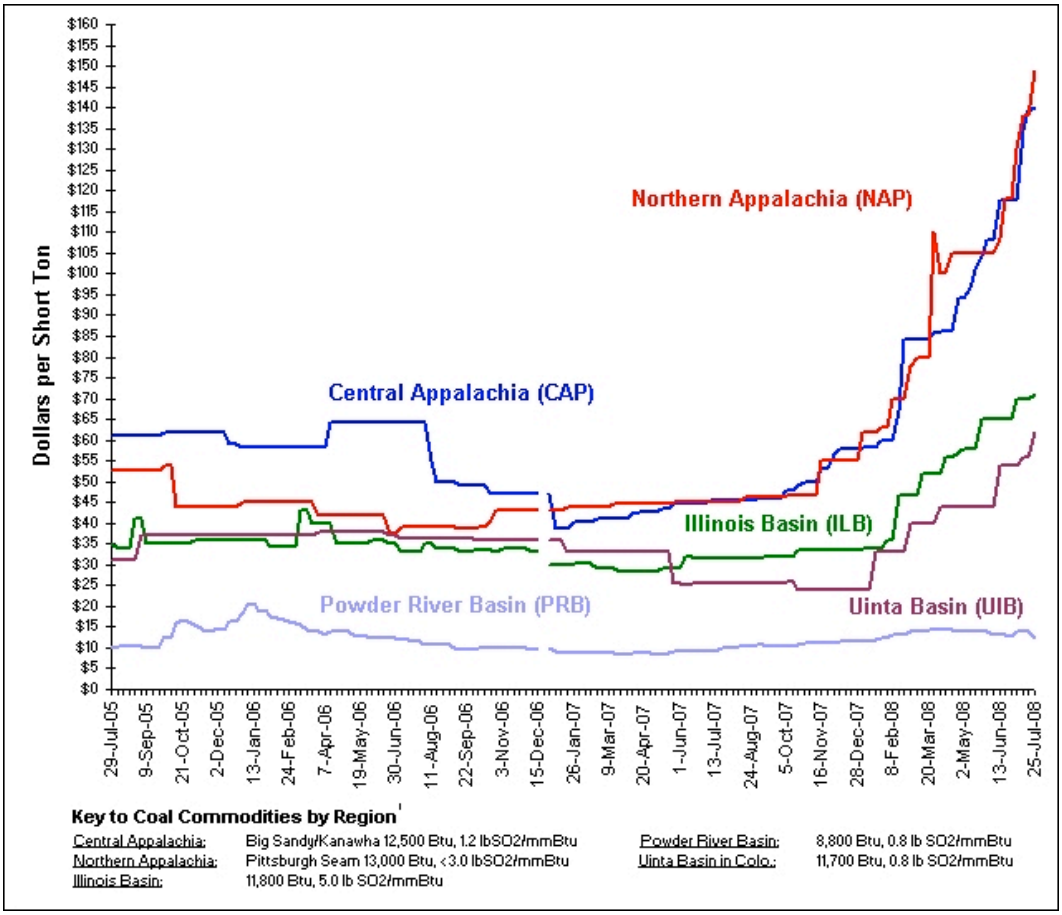
Source: http://www.eia.doe.gov

Table 2

Average Spot Coal Prices (Dollars per Short Ton)					
Week Ended	**Central Appalachia 12,500 Btu, 1.2 SO2**	**Northern Appalachia 13,000 Btu, <3.0 SO2**	**Illinois Basin 11,800 Btu, 5.0 SO2**	**Powder River Basin 8,800 Btu, 0.8 SO2**	**Uinta Basin 11,700 Btu, 0.8 SO2**
27-June-08	$117.60	$118.00	$65.00	$12.75	$54.00
03-July-08	$117.60	$130.00	$70.00	$14.00	$54.00
11-July-08	$134.55	$138.00	$70.00	$14.00	$56.00
18-July-08	$139.30	$138.00	$70.00	$14.00	$56.00
25-July-08	$140.00	$149.00	$71.00	$12.50	$62.00

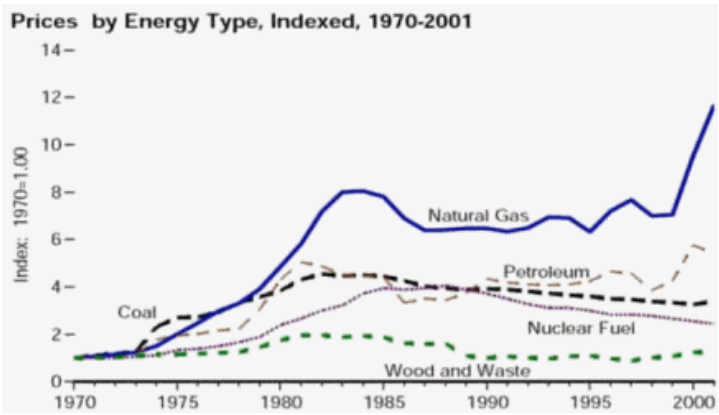
Source: http://www.eia.doe.gov

Table 3



Source: http://www.eia.doe.gov

While proponents of the Washington County plant claim that coal is the best path forward because of its market stability, their analysis is outdated, relying on data nearly seven years old. This chart, which only goes to the year 2001, is taken directly from their website.



The price of coal may see yet another rise due to probable global warming regulation associated with the pending administration; Candidates McCain and Obama both pledge to tackle greenhouse gas if elected. Further, on November 13, 2007, the National Association of Regulatory Utility Commissioners adopted its first resolution acknowledging that climate change legislation addressing carbon emissions will occur. As a result, increasing numbers of companies are announcing that they will not pursue new coal-fired plants, as was the case for Excel Energy. In its Resource Plan filed in Colorado in November 2007, Xcel Energy concluded that:

> In sum, in light of the now likely regulation of CO2 emissions in the future due to a broader interest in climate change issues, the increased costs of constructing new coal facilities, and the increased risk of timely permitting to meet planned in-service dates, Public Service does not believe it would be prudent to consider at this time any proposals for new coal plants that do not include CO2 capture and sequestration.[13]

Likewise, Rocky Mountain Power, a division of PacifiCorp, cancelled two proposed coal plants in the fall of 2007, explaining:

> Furthermore, due to the current uncertainty in the ability to quantify in any meaningful way the cost of compliance with potential federal CO2 legislation, Bridger 5 as a supercritical unit is no longer a viable option for 2014. Within the last few months, it has become apparent that Congress will enact some restriction upon carbon emissions, but the project cost impact upon new coal generation is currently within such a wide range as to make meaningful risk assessment futile. [14]

Aside from companies willingly canceling projects, more than 20 coal-fired power plant projects have been cancelled or rejected by state regulatory commissions or boards since December 2006; more than three dozen others have been delayed, in part, because of concern over climate change.[15]

There is no definite cost assigned to projected CO_2 legislation, but that has not stopped diverse public and private sector actors from recognizing the risks associated with increasing coal reliance. If carbon capture and storage is mandated, Synapse Energy Economics estimates that electricity rates from coal plants would leap about 75 percent. And analyzing one of the leading climate-change proposals in Congress, Duke Energy

found that it would raise the utility's electricity rates between 10 percent and 60 percent by 2020.[16]

Conclusion

Georgia has many untapped resources that can help meet our energy demand: Offshore wind, solar power, and energy efficiency are just a few. This document is not meant to be a full discussion on renewable resources but it is worth noting that there are other options for Georgia's energy future that do not require investing in coal, a fuel source that is neither plentiful or cheap in Georgia today.

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4 Based on tables 1 and 2 from the EIA available at http://tonto.eia.doe.gov

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