

The Journal Report: The Best Online Tools for Personal Finance

# THE WALL STREET JOURNAL.

\*\*\*\*\*  
 A NEWS CORPORATION COMPANY

MONDAY, JUNE 8, 2009 - VOL. CCLIII NO. 132  
 Last week: DJIA 8763.13 ▲ 262.80 3.1% NASDAQ 1849.42 ▲ 4.2% NIKKEI 9768.01 ▲ 2.6% DJ STOXX 50 2146.35 ▲ 1.0% 10-YR TREASURY ▼ 3.6/32, yield 3.861% OIL \$68.44 ▲ \$2.13 EURO \$1.3965 VEN 98¢

\*\*\*\*\* \$2.00

## U.S. Foresees a Thinner Cushion of Coal

BY REBECCA SMITH

Every year, federal employee George Warholic calculates America's vast coal reserves the same way his predecessors have for decades: He looks up the prior year's coal-reserve estimate, subtracts the year's nationwide production and arrives at a new official tally.

Coal provides nearly one-quarter of the total energy consumed in the U.S., and by Mr. Warholic's estimate, the country has enough in the ground to last about 240 years. A belief in this nearly boundless supply has led officials to dub the U.S. the "Saudi Arabia of Coal."

But the estimate, recent findings show, may be wildly overconfident.

While there is almost certainly as much coal in the ground as Mr. Warholic's Energy Information Administration believes, relatively little of it can be profitably extracted. Last year, the U.S. Geological Survey completed an extensive analysis of Wyoming's Gillette coal field, the nation's largest and most productive, and determined that less than 6% of the coal in its biggest beds could be mined profitably, even at prices higher than today's.

"We really can't say we're the Saudi Arabia of coal anymore," says Brenda Pierce, head of the

USGS team that conducted the study.

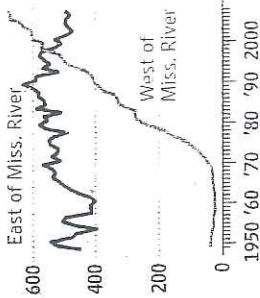
No one says the U.S. is facing a coal shortage. But the emerging ranks of "peak coal" theorists argue that current production levels may be unsustainable and, if anything, create a false sense of security. David Rutledge, an electrical-engineering professor at the California Institute of Technology who has studied global coal production, figures the U.S. has about half as much recoverable reserves as the government says, which would work out to about 120 years' worth.

The Energy Information Administration  
 Please turn to the next page

### Peak Coal

U.S. bituminous coal production by region:

800 million short tons



Source: Energy Information Administration

# U.S. Foresees a Thinner Security Blanket From Its Coal Deposits

Continued from the prior page  
 administration, part of the Department of Energy, says it is reassessing its coal tally in light of the new Geological Survey data. It intends to create a new coal baseline from which it will begin its annual subtraction "as soon as we can," says William Watson, a member of the energy analysis team at EIA in Washington, D.C.

In the field, challenges are becoming more apparent. Mining companies report they have to dig deeper and move more earth to extract coal from aging mines, driving up costs. Utilities have grown skittish about whether suppliers can ship promised coal, on time. America's biggest coal buyer, says it has stepped up its due diligence to make sure its suppliers can make deliveries after some firms missed shipments last fall. It even bought a mine to lock down supplies.

"We are very much concerned, and it's getting worse," said Tim Light, senior vice president for AEP.

Coal mines began appearing in America in the early 1740s in Virginia. A century later, as the nation's railroads branched out, coal provided fuel for steamships on the Mississippi and blast furnaces that made steel. The U.S. came to rely on abundant coal to generate electricity, too. About half of the electric power in the U.S. still is produced by coal combustion, more than in most other industrialized nations.

The country's coal supplies have been seen as a bulwark of energy security. In 1979, as the U.S. was reeling from an oil shock, President Jimmy Carter pushed for projects to create liquefied gas from America's vast coal reserves. Today, the U.S. produces 1.1 billion tons of coal annually, more than any nation but China.

Concerns about supplies are out of the spotlight now, masked by what could be a short-term lull in the appetite for coal.

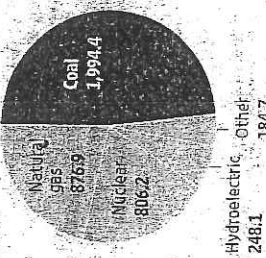
A recession has reduced demand from the two biggest users of coal, electricity producers and steelmakers. A proposed law capping greenhouse-gas emissions could make coal-generated electricity—currently one of the cheapest power sources—significantly more expensive. At the same time, the country has found itself awash in cleaner-burning natural gas after recent big discoveries, prompting some power com-

## Power Source | The U.S.'s reliance on coal

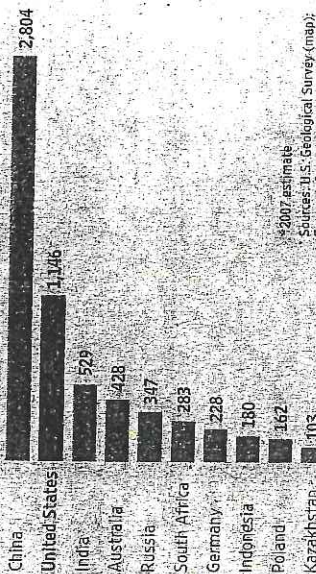
Coal-producing areas of the U.S.



U.S. net electricity generation, in millions of megawatt hours, 2008



Total estimated coal production, in millions of short tons



\*2007 estimate  
 Sources: U.S. Geological Survey (map); Energy Information Administration

mining companies an 8% rate of return.

If Powder River prices were to hit \$60 a ton in current dollars, as much as 47% could be extracted. But at that price, coal would have a tough time competing with other fuels and technologies.

By adding an economic component, the study broke ground. Jim Luppens, an industry veteran who is now chief of the coal-assessment project for USGS, says policy makers often confuse the total coal resource—which he describes as the "blood, guts and feathers" number—with coal reserves, which he likens to the edible meat. "They mix up the R-words," he says.

The findings are percolating through the coal and power industries. "USGS made a leap forward with this study," says Vic Svec, spokesman for Peabody Energy Resources, the U.S.'s biggest coal company. He adds that when his company plugs in prices as the USGS study did, it reaches similar conclusions.

Modern estimates of the U.S. coal resource began in 1907, with field geologists reporting on outcroppings—places where coal stuck out of the ground—and mines. Based on consumption at the time, the USGS concluded there were three trillion tons of coal, enough to last 5,000 years. By the 1950s, armed with more mining data, the USGS and the now-defunct U.S. Bureau of Mines reduced their estimate of the total resource to 500 billion tons.

The federal method for calculating U.S. coal reserves has changed little in 35 years. In 1974, the Bureau of Mines established a baseline reserve level, considered good for its era. Each year since, the government—currently, the DOE's Energy Information Administration—has subtracted each coal region's production and mine waste to get a new estimate of what's left in the ground.

In 2007, the EIA said the U.S. had a "demonstrated reserve base" of nearly 500 billion tons of coal. It regarded 267 million tons of that as "economically recoverable," enough for 240 years.

Even Mr. Warholc, the EIA analyst, says he's skeptical about the results. "It's kind of crazy" to postulate how long U.S. reserves will last, he says. "It could be 110 years or 225 years or something completely different. It all depends on your assumptions."

After many decades of mining, some of the country's coal fields are showing their age. "What's left to mine is not as easy as what we mined even 10 or 20 years ago," says Janine Orf, spokeswoman for Patriot Coal Corp. in St. Louis. "The seams are getting thinner and there are more limestone intrusions."

Even at the Gillette field, where surface mining started around 1924 and production still is buoyant, obstacles are emerging.

Coal at its Gillette's eastern edge lies mostly close to the surface but the seams generally slope downward in a westerly direction, forcing miners to dig progressively deeper to extract it. At Arch Coal's Black Thunder mine, five pits are moving westward and will intersect the main Burlington Northern-Santa Fe railroad line at some point. Arch then will have to move heavy equipment to the other side of the tracks and dig a new pit down several hundred feet, which it says could cost \$100 million or more.

Coal's big buyer, the power industry, has grown increasingly nervous about securing reliable suppliers for power plants that often have a useful life of 50 or 60 years. Plants fine-tune their equipment to burn the coal they expect to receive and to remove its particular pollutants from the waste stream. That makes it problematic to switch suppliers.

Last fall, production problems caused some coal producers in the East to struggle to fulfill contracts. Utility executives say the delays were a wake-up call.

American Electric Power has 9,100 railroad cars and 2,480 river barges dedicated to keeping its power plants furnished with coal. In May, AEP, together with a partner, Gleco Corp., bought a coal mine in Louisiana after a coal source faltered that had been furnishing fuel to a power plant they own together.

Buying the mine outright, says AEP's Mr. Light, was the best way to understand—and control—how much coal the power company could expect to receive. "We don't know what the future holds," he said.

field, an 80-mile-long strip in northeastern Wyoming that contains the nation's 10 top-producing mines. About one-third of all coal in the country is produced there. Some 1.2 million short tons leave the field daily, a river of coal filling more than 75 trains of 125 to 150 cars each.

For the Gillette study, USGS engineers, geologists and economists spent three years analyzing data from 10,200 drill holes, the most comprehensive study ever attempted of the region. The team concluded there are 201 billion short tons of coal in the Gillette field. Environmental rules and physical challenges put much of that out of reach, leaving what they figured were 77 billion short tons of recoverable coal.

Little is presently worth mining. Analyzing coal beds that contained 82% of the Gillette deposits, the team determined that with prevailing price two years ago, only 6% of the coal could be extracted profitably enough to leave

enormously competitive energy resource by virtually any conceivable measure," says Kim Link, spokeswoman for Arch Coal Inc., which produced about 12% of the nation's coal last year.

The U.S. isn't the only nation employing improved drilling data and computer modeling to reassess its supplies. Germany cut its proven hard-coal reserve estimates by more than 99% in 2004 as it explored reducing mining subsidies, which would make coal more expensive to extract. Overall, assessments of total world reserves dropped by half from 1980 to 2005, according to a study by Energy Watch Group, an independent group based in Germany.

The U.S. Geological Survey, the Department of the Interior's science agency, attempted to get a clearer picture of the nation's coal supplies beginning in 2004. Its full study of the Powder River Basin in Wyoming and Montana will be completed next year.

The agency began with the Powder River's rich Gillette coal

WSJ.COM

ONLINE TODAY: See photos from the Powder River Basin, at [bit.ly/10000000](http://bit.ly/10000000)

# HB 15-1250

## Performance Based Utility Regulation

*Testimony of Leslie Glustrom*

*lglustrom (at) gmail.com 303-245-8637*

*Colorado House Committee on Transportation and Energy*

*March 25, 2015*

Good afternoon Mr. Chairman and Members of the Committee:

Thank you for this opportunity to testify on HB15-1250, related to Performance Based Regulation for Investor Owned Electric Utilities. I have entered my testimony as being “neutral” on this bill because Coloradans are facing a very important task and the Legislature has a very important role to play as we move forward. In order to do this task well, I believe the bill should be strengthened in several key ways which I will discuss below.

### I. Introduction

I know several Committee members, but for those that don’t know me, I am Leslie Glustrom. I have spent the last decade intervening at the Public Utilities Commission (PUC) on electric utility dockets as a citizen intervenor. I have been granted full intervenor status in the following PUC dockets:

05A-072E PSCo Comanche-Daniels Park Transmission  
07A-107E/07A-196E PSCo<sup>1</sup> 2013 Contingency Plan/Tri-State Gas Contracts  
07A-421E PSCo Pawnee Smoky Hill Transmission  
07A-521E PSCo Interruptible Service Option Credit  
07A-447E PSCo 2007 Resource Plan  
07A-469E PSCo Fort St. Vrain Turbines  
08S-520E PSCo 2009 Rate Increase  
09AL-299E PSCo 2010 Rate Increase  
09A-772E PSCo 2010 Renewable Energy Compliance Plan and Windsource  
10A-124E PSCo Smart Grid CPCN  
10A-377E PSCo Amendment to 2007 Resource Plan  
10M-245E PSCo Clean Air Clean Jobs Plan  
11A-135E PSCo Solar Rebate Program Restart  
11A-325E PSCo Pawnee Emissions Control CPCN  
11A-418E PSCo 2012 Renewable Energy Standard Compliance Plan  
11A-869E PSCo 2011 Resource Plan  
11A-917E PSCo Hayden Emissions Control CPCN  
11A-1001E PSCo Smart Grid City Cost Recovery  
11A-869E PSCo 2011 Resource Plan

---

<sup>1</sup> PSCo stands for Public Service Company of Colorado—the branch of Xcel Energy that operates in Colorado.



From 2005-2011, my intervention in PUC dockets was granted under Colorado laws C.R.S. § 40-6-109 (1)<sup>2</sup> and 40-6.5-104(2).<sup>3</sup> However, when Chairman Epel took over as the Chairman of the PUC he began an effort to block my intervention and my requests for intervention have been largely denied since 2012. These intervention denials have occurred even though the Legislature did not change the laws governing PUC intervention.

As a result of many years of full participation in PUC dockets, I strongly support the need to review Colorado's electric utility regulatory practices to prepare our state to remain an economic leader in this century.

Ensuring adequate and affordable electricity supplies is obviously key to the economic vitality of our state and country and this is a great opportunity to practice the bipartisan partnerships that have made our state a great place to live and do business.

There are several regulatory practices currently used at the Public Utilities Commission that are not leading to wise investment decisions for our state and which should be reviewed carefully by the Legislature and the Colorado Energy Office, but before reviewing those, there is an issue of over-riding concern that I implore all of you to take with the utmost seriousness—that is the need to begin planning for possible coal supply constraints in the coming decade.

The issue of ensuring adequate coal supplies is an issue that has largely snuck up on us and I am begging you, as our elected officials, to begin to take a hard look at what is happening with the dominant fuel that powers Colorado's electric system.

---

<sup>2</sup> C.R.S. § 40-6-109 (1) states in pertinent part:

(1) At the time fixed for any hearing before the commission, any commissioner, or an administrative law judge, or, at the time to which the same may have been continued, the applicant, petitioner, complainant, the person, firm, or corporation complained of, and such persons, firms, or corporations as the commission may allow to intervene and such persons, firms, or corporations as will be interested in or affected by any order that may be made by the commission in such proceeding and who shall have become parties to the proceeding shall be entitled to be heard, examine and cross-examine witnesses, and introduce evidence... All parties in interest shall be entitled to be heard in person or by attorney. (Highlighting added).

<sup>3</sup> C.R.S. § 40-6.5-104 (2) states:

(2) In exercising his discretion whether or not to appear in a proceeding, the consumer counsel shall consider the importance and the extent of the public interest involved. In evaluating the public interest, the consumer counsel shall give due consideration to the short- and long-term impact of the proceedings upon various classes of consumers, so as not to jeopardize the interest of one class in an action by another. If the consumer counsel determines that there may be inconsistent interests among the various classes of the consumers he represents in a particular matter, he may choose to represent one of the interests or to represent no interest. Nothing in this section shall be construed to limit the right of any person, firm, or corporation to petition or make complaint to the commission or otherwise intervene in proceedings or other matters before the commission.

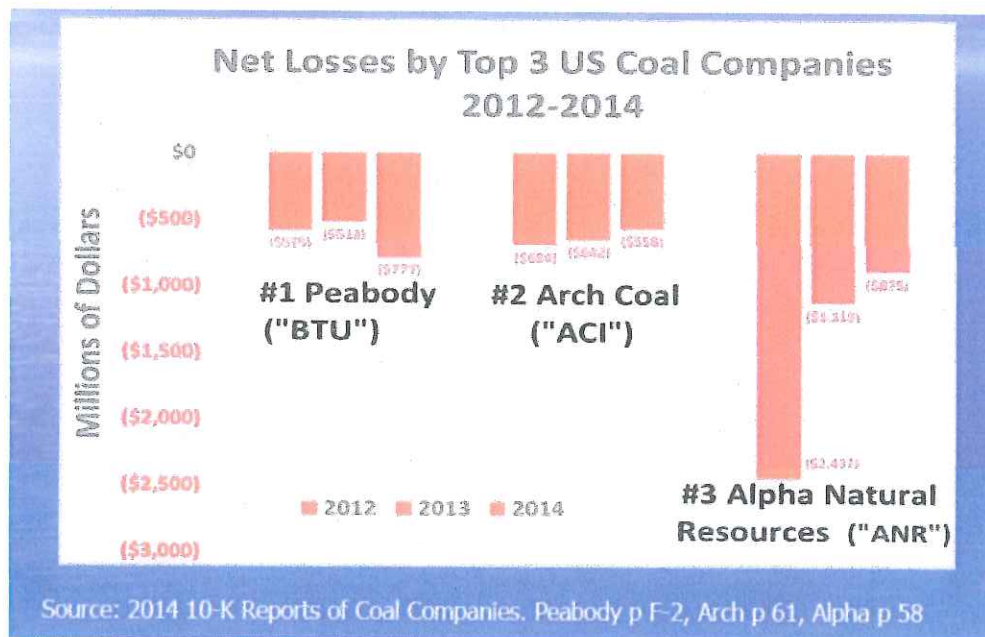


## II. Urgent Need to Ensure Adequate and Affordable Electricity Supplies in the 2020s and Beyond

Colorado is a state that has had a strong reliance on coal based generation of electricity for many decades. Currently, over 50% of Xcel's Colorado generation comes from coal<sup>4</sup> and approximately 70% of Tri-State's generation comes from coal.<sup>5</sup>

The US coal industry is in dire financial condition, and as a result, there are serious cost and supply issues looming for any utility that is currently heavily dependent on coal.

If we want our state and country's economies to have an adequate and affordable supply of electricity in the 2020s and beyond, we need to begin taking a hard look at the current financial state of the US coal industry and begin discussing the implications for grid stability in Colorado--and in every state that relies on coal for their electricity.



A review of the Annual 10-K statements for the top 3 US coal companies, as shown above, indicates that these companies have all lost well over \$500 million a year for each of the last 3 years. Each of these companies is an important supplier to Colorado's coal plants.

<sup>4</sup> See [http://www.xcelenergy.com/Company/Operations/Power\\_Generation\\_Stations/Power\\_Generation\\_Fuel\\_Mix\\_-\\_PSCo](http://www.xcelenergy.com/Company/Operations/Power_Generation_Stations/Power_Generation_Fuel_Mix_-_PSCo)

<sup>5</sup> For Tri State's coal reliance, see slide 25 in the PPT found at <http://www.tristategt.org/ResourcePlanning/documents/2015%20ERP%20First%20Public%20Meeting%20Combined%20Presentation%20Final.pdf>  
Note that Tri State's purchases from "Basin" (Basin Electric Coop based in Nebraska) are largely generated with coal.





If coal can no longer be mined at a profit, then we must ask how much longer the coal companies will continue to mine coal—and what are the implications for the economy of a state like Colorado that gets a large share of its electricity from coal.

Note that this concern is driven by the geology of coal and the resulting financial condition of the coal companies—not by concerns about carbon dioxide, climate change, water use, toxic emissions, various regulations issued by the Environmental Protection Agency (EPA) or the availability of “cheap” natural gas.

A key misconception underlying this current situation arises because the US Energy Information Administration has been misreporting US coal reserves for many decades and has misled the country into thinking that we had a “200 year” supply of coal. The EIA has begun to acknowledge that what they have been calling coal “reserves” are not reserves, but few in the country have noticed this change.<sup>6</sup>

A careful review of the geology of coal and the financial state of the top US coal companies leads to the conclusion that we have largely depleted coal that can be mined at a profit. If coal can’t be mined at a profit, it is unclear who will continue to mine coal.

Currently the coal plants in Colorado (and in many states) are key to maintaining balanced power flows in the transmission system that is the foundation of the electrical grid.

If coal supply constraints materialize in the coming years, it will not necessarily be adequate to just replace coal capacity with natural gas or renewable capacity at a different location because power flows may not be balanced properly. As a result, each state needs to review their current grid configuration and begin to make plans to ensure grid stability in the coming years and decades.

The most pressing need facing Colorado’s leaders is to begin to examine the adequacy and affordability of future electric supplies and potential threats to the stability of the electrical grid in Colorado (and elsewhere) in light of the non-profitability of the largest US coal companies and the potential for coal supply constraints in the not-too-distant future.

---

<sup>6</sup>Starting with the 2012 Annual Coal Report, the EIA began noting in a footnote to Table 15—in approximately 6 point font—that what the EIA has termed Estimated Recoverable Reserves of coal did not “contain any specific economic feasibility criteria.” The lack of economic analysis was also acknowledged in a 1997 EIA coal reserve update and in a 2009 Wall Street Journal article. Nonetheless, old ideas about the US having a “200 year” supply of cheap coal have persisted despite the numerous signs that we are largely beyond economically profitable coal in the US.



### III. Strengthening Amendments Needed for HB 15-1250 to Ensure Adequate Performance and Consumer Protection

While I appreciate the intentions of Chairman Tyler and the other bill sponsors, it is important for the Legislature to not enter into this next era of electric utility regulation naively.

The PUC regulatory system for the monopoly enterprises known as Investor Owned Utilities (or "IOUs...") is very complex. Whenever you enter a complex situation, it is wise to take the time to understand at least some of that complexity before moving forward.

In general, the Legislature may be hoping to achieve various "performance" goals while the utilities are seeing the \$\$\$ represented by the words "cost recovery." If care is not exercised, the people of Colorado may be providing a lot of "cost recovery" for only minimal "performance."

Colorado's investor-owned utilities, have been able to use their monopoly status to accrue tremendous political, regulatory and financial power over the last century. Any legislation that attempts to address this system must be very carefully crafted to ensure that Colorado residents aren't on the hook for large amounts of "cost recovery" without getting excellent "performance" by the utilities in exchange.

Many of the current electric utility regulatory practices originated in the last century when fossil fuel supplies were plentiful, all of their deleterious effects were not well understood and renewable energy was not cost competitive. All of that has now changed and it is time to review the components of Colorado's current regulatory system that are all too often leading to poor investment decisions for the people of Colorado.<sup>7</sup>

---

<sup>7</sup> Examples of poor investment decisions allowed by the Colorado Public Utilities Commission include:

- Allowing Xcel to spend over \$1 billion on the Comanche 3 project without a thoughtful consideration of whether there will be reasonably priced coal supplies available until the projected retirement date of 2069 for the plant. (See Colorado PUC dockets 04A-214E, 06S-234EG, 08S-520E and 09AL-299E)
- Allowing Xcel to invest over \$400 million in old coal plants at a time when it is clear that coal supplies are likely to become strained and renewable energy costs are dropping dramatically. (See Colorado PUC Docket 14AL-0660E)
- Allowing Xcel to cut off Black Hills leading to large rate increases for both Black Hills and Xcel and the creation of excess natural gas turbine capacity in the state. (See Colorado PUC dockets 11AL-382E and 11AL-947E)
- Approving \$70 million for a new gas peaking turbine that Black Hills acknowledges will likely be operating less than 1% of the time in the first five years and then later failing to approve the acquisition of a 60 MW wind project that was projected to save ratepayers \$113 million over the life of the project. (See Colorado PUC docket 13A-0445E).



Before beginning, I want to acknowledge the fine progress that Xcel Energy in particular has made in integrating wind and solar resources onto their system. This has been a non-trivial undertaking and the entire Xcel team deserves recognition for learning how to operate their system as we increasingly rely on Colorado's abundant wind and solar resources.

I would also like to acknowledge what Xcel has done in the conversion of the North Denver coal plant known as "Cherokee." Over the last several years, Xcel has undertaken the very challenging process of retiring the first three units of the Cherokee coal plant and replacing them with a modern combined cycle facility. This has been done under very site restrained conditions and of course they have had to "keep the lights"—and everything else—on in Denver and throughout their system during this process. I want to particularly acknowledge Xcel Energy's engineering and operations staff that is now close to completing this very delicate operation—with no adverse effects in Denver or elsewhere!! Kudos to those Xcel employees on a job very well done!

Now, examples of current procedures that need to be reviewed to ensure prudent financial decision making for Colorado businesses and residents served by our Investor Owned Utilities. These procedures include:

### **1) Fossil Fuel Cost Pass Through**

Currently the Investor Owned Utilities (i.e. Xcel and Black Hills) bear little or no risk for future fossil fuel costs since these are all passed through to their customers under the Electric Commodity Adjustment ("ECA") mechanism.<sup>8</sup>

Recently, the Colorado PUC approved Xcel's 2013 ECA expenses which totaled over \$980 million with essentially no oversight.<sup>9</sup> Utilities' profits typically increase when they invest in fossil fuel generation assets and yet they bear no risk around rising fossil fuel costs. As a result, the incentive for IOUs to make prudent long-term choices for the good of their ratepayers is severely diminished by the current practice of passing 100% of fossil fuel costs through to their ratepayers.

---

<sup>8</sup> The design of the Electric Commodity Adjustment is different for Xcel and Black Hills, but the outcome is essentially the same. Ratepayers have 100% of the risk for rising fossil fuel costs while the utility has little or no risk. In Xcel's case, the ECA includes both the pass through of fossil fuel (i.e. coal and natural gas) costs as well as several other accounting adjustments. See for example, Colorado PUC docket 14A-0818E.

<sup>9</sup> See Colorado PUC Docket 14A-0818E—Xcel's 2013 ECA Prudence Review. The OCC intervened and then withdrew. Ms. Glustrom's intervention was denied and no other party intervened, so there was essentially no public review of close to \$1 billion of Xcel's 2013 ECA expenditures.



## 2) Discounting of Future Fuel Costs

Both Xcel and Black Hills “discount” future fuel and operating costs at the utility’s “Weighted Average Cost of Capital” (“WACC”)<sup>10</sup> which is typically between 7 and 8%.

Money that earns 7% will double in about a decade.<sup>11</sup> Conversely, future costs that are “discounted” at a rate of 7% will be halved for every decade they are discounted.

Time of Discounting	Rate	Apparent Size of Future Cost at the Discounted Rate
1 decade	7%	1/2
2 Decades	7%	1/4
3 Decades	7%	1/8
4 Decades	7%	1/16

Through the use of discounting, Xcel and Black Hills are modeling future fuel and operating costs at a rate that is much lower than they are likely to actually be, distorting their models in favor of investments in fossil fuel generation.

Investing in fossil fuel generation tends to drive up utility profits while leaving the risk for future fuel and operating costs to ratepayers. Discounting future fuel and operating costs tilts the utilities’ models towards investments that increase profits for the utility, while leaving all the fuel and operating risk for ratepayers.

Importantly, it doesn’t make sense to discount fuel and operating costs at the *utility’s* cost of capital since these costs are borne by ratepayers (not the utility) and most ratepayers are not setting aside money to pay their (or their children and grandchildren’s...) utility bills. Moreover, most people do not make over 7% on their investments. That is a privilege that only utilities and a few others experience.

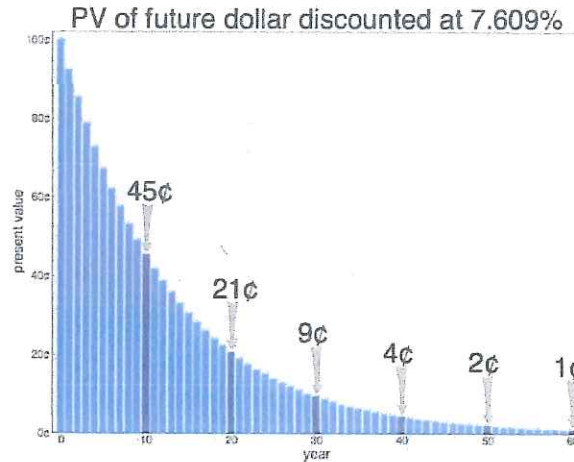
<sup>10</sup> For confirmation that Xcel discounts future fuel and operating costs at their WACC see Discovery Response LWG 5-5 in Colorado PUC docket 11A-869E. For confirmation that Black Hills discounts future fuel and operating costs at their WACC, see Discovery Response SCSC 3-22 in Colorado PUC docket 13A-0445E. These discovery responses are available from Ms. Glustrom.

<sup>11</sup> See for example <http://www.investopedia.com/terms/r/rule-of-70.asp> (Divide 70 by the interest rate to get doubling time. 70 divided by 7 is 10, so at an interest rate of 7%, money will double in about a decade.)





A graph of how discounting at a typical utility discount rate (7.609%) makes future fuel and operating costs look very diminished is below.<sup>12</sup>



### 3) Failure to Recognize the External Costs of Energy Sources

While it is difficult to fully account for the external costs of our energy use, the Colorado PUC is currently making most of its decisions assuming the external costs of fossil fuel investments are \$0. While we could argue over what the external costs of everything from train noise, to mercury emissions, to forest mortality, to increased asthma rates, to water consumption, to climate change are--it is abundantly clear that \$0 is not the right answer.

### 4) Approving Rate Increases Essentially Every Time They Are Requested

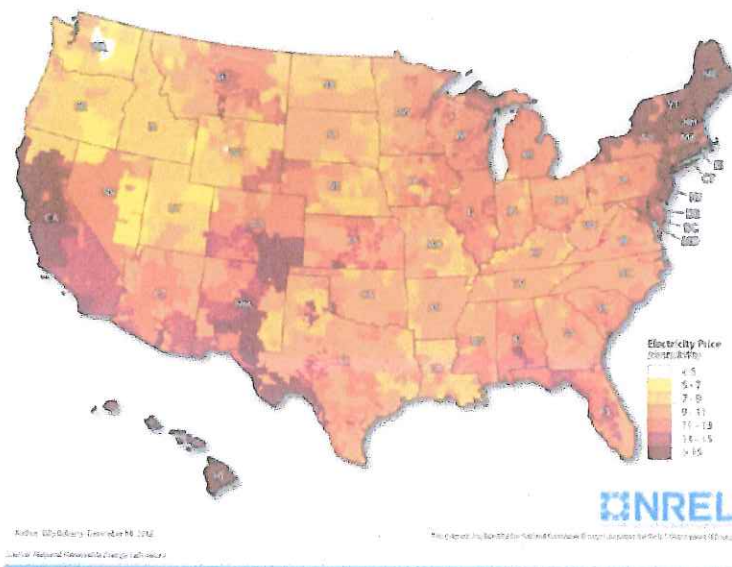
In recent years, Xcel and Black Hills have applied for numerous rate increases<sup>13</sup> and while the PUC typically reduces these requests, some amount of rate increase has always been granted. Indeed, the pattern is often to grant about 60% of what is asked for. Knowing this, the utility can ask for an inflated amount and then have room to “deal” and still get a healthy rate increase. This is a system that works well for the utility and the attorneys that get paid to participate, but it isn’t a great system for ratepayers, our state or the planet.

<sup>12</sup> Graph courtesy of Dr. Zane Selvans, Director of Research and Policy for Clean Energy Action.

<sup>13</sup> For Xcel’s rate increase requests, see Colorado PUC dockets 06S-234EG, 08S-520E, 09AL-299E, 11AL-947E and 14AL-0660E. For Black Hills rate increase request, see Colorado PUC docket 11AL-382E.



As a result of PUC decisions issued over the last decade which have largely been driven by investments in fossil fuel generation, Colorado's electricity rates are now beginning to look more like those of California and the Northeast as shown in the map below from the National Renewable Energy Lab.



In particular, it is important to compare Colorado's rates to Minnesota's since the urban areas of Minnesota are also served by Xcel. It can be seen that Minnesota's rates have generally been staying lower than Colorado's.

Those observing the Colorado and Minnesota PUC processes have noticed distinct differences in the way Xcel's rate increases are handled in the two states and although Minnesota has a bigger electrical system, more employees and more capital investment, over the last decade, Colorado has consistently contributed more to Xcel's Earnings per Share as reported in their financial reports.<sup>14</sup>

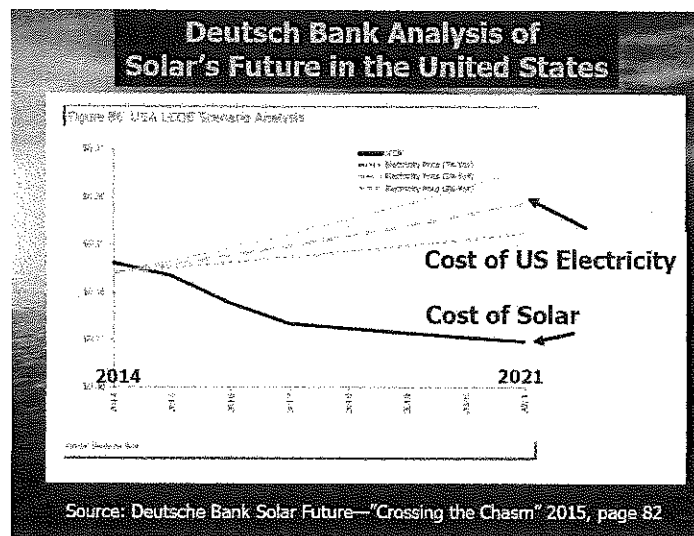
<sup>14</sup> For example, in 2014, PSCo (Xcel in Colorado) contributed 90 cents of Xcel's Earnings per Share, while NSP-Minn (Xcel in Minnesota) only contributed 80 cents to Xcel's Earnings Per Share, despite Xcel in Minnesota having a bigger system, more employees and more capital investment than PSCo. (See page 4, Xcel Energy's 2014 Q4 report, available from Xcel Energy.com under Investor Information.) This pattern of Colorado contributing more to Xcel's Earnings per Share has been consistent since about 2007 and can be tracked in Xcel's quarterly financial reports.



## 5) Setting Rates Using 20<sup>th</sup> Century Concepts:

Utility rate making has become a very complex subject, but underlying the complexity are assumptions that were developed in the last century. It is time to recognize the monumental energy transition that is underway and begin to design rates with 21<sup>st</sup> century realities in mind.

As just one example of the new realities of the 21<sup>st</sup> century, below is a recent Deutsche Bank analysis<sup>15</sup> of the relative costs of US grid electricity and solar over the 2014-2021 time frame. The black line shows the projected declining cost<sup>16</sup> of solar. The colored lines show projected costs of grid electricity. It is clear that assumptions from the last century about the “high” cost of renewable energy are no longer adequate to reflect the new technological and cost realities. As a result, new rate structures and assumptions will be needed as we move forward.



## 6) Ensuring Adequate Transmission

One key to ensuring adequate and affordable electricity for Colorado residents in the 21<sup>st</sup> century will be to ensure that we have adequate transmission to bring wind, solar and other clean energy resources to the load centers. While Colorado made good progress on this front over the last decade (and it has helped Xcel bring on wind

<sup>15</sup> Graph from page 82 of “Crossing the Chasm” by the Deutsche Bank. Available from <https://www.db.com/cr/en/concrete-deutsche-bank-report-solar-grid-parity-in-a-low-oil-price-era.htm?kid=responsibility.inter-ghpen.headline>

<sup>16</sup> LCOE stands for Levelized Cost of Energy as calculated over the life of the solar investment.



resources that have saved their ratepayers many tens of millions of dollars), progress has slowed down and the Legislature should once again ensure that we are taking the steps needed to prepare for the coming energy transition.

#### **7) Allowing Citizens Full Intervention Rights at the PUC**

Throughout the last decade, the PUC recognized that Colorado law provided for citizens to have full intervention rights at the PUC and that they had the right to “be heard in person or by attorney.” (C.R.S. §40-6-109 (1))

In recent years, the Colorado PUC has begun denying citizens (and in some cases other parties) the right to intervene—even though the Legislature has not changed the applicable statutes. Citizens bring a unique and critical perspective to the Commission since they can volunteer their time and analytical talents while others are paying attorneys (often \$300 an hour or more) and experts who need to limit the time they spend on a case in order to keep the cost of intervening at the PUC manageable for their clients.

Citizens that volunteer their time (as I have) are not operating under these cost constraints and can often figure out things that highly paid attorneys and experts don’t have the time to.

### **IV. Conclusion**

The list above details some of the practices that need to be addressed if Colorado residents are to have adequate and affordable supplies of electricity to keep our homes and businesses powered in the 21<sup>st</sup> century.

Unfortunately, the Colorado PUC has not shown a strong willingness to understand and adjust to the facts of this century.

I believe that the Colorado Energy Office, in conjunction with Colorado’s citizens and business and elected leaders, can do a more thoughtful and thorough job of preparing us for the new realities of this century. Consequently, I hope the bill will be amended to direct that this study be conducted by the Colorado Energy Office and not the Public Utilities Commission.

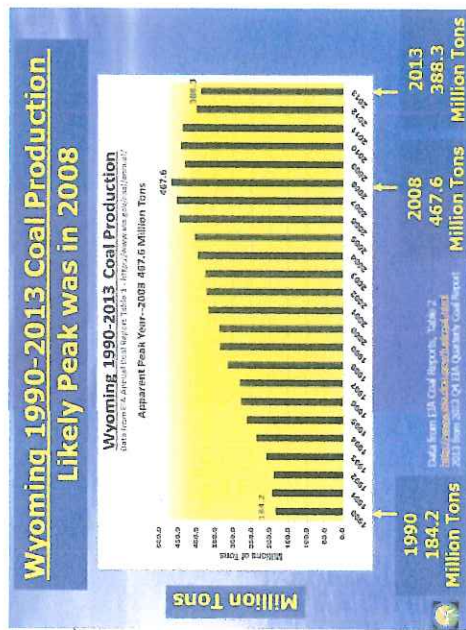
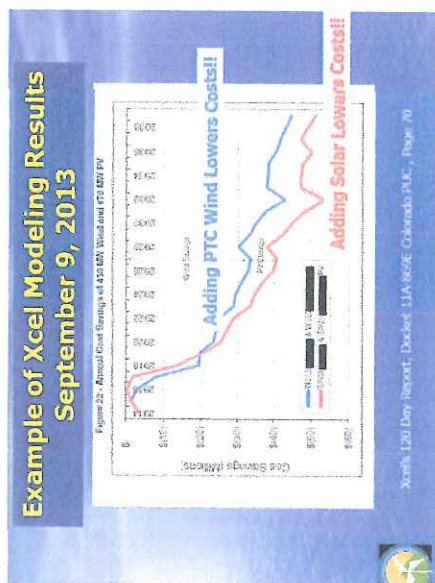
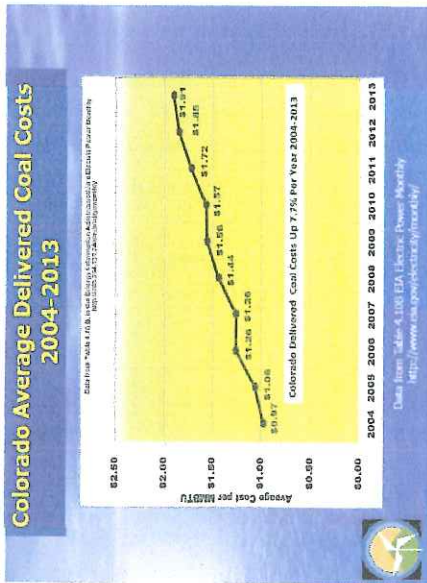
In addition, the bill should be amended to specifically direct the Colorado Energy Office and identified stakeholders to review the practices listed above and provide policy recommendations that will help prepare Colorado for a vibrant economy in this 21<sup>st</sup> century.





V. Additional Information

The following graphics provide additional important information about Colorado's energy situation.

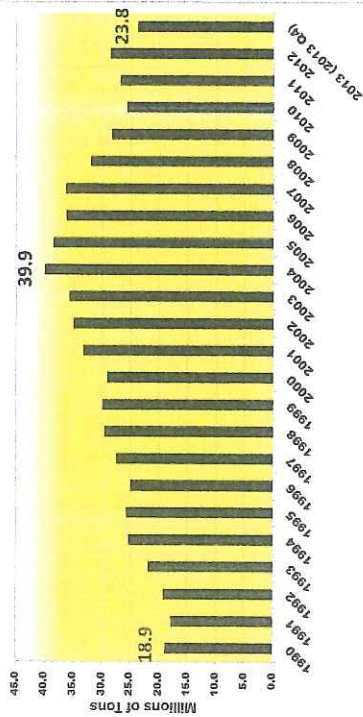




### Colorado 1990-2013 Coal Production

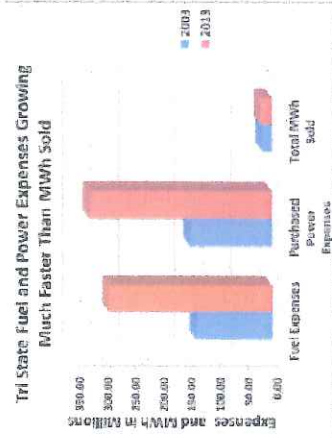
Data from EIA Annual Coal Report Table 1 - <http://www.eia.gov/coal/annual/>  
 2013 data from 2013 Q4 EA Quarterly Coal Report

Apparent Peak Year--2004 39.9 Million Tons



## Tri State Fuel and Power Expenses Increasing Much Faster Than Sales

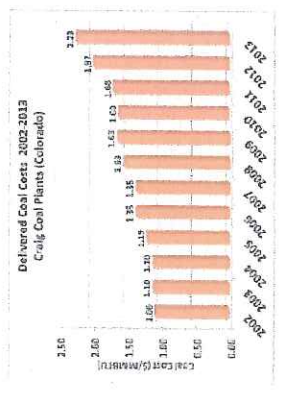
Tri-State Fuel and Power Expenses Growing Much Faster Than MWh Sold  
 2003 v 2013



Data from Tri State Annual Reports Available From <http://www.tristatereg.org/Financials/annual-report.cfm>

### Coal Costs at TSGT Craig Power Plants More Than Double 2003-2013

Coal Cost at Craig Coal Plants Rising Quickly  
 Average Coal Costs Derived from EIA 923 Data



Coal Costs Derived From EIA 923 Database of <http://www.eia.gov/coal/923/>



Attachment A

Year	Modeled Costs			Collection Mechanism			Total Collected from Customers
	Energy Cost without Bid 236-3A (Avoided Costs)	Cost of Bid 236-3A	Difference	Base Rate Costs with Bid 236-3A	RESA Impact (Difference between bid and avoided cost)	Offsetting cost to ECA to reflect accounting entry to RESA	
2015	\$ 1,485,000	\$ 2,202,920	\$ 717,920	\$ 2,202,920	\$ 717,920	\$ (717,920)	\$ 2,202,920
2016	\$ 7,592,000	\$ 11,092,100	\$ 3,500,100	\$ 11,092,100	\$ 3,500,100	\$ (3,500,100)	\$ 11,092,100
2017	\$ 8,582,000	\$ 9,880,460	\$ 1,298,460	\$ 9,880,460	\$ 1,298,460	\$ (1,298,460)	\$ 9,880,460
2018	\$ 9,244,000	\$ 8,376,970	\$ (867,030)	\$ 8,376,970	\$ (867,030)	\$ 867,030	\$ 8,376,970
2019	\$ 9,832,000	\$ 7,321,000	\$ (2,511,000)	\$ 7,321,000	\$ (2,511,000)	\$ 2,511,000	\$ 7,321,000
2020	\$ 10,577,000	\$ 6,521,830	\$ (4,055,170)	\$ 6,521,830	\$ (4,055,170)	\$ 4,055,170	\$ 6,521,830
2021	\$ 11,300,000	\$ 5,791,590	\$ (5,508,410)	\$ 5,791,590	\$ (5,508,410)	\$ 5,508,410	\$ 5,791,590
2022	\$ 11,601,000	\$ 5,284,050	\$ (6,316,950)	\$ 5,284,050	\$ (6,316,950)	\$ 6,316,950	\$ 5,284,050
2023	\$ 12,022,000	\$ 4,962,040	\$ (7,059,960)	\$ 4,962,040	\$ (7,059,960)	\$ 7,059,960	\$ 4,962,040
2024	\$ 12,641,000	\$ 4,625,170	\$ (8,015,830)	\$ 4,625,170	\$ (8,015,830)	\$ 8,015,830	\$ 4,625,170
2025	\$ 13,173,000	\$ 6,239,250	\$ (6,933,750)	\$ 6,239,250	\$ (6,933,750)	\$ 6,933,750	\$ 6,239,250
2026	\$ 13,822,000	\$ 14,008,900	\$ 186,900	\$ 14,008,900	\$ 186,900	\$ (186,900)	\$ 14,008,900
2027	\$ 14,512,000	\$ 13,903,830	\$ (608,170)	\$ 13,903,830	\$ (608,170)	\$ 608,170	\$ 13,903,830
2028	\$ 15,313,000	\$ 13,808,700	\$ (1,504,300)	\$ 13,808,700	\$ (1,504,300)	\$ 1,504,300	\$ 13,808,700
2029	\$ 15,804,000	\$ 13,695,910	\$ (2,108,090)	\$ 13,695,910	\$ (2,108,090)	\$ 2,108,090	\$ 13,695,910
2030	\$ 16,569,000	\$ 13,545,200	\$ (3,023,800)	\$ 13,545,200	\$ (3,023,800)	\$ 3,023,800	\$ 13,545,200
2031	\$ 17,410,000	\$ 13,435,030	\$ (3,974,970)	\$ 13,435,030	\$ (3,974,970)	\$ 3,974,970	\$ 13,435,030
2032	\$ 18,339,000	\$ 13,329,560	\$ (5,009,440)	\$ 13,329,560	\$ (5,009,440)	\$ 5,009,440	\$ 13,329,560
2033	\$ 19,658,000	\$ 13,237,860	\$ (6,420,140)	\$ 13,237,860	\$ (6,420,140)	\$ 6,420,140	\$ 13,237,860
2034	\$ 20,584,000	\$ 13,149,170	\$ (7,434,830)	\$ 13,149,170	\$ (7,434,830)	\$ 7,434,830	\$ 13,149,170
2035	\$ 18,584,000	\$ 13,060,470	\$ (5,523,530)	\$ 13,060,470	\$ (5,523,530)	\$ 5,523,530	\$ 13,060,470
2036	\$ 23,064,000	\$ 12,929,710	\$ (10,134,290)	\$ 12,929,710	\$ (10,134,290)	\$ 10,134,290	\$ 12,929,710
2037	\$ 32,181,000	\$ 12,830,180	\$ (19,350,820)	\$ 12,830,180	\$ (19,350,820)	\$ 19,350,820	\$ 12,830,180
2038	\$ 25,888,000	\$ 12,769,280	\$ (13,118,720)	\$ 12,769,280	\$ (13,118,720)	\$ 13,118,720	\$ 12,769,280
<b>Total Cost/(Savings)</b>	<b>\$ 359,777,000</b>	<b>\$ 246,001,180</b>	<b>\$ (113,775,820)</b>	<b>\$ 246,001,180</b>	<b>\$ (113,775,820)</b>	<b>\$ 113,775,820</b>	<b>\$ 246,001,180</b>

Black Hills is providing this table with the purpose of clarifying understanding. All of the data included in this Table is derived from Confidential Appendix P 236-3A, RES-No RES Evaluation Revised WACC

## Comment Information For

Contact For: 112037

### Contact Comment Information

**Participant:** Mr. Kevin J. Grantham  
200 E. Colfax Ave.  
Denver, CO 80203  
Personal:  
kevin.grantham.senate@state.co.us

**How Received:** WEB

**Comment  
Related To:**

**Comment  
Details:** To Whom It May Concern,

As an elected official with constituents that live in the Black Hills Energy (BHE) electric service area, I am very disappointed in the Colorado Public Utilities Commission (PUC) recent initial decision denying BHEs request to procure 60 MW of renewable energy.

In 2014, a Settlement Agreement was reached between Black Hills Energy (BHE) and the Colorado Public Utilities Commission (PUC) regarding BHE issuing a Request for Proposals (RFP) to procure an additional 60MW of renewable generation. BHE invested significant time and effort and released an RFP in May 2014. They received a total of 49 bids at the end of July 2014 to meet the terms of the Settlement Agreement.

Following procedure, including independent auditing and evaluation of those bids, BHE released its 120 Day Report with three eligible projects and a 60 MW wind project meeting the lowest cost of compliance out of the three. After reviewing the projects and evaluating project merits, BHE, the Office of Consumer Counsel (OCC), and Western Resource Advocates (WRA) all agreed that acquiring the 60 MW wind project would be the most advantageous for the company and its customers. The PUC and its staff disagreed and recommended BHE acquire standalone renewable energy credits (RECs).

I am disappointed with this decision made by the PUC to deny BHEs request to purchase power from, and eventually take ownership of, the wind project.

Although not always the case with renewable projects, this project if approved by the PUC, would actually provide a cost-benefit to BHEs customers. After two years of increased deficit, the project would boost BHEs renewable energy standard (RESA) fund, which could lead to additional renewable investments, both large scale, like the wind farms, and small scale, such as rooftop solar. And those benefits could eventually funnel directly back to BHEs customers, even when the ownership of the wind farm is transferred to BHE.

It is my hope that the PUC will reconsider their decision and allow this wind project to move forward for the benefit of all of BHEs electric customers in my district and in Southern Colorado.

Sincerely,

Senator Kevin J. Grantham