BEFORE THE PUBLIC UTILITIES COMMISSION OF COLORADO

19AL-0268E

IN THE MATTER OF ADVICE NO. 1797-ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO P.U.C. NO. 8—ELECTRIC TARIFF TO IMPLEMENT RATE CHANGES EFFECTIVE ON THIRTY-DAYS NOTICE

ANSWER TESTIMONY OF LESLIE GLUSTROM

SEPTEMBER 17, 2019

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<th>Abbreviation</th>
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<td>CACJA</td>
<td>Clean Air Clean Jobs Act</td>
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<tr>
<td>CCR</td>
<td>Colorado Code of Regulations</td>
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<td>CO2</td>
<td>Carbon Dioxide</td>
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<td>CPCN</td>
<td>Certificate of Public Convenience and Necessity</td>
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<td>CRS</td>
<td>Colorado Revised Statutes</td>
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<td>EAF</td>
<td>Equivalent Availability Factor</td>
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<td>Energy Information Administration</td>
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<td>Earnings Per Share</td>
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<td>ERP</td>
<td>Electric Resource Plan</td>
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<td>Institute for Energy Economics and Financial Analysis</td>
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<td>Intergovernmental Panel on Climate Change</td>
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<td>GHG</td>
<td>Greenhouse Gas</td>
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<tr>
<td>kWh</td>
<td>Kilowatt hour</td>
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<td>LOLP</td>
<td>Loss of Load Probability</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt</td>
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<tr>
<td>MWh</td>
<td>Megawatt hour</td>
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<td>NSP-Minn</td>
<td>Northern States Power of Minnesota</td>
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<td>Operation and Maintenance</td>
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<td>Public Service Company of Colorado</td>
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<td>Public Utilities Commission</td>
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<td>RFP</td>
<td>Request for Proposal</td>
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<td>UCS</td>
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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND DESCRIBE YOUR EDUCATION AND BACKGROUND

A. My name is Leslie Glustom and I am both an Xcel customer and shareholder. Public Service Company of Colorado (“PSCo” or “Xcel”) is my electricity and natural gas provider and I am a significant holder of Xcel stock. I am trained as a chemist and biochemist and I have over 40 years of experience working at the interface of science and society. Most recently I have spent over 15 years at the Colorado PUC working to accelerate the transition to a low-carbon electrical generation system. As part of my work on climate change and clean energy I have conducted a detailed look at the US coal industry. Since this PSCo “rate review” involves spending hundreds of millions of dollars on old coal plants, this grounding in the fundamentals of the US coal industry is very pertinent.

A one-page resume of my non-PUC work is included as attachment LWG-1.

Q. PLEASE DESCRIBE YOUR EXPERIENCE AT THE COLORADO PUC

A. Driven by a profound concern about climate change and a desire to accelerate the adoption of clean, low-carbon solutions, I began participating at the Colorado PUC in 2004. Since 2005, I have been granted intervention in over fifteen Colorado PUC dockets, including:

- 05A-072E Xcel Comanche-Daniels Park Transmission
- 07A-421E Xcel Pawnee Smoky Hill Transmission
- 07A-521E Xcel Interruptible Service Option Credit
- 07A-447E Xcel 2007 Resource Plan
- 07A-469E Xcel Fort St. Vrain Turbines

1 I retire from my work in biochemistry on Friday September 13, 2019 and then am taking a much-needed week of vacation, so this deadline has been challenging to meet. I apologize for any roughness in this Answer Testimony.
In addition, I have been closely involved with and submitted detailed comments in several other proceedings, so my experience includes most of the major PSCo dockets over the last 15 years.

Q. PLEASE DESCRIBE YOUR EXPERTISE ON COAL COST AND SUPPLY ISSUES

A. Since the carbon dioxide (CO2) coming from US coal plants is a large (and until recently was the largest) source of our country’s greenhouse gas emissions, I began over a decade ago to take a very close look at the geology and economics underlying the US coal industry. I quickly learned that the oft-claimed “200 year supply” of US coal was based on a false reporting of US coal reserves by the US Energy Information Administration (“EIA”). Instead of 200 years of economically recoverable coal, the amount of US coal that could be mined at a profit was very likely a small fraction (e.g. about one-tenth) of that.²

A 2009 speech given by Ms. Glustrom in Michigan outlining the situation with US coal supplies is available at https://www.youtube.com/watch?v=t0v3KpmM22
Also, the 2009 and 2013 reports on coal supplies by Ms. Glustrom’s are included as Attachments LWG-9 and LWG-10 to this testimony.
The consequences of this misreporting of the US coal “reserves” is now being seen in the
economic distress and numerous bankruptcies in the US coal industry. Most recently, the fourth
and sixth largest US coal mines (the Eagle Butte and Belle Ayr mines in Wyoming) that used to
be the sole suppliers of PSCo’s largest Colorado coal plants (Pawnee in Brush and Comanche in
Pueblo, respectively) were closed on July 1, 2019 as their owner Blackjewel filed for bankruptcy
and the mines have not opened since.³

The bankruptcies and abrupt closure of large coal mines are very important harbingers of
what is to come in the US coal industry and should play a key role in the PUC’s review of
PSCo’s expenditures on old coal plants as presented in this 19AL-0268E docket.

If coal plants don’t have a long-term supply of coal, then it doesn’t
make a lot of sense to pour tens and hundreds of millions of dollars into
them—dependent of all the arguments about climate change, water use,
mercury emissions and the availability of lower-cost, cleaner alternatives.

II. SUGGESTED APPROACH—START WITH THE LEGAL MANDATES OF THE
PUC

Q. PLEASE DESCRIBE THE PERSPECTIVE YOU HOPE THE COLORADO PUC
WILL ADOPT IN THIS 19AL-0268E DOCKET

A. In the past, the Colorado PUC has begun dockets involving rate increases by looking at the
increase in revenue requirement requested by Xcel and then seeing what amounts could be
“shaved” off of the request. Often the final number ends up being about 60 percent of what Xcel

³ For one of many stories on the Blackjewel bankruptcy filing on July 1, 2019 and the very abrupt closing of the
Eagle Butte and Belle Ayr mines, see https://trib.com/business/energy/two-wyoming-coal-mines-close-send-
workers-home-after-bankruptcy/article_773100d1-b5b4-57d8-af49-842518b9e219.html
asked for—an outcome that Xcel can easily anticipate—just as any child asking for a bigger allowance understands; ask for more than you want and then let your “regulators” (in the child’s case, usually the parents) reduce your request and everyone feels like they did OK in the “deal.”

I am suggesting that it is past time for the Colorado PUC to start not with Xcel’s requested increase in revenue requirement, but rather with a close look at the legal mandates given to the PUC as embodied in the Colorado Revised Statutes (C.R.S.), Chapter 40. In particular, the PUC should:

1) Ensure that rates are “just and reasonable” as called for in C.R.S. § 40-3-101(1)

2) Ensure that facilities promote the public health and safety as called for in C.R.S. § 40-3-101(2)

3) “Correct abuses” as called for in C.R.S. § 40-3-102

4) Give the fullest possible consideration to clean energy and energy efficient technologies as called for in C.R.S. § 40-2-123 (1)(a)

As discussed further below, Xcel had $551 million in after-tax net income from Colorado in 2018, which was an 11.6% increase in after-tax net income from 2017. It is not at all clear that PSCo actually “needs” a rate increase—though of course they want one.

Also, there is a strong argument to be made that rates that lead to over a half-billion dollars in profit after taxes are not rates that are “just and reasonable,” and that given that PSCo customers have been paying for large amounts of excess capacity (on top of the approved reserve margin) that this is an “abuse” that needs to be corrected.
The Colorado statutes also direct the PUC to ensure that facilities protect the public health and safety and that the “fullest possible” consideration be given to clean energy and energy efficient technologies. This proceeding involves the expenditure of hundreds of millions of dollars on fossil fuel burning coal and natural gas/fossil methane plants. These expenditures are most certainly not promoting the public health and safety; they are doing the opposite. Also, the hundreds of millions of dollars that are being poured into fossil fuel generation plants represents money that could be spent on much cleaner, low-carbon, 21st century alternatives—options that are much more in alignment with the laws that the Colorado legislature has passed to direct the workings of the Colorado PUC.4

Excerpts from the statutes cited above are copied for reference below.

➢  **C.R.S. § 40-3-101—Just And Reasonable Rates (Excerpt)**

40-3-101. Reasonable charges - adequate service  (1) All charges made, demanded, or received by any public utility for any rate, fare, product, or commodity furnished or to be furnished or any service rendered or to be rendered shall be just and reasonable. Every unjust or unreasonable charge made, demanded, or received for such rate, fare, product or commodity, or service is prohibited and declared unlawful.

(2) Every public utility shall furnish, provide, and maintain such service, instrumentalities, equipment, and facilities as shall promote the safety, health, comfort, and convenience of its patrons, employees, and the public, and as shall in all respects be adequate, efficient, just, and reasonable.

➢  **C.R.S. 40-3-102—Correct Abuses (Excerpt)**

40-3-102. Regulation of rates - correction of abuses The power and authority is hereby vested in the public utilities commission of the state of Colorado and it is hereby made its duty to adopt all necessary rates, charges, and regulations to govern and regulate

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4 In 2019, the Colorado Legislature passed a suite of laws that direct the Colorado PUC to further reduce reliance on fossil fuels and greatly increase the reliance on renewable energy. Those bills include **SB19-236** as well as several others. It will behoove everyone, including Xcel, for the Commission to start signaling that it intends to take its new mandates to address climate change and reduce reliance on fossil fuels seriously. This means changing old habits about spending large amounts of capital on old coal and natural gas/fossil methane generation.
all rates, charges, and tariffs of every public utility of this state to correct abuses; to
prevent unjust discriminations and extortions in the rates, charges, and tariffs of such
public utilities of this state; to generally supervise and regulate every public utility in this
state; and to do all things, whether specifically designated in articles 1 to 7 of this title or
in addition thereto, which are necessary or convenient in the exercise of such power, and
to enforce the same by the penalties provided in said articles through proper courts
having jurisdiction;

C.R.S. 40-2-123 (1) (a) (2017)—Fullest Possible Consideration to Clean Energy
Technologies

40-2-123. New energy technologies - consideration by commission - incentives -
demonstration projects - definitions - legislative declaration (1) (a) The commission
shall give the fullest possible consideration to the cost-effective implementation of new
clean energy and energy-efficient technologies in its consideration of generation
acquisitions for electric utilities, bearing in mind the beneficial contributions such
technologies make to Colorado's energy security, economic prosperity, insulation from
fuel price increases, and environmental protection, including risk mitigation in areas of
high wildfire risk as designated by the state forest service. The commission shall consider
utility investments in energy efficiency to be an acceptable use of ratepayer moneys.

I am making the “radical” (not really, of course…) suggestion that the Colorado PUC
begin by carefully considering the laws that are intended to govern the Commission and take
those statutory mandates seriously.

III. SUMMARY

Q. PLEASE SUMMARIZE THE KEY POINTS OF YOUR TESTIMONY

A: My testimony makes the following points:

- Xcel is doing more than well in Colorado. It had over half a billion dollars in after-tax net
  income last year after paying for all of its expenses and its stock price has soared in
  recent years. Xcel does not need yet another rate increase in Colorado. It has received
  numerous rate increases since 2006, totaling over $500 million in additional annual
income in recent years. Between 2013 and 2018, Xcel’s Colorado electric retail sales went up only 1.6% while Xcel’s Colorado after-tax net income went up 21%.

- Xcel’s Colorado customers have been paying for significant amounts of excess capacity (on top of the 16.3% approved reserve margin) and they have been paying large amounts for fossil fuel resources that are either obsolete (i.e. coal) or will likely soon be obsolete (i.e. natural gas). These are abuses that need to be corrected and Xcel’s Colorado customers need to have their rates adjusted downward—not upward!

- Xcel was told over and over again not to invest in coal resources as climate change was extremely serious, coal supplies were likely to become constrained in the not-too-distant future and the prices of renewable and demand side resources were falling rapidly and would likely soon be below those of fossil fuel resources. Yet Xcel has proceeded to spend hundreds of millions of dollars on their coal generation and now they want their Colorado customers to provide “return of and return on” those expenditures and provide 10.35% return on equity for those expenditures. Based on what Xcel knew or should have known, those expenditures (including the Clean Air Clean Jobs (CACJ) expenditures) were imprudent and significant amounts should be disallowed and/or the return on those expenditures should be reduced to the cost of debt—or at the very least to something well below 9%.

- A CPCN (Certificate of Public Convenience and Necessity) is a presumption of prudence—not a guarantee. It is up to Xcel to operate their utility with their eyes wide open—just as a driver with a green light still needs to proceed with caution if the intersection is not clear. Given the information in the attachments to this Answer Testimony that Xcel should have known (either because it was their own analysis or
because it was submitted to the PUC as part of a PSCo docket) it should not have proceeded with the CACJ expenditures as it was clear they were not prudent.

- The Rush Creek wind farm cost about twice as much (i.e. $29/MWh) as it should have (i.e. something under $15/MWh) and Xcel undoubtedly knew this once it received the bids in response to the Request for Proposals (RFP) in the 2016 Electric Resource Plan (Docket 16A-0386E) in late November 2017. Xcel proceeded to spend over $400 million on the Rush Creek wind farm without taking any apparent efforts to reduce the price. About half of what Xcel spent after it received the 2016 ERP bids, or $200 million should be disallowed along with a stern warning to Xcel not to “gold plate” the renewable resources it is acquiring.

- Capital expenditures on old fossil fuel generation are often a case of putting “good money after bad.” The Commission should make it clear to Xcel that future capital expenditures on generation that is already obsolete (i.e. coal ) or will likely soon be obsolete (i.e. natural gas/fossil methane) will not be assumed to be prudent unless there is a clear showing that the fossil fuel plant is essential for reliability. The return on capital expenditures made since 2014 should be reduced to the cost of debt, or at the very least to something well below 9%.

- Operation and Maintenance (O&M) expenditures for fossil fuel generation (including over $100 million spent on coal and natural gas/fossil methane generation by Xcel in Colorado in 2018) should no longer presumed to be prudent. The Commission should send a clear message to Xcel that it should not make large O&M expenditures on its fossil fuel fleet unless a resource is essential for reliability and that Xcel should make an annual filing with the Commission detailing O&M expenses for its fossil fuel fleet for the
coming year and receive Commission approval for those expenses as being essential for reliability to avoid making imprudent expenditures on generation that is already obsolete (i.e. coal) or will likely soon be obsolete (i.e. natural gas/fossil methane).

- The Commission should take a hard look at the Tax Cut and Jobs Act accounting as Xcel paid over $130 million less in taxes in 2018 as it did in 2017 but only provided its Colorado customers with a $42 million credit.

- The Commission should take a hard look at the Comanche 3 plant which has had both very low Equivalent Availability Factor and capacity factor ratings in recent years. It does not make sense for Xcel’s Colorado customers to pay Xcel large returns on (e.g. close to $70 million a year) for a plant that is very unreliable and much more carbon intensive than the abundant low-cost wind, solar and storage bids that Xcel received in 2017. It is past time that both Xcel and its customers were put “out of their misery” for this billion dollar mistake.

**IV. BACKGROUND INFORMATION**

Q. PLEASE DESCRIBE THE BACKGROUND INFORMATION YOU WOULD LIKE THE COMMISSION AND OTHER PARTIES TO CONSIDER AND EXPLAIN WHY THIS INFORMATION IS IMPORTANT TO THIS RATE CASE DOCKET

A. I would like the Commission and other parties to consider the following facts which are presented in outline information below with supporting data in the attachments to this Answer Testimony.
A. Xcel Had Over $551 Million in After Tax Net Income in Colorado in 2018

As can be seen in Figure 1 below, PSCo had $551.7 million in after tax net income in 2018 (after paying all of its expenses)—an 11.6\%\textsuperscript{5} increase from its 2017 after-tax net income of $494.1 million. While this “bottom line” is for all of PSCo (not just electric), it is a strong indication that PSCo is doing well and with about 74\%\textsuperscript{6} of its revenue in 2018 coming from electricity, it doesn’t appear that PSCo is in need of yet more revenue from its electric customers. Indeed, there is a strong argument that rates that lead to over a half billion dollars in net income are not “just and reasonable” and that the “abuse” of taking over $550 million more from Colorado rate payers than is needed to meet expenses should be corrected as called for in C.R.S. § 40-3-102; otherwise the Commission is not doing its regulatory duty to protect customers from Xcel’s monopoly power since we can’t protest charges that are excessive by going to buy our electrons somewhere else.

While Xcel likes to talk about the $4 billion it has spent in recent years, it doesn’t mention that it has also had numerous increases in revenue granted by the Colorado PUC as discussed in the next subsection. Also, as discussed later in Ms. Glustrom’s Answer Testimony, a lot of the money spent by Xcel has not been spent wisely as it has been spent on old coal and natural gas/fossil methane generation instead of low-carbon, free-fuel, low-cost 21\textsuperscript{st} century generation and demand side options.

\textsuperscript{5} (2018 After Tax Net Income/2017 After Tax Net Income) -1) x 100 = ($551.7M/$494.1 M) -1) x 100 = 11.66 \%
(Amounts in millions = “M”)

\textsuperscript{6}(Electric Revenues/Total Revenues) x 100= ($3,031 M/$4,086 M ) x 100 = 74\%.
(Amounts in millions = “M”)

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**Figure 1**

**PSCo 2018 Consolidated Statement of Income**

*From PSCo 2018 10-K Annual Report (Attachment LWG-2), Page 22*

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<th>2016</th>
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<td><strong>Operating revenues</strong></td>
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<tr>
<td>Electric</td>
<td>$3,031.2</td>
<td>$3,003.8</td>
<td>$3,049.4</td>
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<td>Natural gas</td>
<td>1,014.6</td>
<td>966.2</td>
<td>957.7</td>
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<td>Steam and other</td>
<td>40.4</td>
<td>43.5</td>
<td>46.7</td>
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<td><strong>Total operating revenues</strong></td>
<td>4,086.2</td>
<td>4,042.5</td>
<td>4,047.8</td>
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<td><strong>Operating expenses</strong></td>
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<tr>
<td>Electric fuel and purchased power</td>
<td>1,167.2</td>
<td>1,126.7</td>
<td>1,196.4</td>
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<td>Cost of natural gas sold and transported</td>
<td>428.4</td>
<td>458.7</td>
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<td>Cost of sales — steam and other</td>
<td>15.3</td>
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<td>Operating and maintenance expenses</td>
<td>757.5</td>
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<td>Demand side management program expenses</td>
<td>142.2</td>
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<td>Depreciation and amortization</td>
<td>561.1</td>
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<td>443.5</td>
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<td>Taxes (other than income taxes)</td>
<td>201.9</td>
<td>195.7</td>
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<td><strong>Total operating expenses</strong></td>
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<td>3,152.5</td>
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<tr>
<td><strong>Operating income</strong></td>
<td>792.6</td>
<td>880.0</td>
<td>892.3</td>
</tr>
<tr>
<td>Other income, net</td>
<td>2.1</td>
<td>7.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Allowance for funds used during construction — equity</td>
<td>56.4</td>
<td>29.8</td>
<td>18.6</td>
</tr>
<tr>
<td><strong>Interest charges and financing costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest charges — includes other financing costs of $6.5, $6.3 and $6.3, respectively</td>
<td>207.9</td>
<td>190.7</td>
<td>181.6</td>
</tr>
<tr>
<td>Allowance for funds used during construction — debt</td>
<td>(22.2)</td>
<td>(11.4)</td>
<td>(7.0)</td>
</tr>
<tr>
<td><strong>Total interest charges and financing costs</strong></td>
<td>185.7</td>
<td>179.3</td>
<td>174.6</td>
</tr>
<tr>
<td><strong>Income before income taxes</strong></td>
<td>665.4</td>
<td>746.3</td>
<td>737.4</td>
</tr>
<tr>
<td>Income taxes</td>
<td>113.7</td>
<td>252.2</td>
<td>273.9</td>
</tr>
<tr>
<td><strong>Net income</strong></td>
<td>$551.7</td>
<td>$494.1</td>
<td>$463.5</td>
</tr>
</tbody>
</table>

See Notes to Consolidated Financial Statements.
B. PSCo Has Had Numerous Rate Increases Since the Turn of the Century, Increasing Its Revenue by Over $500 Million Per Year

As can be seen in Table 1, while PSCo has been spending a lot of money over the last decade, they have also been receiving a lot of rate increases—totaling over $500 million since 2006.

Table LWG-1
Base Rate Revenue Increases Granted to PSCo Since 2006
Data from the Decision Numbers Provided for Each Docket

<table>
<thead>
<tr>
<th>Colorado PUC Docket</th>
<th>Year Xcel Rate Increase Went Into Effect</th>
<th>Colorado PUC Decision</th>
<th>Annual Increase in Base Rate Revenue for Xcel</th>
</tr>
</thead>
<tbody>
<tr>
<td>06S-234EG</td>
<td>2007</td>
<td>C06-1379</td>
<td>$107 million per year</td>
</tr>
<tr>
<td>08S-520E</td>
<td>2009</td>
<td>C09-0595</td>
<td>$112 million per year</td>
</tr>
<tr>
<td>09AL-299E</td>
<td>2010</td>
<td>C09-1446</td>
<td>$128 million per year</td>
</tr>
<tr>
<td>11AL-947E</td>
<td>2012</td>
<td>C12-0494</td>
<td>$73 million per year</td>
</tr>
<tr>
<td>11AL-947E</td>
<td>2013</td>
<td>C12-0494</td>
<td>$16 million per year</td>
</tr>
<tr>
<td>11AL-947E</td>
<td>2014</td>
<td>C12-0494</td>
<td>$25 million per year</td>
</tr>
<tr>
<td>14AL-0660E</td>
<td>2015</td>
<td>C15-0292</td>
<td>$41.5 million</td>
</tr>
<tr>
<td><strong>TOTAL 2007-2015</strong></td>
<td></td>
<td></td>
<td><strong>$502.5 million per year</strong></td>
</tr>
</tbody>
</table>
C. PSCo After-Tax Profits Are Soaring Despite Basically Flat Sales and Peak Capacity

From Table LWG-1 below, it can be seen that PSCo’s peak capacity and retail sales have been essentially flat over the last several years while after-tax profits have gone up over 20%. It isn’t at all clear that PSCo actually needs a rate increase—they are doing more than well from a profit perspective. Now it is (past) time for the Commission to correct the abuses that have led to PSCo taking over half a billion dollars out of the pockets of its Colorado customers to pad its after-tax bottom line.

<table>
<thead>
<tr>
<th>Table LWG-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCo’s System Size, Retail Electricity Sales and After-Tax Net Income 2013-2018⁷</td>
</tr>
<tr>
<td>Data from PSCo’s 2018 and 2015 10-K Annual Reports (Attachments LWG-2 and LWG-3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PSCo Peak Demand (MW)</td>
<td>Page 6, 2015 and 2018 PSCo 10-K⁸</td>
<td>6,678</td>
<td>6,152</td>
<td>6,284</td>
<td>6,585</td>
<td>6,671</td>
<td>6,718</td>
</tr>
<tr>
<td>PSCo Retail Electric Sales (Millions of kWh)</td>
<td>Page 11, 2015 PSCo 10-K and Page 5, 2018 PSCo 10-K</td>
<td>28,861</td>
<td>28,671</td>
<td>28,700</td>
<td>28,801</td>
<td>28,626</td>
<td>29,247</td>
</tr>
<tr>
<td>PSCo After-Tax Net Income</td>
<td>Page 34, 2015 PSCo 10-K and Page 22, 2018 10-K</td>
<td>$453.4 Million</td>
<td>$455.2 Million</td>
<td>$466.8 Million</td>
<td>$463.5 Million</td>
<td>$494.1 Million</td>
<td>$551.7 Million</td>
</tr>
</tbody>
</table>


⁸ The 2016 peak capacity in MW came from the 2017 PSCo 10-K as the 2018 10-K diverged from the previously standard practice of reporting three years of data.
D. Xcel Share Price Has Also Soared In Recent Years

Figure LWG-2 is the five year chart of Xcel’s stock price from Reuter’s. Again, there does not appear to be any reason to be concerned about Xcel’s financial condition as Xcel’s stock price has soared over the last 5 years, more than doubling from $31.27 on September 8, 2014 to $64.80 on September 2, 2019.

Since Xcel’s financial situation is more than robust, it is past time to correct the “abuse” that is leading to Xcel taking over a half billion dollars from its Colorado customers beyond what is needed to cover its expenses. Many Xcel ratepayers struggle to pay their bills; it is past time to consider their needs.

Figure LWG-2
Xcel’s Stock Price Sept 2014-Sept 2019
From Reuters https://www.reuters.com/companies/XEL.OQ/charts

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9 As in every rate case, there are numerous letters in the record of this 19AL-0268E proceeding asking the Commission to protect them from Xcel’s seemingly endless rate increases. Most individuals are not able to do more than write a letter or email to the Commission—which is actually a significant undertaking given that it takes no small amount of effort to understand the PUC webpage and comment system. It is only the PUC that can help correct the “abuses” that have plagued these customers while Xcel’s profits and stock price have soared.
Figure LWG-3 below, taken from Xcel’s 2018 10-K Annual Report (page 25) also underscores that Xcel is doing more than fine financially. PSCo doesn’t need another rate increase, but PSCo’s customers need to have their rates adjusted downward to correct the “abuses” that have occurred over the last dozen years and to create rates that are “just and reasonable.”

**Figure LWG-3**

**Xcel’s Five Year Cumulative Returns Compared to the Edison Electric Investor Owned Electrics and Standard and Poors 500**


*COMPARISON OF FIVE YEAR CUMULATIVE TOTAL RETURN*

Xcel Energy Inc., the EEI Investor-Owned Electrics and the Standard & Poor’s 500
E. PSCo Contributes More to Xcel’s Earnings Per Share Than Xcel’s Minnesota Utility (NSP-Minn), Despite NSP-Minnesota Having a Larger System Size\textsuperscript{10}

As shown in Table LWG-3 below, Xcel’s operating utility in Minnesota—Northern States Power of Minnesota (NSP-Minn) has a system that is 25-30% bigger than PSCo’s. Yet, PSCo has quite consistently (except 2016) contributed more to Xcel’s Earnings Per Share ("EPS") than NSP-Minnesota as shown in Table LWG-4 below.\textsuperscript{11} This is one indication that the regulators in Minnesota have held a “firmer hand on the reins” than has the Colorado PUC and another indication that it is time for the Colorado PUC to reject PSCo’s request for more revenue and instead correct the “abuses” that have led to this situation.

\textbf{Table LWG-3}
\textbf{Comparison of NSP-Minnesota and PSCo (Colorado) Peak Demand 2013-2018}
\textit{Data from Annual Xcel 10-K Reports}

\begin{tabular}{|l|c|c|c|c|c|c|}
\hline
Peak Demand\textsuperscript{12} & 2013 & 2014 & 2015 & 2016 & 2017 & 2018 \\
\hline
NSP-Minnesota (MW) & 9,524 & 8,848 & 8,621 & 9,002 & 8,546 & 8,927 \\
\hline
PSCo (Colorado) (MW) & 6,678 & 6,152 & 6,284 & 6,585 & 6,671 & 6,718 \\
\hline
Ratio PSCo/NSP-Minn & 0.70 & 0.695 & 0.73 & 0.73 & 0.78 & 0.75 \\
\hline
\end{tabular}

\textsuperscript{10} A review of Xcel’s Annual 10-K reports will also demonstrate that NSP-Minnesota also has more employees and generally larger capital expenditures than PSCo (Colorado).

\textsuperscript{11} A review of Xcel’s Annual 10-K report will show that PSCo’s contribution to Earnings Per Share ("EPS") has generally been greater than NSP-Minnesota’s since 2007 and the start of PSCo’s back-to-back rate increases as shown in Table LWG-1.

\textsuperscript{12} Peak demand for PSCo and NSP-Minn from Xcel Annual 10-K’s (page 11, 2018 Xcel 10-K, page 10, 2015 Xcel 10-K, page 9, 2016 Xcel 10-K)
Table LWG-4
PSCo (Colorado) v NSP-Minn (Minnesota) Contributions to Xcel’s Earnings Per Share
2013-2018
Data from PSCo 2018 and 2015 10-K’s and NSP-Minn 10-Ks Available from
http://investors.xcelenergy.com/CustomPage/Index?KeyGenPage=1073751307

<table>
<thead>
<tr>
<th>Earnings Per Share (EPS)</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSP-Minnesota</td>
<td>$0.79</td>
<td>$0.80</td>
<td>$0.85</td>
<td>$0.96</td>
<td>$0.96</td>
<td>$0.96</td>
</tr>
<tr>
<td>PSCo (Colorado)</td>
<td>$0.91</td>
<td>$0.90</td>
<td>$0.92</td>
<td>$0.91</td>
<td>$0.97</td>
<td>$1.08</td>
</tr>
<tr>
<td>EPS Ratio PSCo/NSP-Minn</td>
<td>1.15</td>
<td>1.125</td>
<td>1.08</td>
<td>0.94</td>
<td>1.01</td>
<td>1.125</td>
</tr>
</tbody>
</table>

F. PSCo Has Had Hundreds of MW of Excess Capacity (Above the Approved Reserve Margin) for Most Years in the Last Decade—Ratepayers Should Not Be Responsible for Paying For This Excess Capacity

As detailed in Attachment LWG-5 (Discovery Response LWG1-1, Docket 19AL-0268E) and reproduced in Table LWG-5 below, PSCo has generally had several hundred MW of excess capacity—on top of the 16.3% (approximately 1000 MW) approved reserve margin. The average excess capacity (on top of the approved reserve margin for 2014-2018 is 451 MW.

Capacity is expensive (in the neighborhood of $1 million/MW) and this excess capacity on top of the approved reserve margin is bloating PSCo’s rate base—especially when it is considered that PSCo earns over 7% on its rate base. For every $1 billion of rate base, PSCo is earning over $70 million a year as “return on” the rate base. So, PSCo’s long term practice of having more capacity than the 16.3% approved reserve margin is also an “abuse” that needs to be

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14 PSCo’s CurrentWeighted Average Cost of Capital is 7.55% (See page 2-181, “AKJ-2” Volume of PSCo’s 2016 Electric Resource Plan, Docket 16A-0396E).
corrected as PSCo’s customers shouldn’t be responsible for paying both “return of” and “return on” excess capacity that is not part of the PUC approved reserve margin.¹⁵

PSCo’s propensity for having significant excess capacity on top of its approved reserve margin can also be seen in the results of the 2016 Electric Resource Plan with a planned 19.3% reserve margin in the year 2023.¹⁶

<table>
<thead>
<tr>
<th>Table LWG-5</th>
<th>Approved, Actual and Excess Reserve Margins for PSCo 2009-2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data from Attachment LWG-5--19AL-0268E Discovery Response LWG 1-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Planning Reserve Margin (MW)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excess Capacity (MW) (Above the Approved Planning Reserve Margin)</td>
<td>682</td>
<td>875</td>
<td>368</td>
<td>354</td>
<td>88</td>
<td>736</td>
<td>655</td>
<td>384</td>
<td>348</td>
<td>132</td>
</tr>
</tbody>
</table>

It is also very likely that customers would have lower bills if the Commission forced PSCo to manage the peak with demand response and other demand-side measures rather than

¹⁵ PSCo has not done a recent study to assess whether it still needs a 16.3% reserve margin and with the evolution of storage technologies, it is likely that the 16.3% reserve margin could be reduced. The “current” Loss of Load Probability (LOLP) study for PSCo (which is used to determine the size of the reserve margin) was filed with the 2016 Electric Resource Plan. It is dated 2008 and so does not reflect any of the recent advances in storage or prediction and management of wind and solar generation or the ability to manage demand with low-cost demand management techniques. (For PSCo’s “current” LOLP study, see page 373 of 398 in “AKJ-2” (Volume 2 of PSCo’s 2016 Electric Resource Plan), Docket 16A-0396E.)

¹⁶ See Appendix B (pages 1 and 2), PSCo’s 120 Day Report in Docket 16A-0396E with reference to Portfolio 6, the “Colorado Energy Plan.”
acquiring generation to meet the peak demand which, by definition, only occurs for a few hours of the year.

**G. PSCo’s Fuel Mix in Colorado in 2018 was 73% Fossil Fuel—40% Coal and 33% Natural Gas—This is Most Definitely Not Promoting the Health and Safety of the Public as Called for By Colorado Statute**

As can be seen from Figure LWG-4 below, Xcel’s Colorado fuel mix in 2018 was 40% coal and 33% natural gas—or 73% fossil fuel.

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**Figure LWG-4**

*PSCo 2018 Fuel Mix Over 70% Fossil Fuel*

*From Page 6, 2018 PSCo 10-K, Attachment LWG-2*

The impacts of fossil fuel production and combustion are extremely well documented and it is clear that PSCo’s system is not protecting the safety and health of the public (or the planet) as required by C.R.S. §40-3-101 (2).
C.R.S. §40-3-101 (2) Every public utility shall furnish, provide, and maintain such service, instrumentalities, equipment, and facilities as shall promote the safety, health, comfort, and convenience of its patrons, employees, and the public, and as shall in all respects be adequate, efficient, just, and reasonable.

With the availability of thousands of MW of low-cost wind, solar and storage projects in Colorado that are just waiting to be developed (see Figure LWG-6A below), it is past time that the PUC took a hard look at the hundreds of millions of dollars included in this rate case which has been spent to support PSCo’s aging fossil fuel infrastructure. We have low-cost alternatives; it is time to invest in those—not in maintaining an unhealthful and expensive fossil fuel generation system.

H. Xcel Projects PSCo’s 2027 Fuel Mix to Still Be 46% Fossil Fuel in 2027

While Xcel has stated their intention to reduce their carbon emissions 80% by 2030, the projected fuel mix for Colorado in 2027 is still 46% fossil fuel (24% coal, 22% natural gas) as shown in Figure LWG-5 below. Historically, Colorado has been the most carbon intensive region on Xcel’s system.

[Rest of page left intentionally blank.]

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17 Attachment LWG-7 is Xcel’s 2019 Carbon Report stating their intentions to reduce their carbon emissions 80% below 2005 levels on a company-wide basis.
I. There are Thousands of MW of Low-Cost Wind, Solar and Storage Projects Ready to Be Developed in Colorado

Importantly, PSCo has literally thousands of MW of low-cost carbon free resources available for development in Colorado at costs lower than the costs of operating PSCo’s fossil fuel generation fleet. The table below summarizes the bids received by PSCo in the 16A-0396E 2016 Electric Resource Plan Docket, as updated in March 2018.

[Rest of page left intentionally blank.]

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In the table above, there are over 50,000 MW of wind, solar and storage bids and even if:

a) we eliminate all of the bids above the median price, and

b) eliminate half of the bids below the median price on the chance that they are not “solid” (an extreme assumption, but to make the point),

then there are still approximately 10,000 MW of wind, solar and storage bids available at an average cost well below $30/MWh or 3 cents/kwh. The sooner these projects (and others like them) get built, the sooner ratepayers will start saving money as the operating costs for much of PSCo’s fossil fuel system is generally 3 cents/kwh and above, as shown below.
The current operating costs (only) of Xcel’s Colorado fleet as calculated by the Office of Consumer Counsel and included in Attachment LWG-28 are given in Figure LWG-6B below.

**Figure LWG-6B**

Operating Costs (Only) of Xcel’s Colorado Fleet

Data from Attachment LWG-28, OCC Discovery 10-11 (Docket 19AL-0268E)

<table>
<thead>
<tr>
<th>Plant</th>
<th>Kind of Plant</th>
<th>Capacity</th>
<th>Generation</th>
<th>Factor</th>
<th>Cost per kWh</th>
<th>Form 1 Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comanche</td>
<td>Coal Steam</td>
<td>1,160</td>
<td>7,860,923,000</td>
<td>77.4%</td>
<td>$0.0223</td>
<td>$175,203,147</td>
</tr>
<tr>
<td>Pawnee</td>
<td>Coal Steam</td>
<td>505</td>
<td>3,276,672,000</td>
<td>74.1%</td>
<td>$0.0226</td>
<td>$73,928,948</td>
</tr>
<tr>
<td>Cherokee 5,6 &amp; 7</td>
<td>Combined Cycle</td>
<td>576</td>
<td>2,762,509,000</td>
<td>54.7%</td>
<td>$0.0319</td>
<td>$88,058,446</td>
</tr>
<tr>
<td>Ft. St. Vrain 1-4</td>
<td>Combined Cycle</td>
<td>680</td>
<td>3,510,936,000</td>
<td>58.9%</td>
<td>$0.0320</td>
<td>$112,378,898</td>
</tr>
<tr>
<td>Rocky Mountain</td>
<td>Combined Cycle</td>
<td>580</td>
<td>2,334,625,000</td>
<td>45.9%</td>
<td>$0.0340</td>
<td>$79,344,960</td>
</tr>
<tr>
<td>Craig 1 &amp; 2</td>
<td>Coal Steam</td>
<td>82</td>
<td>464,946,000</td>
<td>64.7%</td>
<td>$0.0341</td>
<td>$15,865,772</td>
</tr>
<tr>
<td><strong>Hayden</strong></td>
<td>Coal Steam</td>
<td><strong>233</strong></td>
<td><strong>1,220,776,000</strong></td>
<td>59.8%</td>
<td><strong>$0.0373</strong></td>
<td><strong>$45,575,430</strong></td>
</tr>
<tr>
<td>Blue Spruce</td>
<td>Combustion Turbine</td>
<td>264</td>
<td>222,065,000</td>
<td>9.6%</td>
<td>$0.0463</td>
<td>$10,277,534</td>
</tr>
<tr>
<td>Ft. St. Vrain 5-6</td>
<td>Combustion Turbine</td>
<td>288</td>
<td>47,467,000</td>
<td>1.9%</td>
<td>$0.0529</td>
<td>$2,509,861</td>
</tr>
<tr>
<td>Cherokee 4</td>
<td>Gas Steam</td>
<td>308</td>
<td>1,126,211,000</td>
<td>41.7%</td>
<td>$0.0534</td>
<td>$60,090,872</td>
</tr>
<tr>
<td>Alamosa</td>
<td>Combustion Turbine</td>
<td>26</td>
<td>8,836,000</td>
<td>3.9%</td>
<td>$0.1202</td>
<td>$1,062,064</td>
</tr>
<tr>
<td>Furita</td>
<td>Combustion Turbine</td>
<td>14</td>
<td>256,000</td>
<td>0.2%</td>
<td>$0.2119</td>
<td>$54,256</td>
</tr>
<tr>
<td>Valmont 6</td>
<td>Combustion Turbine</td>
<td>43</td>
<td>1,912,000</td>
<td>0.5%</td>
<td>$0.2215</td>
<td>$423,533</td>
</tr>
<tr>
<td>Fort Lupton</td>
<td>Combustion Turbine</td>
<td>88</td>
<td>2,708,000</td>
<td>0.4%</td>
<td>$0.2262</td>
<td>$612,539</td>
</tr>
<tr>
<td><strong>Total Owned</strong></td>
<td></td>
<td><strong>4,847</strong></td>
<td><strong>22,840,842,000</strong></td>
<td>53.8%</td>
<td><strong>$0.0291</strong></td>
<td><strong>$665,386,260</strong></td>
</tr>
</tbody>
</table>

Given the availability of thousands of MW of low-cost wind, solar and storage resources ready to go in Colorado, it is important that the Commission give very close scrutiny to the hundreds of millions of dollars included in this rate case that have been or will be spent maintaining aging coal and natural gas plants. This is part of the Commission’s statutory mandates including those given to the PUC to ensure that rates are “just and reasonable” (C.R.S. §40-3-101(1)), to correct abuses (C.R.S. §40-3-102), to give “the fullest possible consideration to
clean energy and energy efficient technologies” (C.R.S. §40-2-123 (1)) and to “do all things” which are “necessary and convenient” (C.R.S. §40-3-102) to regulate PSCo’s monopoly power.20 In short, it is past time for the PUC to start taking a hard look at PSCo’s very large capital and operating expenses related to their fossil fuel generation fleet and to ensure that PSCo customers aren’t paying to maintain old fossil fuel resources when that money could very likely be better invested in fuel-free clean power resources that will better serve PSCo customers and Colorado as we move through the 21st century.

1. The Climate Crisis is Here and Extremely Serious

It is now widely recognized that emitting carbon dioxide and other greenhouse gases (GHGs) increases their levels in the atmosphere and oceans, contributing to the warming of the planet, the acidification of the oceans, the disruption of the climate and the occurrence of extreme weather.21 Almost every week there is another story about hurricanes, fires, floods, droughts and weather that seasoned observers “have never seen before.”

Importantly, the scientific consensus on climate change was clear for many, many years before PSCo decided to spend hundreds of millions of dollars on old coal and natural gas/fossil methane plants and then ask to put those expenditures into their rate base and receive “return of and return on” those expenditures. In this docket, PSCo is asking to earn 10.25% return on their additions to rate base.22 It is hard to understand how Xcel can have the gall to ask to earn a profit

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20 In addition to the statutory mandates that have existed for years (and some for many decades), the PUC was given numerous new statutory mandates in the 2019 legislative session that support reducing reliance on coal and natural gas for electric generation, including the mandates give in SB19-236.
21 For summaries of opinion polls on climate change, see https://climatecommunication.yale.edu/.
22 For the request to earn 10.25% on additions to rate base, including large expenditures on coal plants, see the Direct Testimony of PSCo witness Brooke Trammell, (e.g. page 148, line 13).
of over 10% on expenditures that are accelerating the unraveling of the climate of the only planet we know of that supports life.

As evidence that the scientific consensus on climate change was clear long before Xcel decided to spend hundreds of millions of dollars on old fossil fuel plants, Attachment LWG-6 is the 2001 Intergovernmental Panel on Climate Change Climate Change Synthesis Report—Summary for Policy Makers. Figure LWG-7, below is the final graphic in the report showing the expected dramatic expected increase in temperature of the planet during this century. While there are many scientific uncertainties related to predicting exactly how warm the planet will get and how severe the consequences will be, there is clear consensus that the planet will be warming—a lot—and the consequences will be very severe. Many of these consequences are now becoming apparent—even to former climate sceptics. Importantly, none of the scenarios shown in LWG-7 project a cooling—or even a stabilization—of the earth’s temperature.

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23 As of now, the very voluminous scientific trail of reports of the warming caused by carbon dioxide goes back to 1856 when Eunice Foote showed how much hotter a container of air got when it contained CO2 (then called carbonic acid gas) than when it contained “common” air. The journal in which these results were published is at https://archive.org/stream/mobot31753002152491#page/381/mode/2up. The paper from Eunice Foote is on pages 382-383. An excerpt is copied below showing how much hotter the container with CO2 got than the container with “common” air.

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24 The IPCC has issued numerous reports on the science of climate change and they are available for free download from https://www.ipcc.ch/reports/. They all document the seriousness of what is now commonly known as the climate crisis with reports dating to the 1990 First Assessment, which can be downloaded from https://www.ipcc.ch/report/climate-change-the-ipcc-1990-and-1992-assessments/

25 The famous Republican pollster, Frank Luntz, who helped craft many messages for the climate sceptics has recently “gotten religion” and acknowledged that he was wrong….https://grist.org/article/the-gops-most-famous-messaging-strategist-calls-for-climate-action/
If the graph in Figure LWG-7 was the projected report for the temperature gauge on an Xcel truck, any employee that didn’t respond immediately would probably not have a job for long and they certainly wouldn’t be in line for a promotion—yet Xcel’s top management at the time ignored this clear warning about the fate of our planet and then proceeded to spend very
large sums of money on coal plants in Colorado after the release of this 2001 IPCC report—and all the other warnings about the seriousness of the climate crisis that were available.

This rate case involves the expenditures of hundreds of millions of dollars in capital and operating expenses for Xcel’s Colorado fossil fuel plants and given what Xcel either knew or should have known, this was imprudent—and unconscionable. The fact that Xcel was able to convince the PUC to approve these expenditures is just a sign of how broken Colorado’s regulatory system was. Now it is time for this Commission to correct these abuses as called for in C.R.S. §40-3-102.

K. Coal Supply Issues Are Intensifying and Could Easily Become Critical in the Coming Decade

There is a simple fact that the Colorado PUC, its staff and most of the parties have failed to understand. This simple fact is that you need a supply of coal to operate a coal plant. Importantly, given what is now abundantly clear about the US coal industry, we can’t assume that just because PSCo has the concrete and steel that makes up a coal plant, that it will have a supply of fuel to operate that plant until its stated retirement date.

Attachments LWG-9 and LWG-10 detail the geology and financial situation of the US coal industry from the time when Xcel was making the decision to spend over $300 million on the Pawnee and Hayden coal plants. The predictions made in these reports related to the declining economic viability of the US coal industry have been borne out in a dramatic fashion with the top three US coal companies (Peabody, Arch and Alpha Natural) all declaring

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26 For more information on what US utilities knew about climate change starting in 1968, see Attachment LWG-8, the Energy and Policy Institute report “Utilities Knew” report from 2017—“Documenting Electric Utilities’ Early Knowledge and Deception on Climate Change from 1968-2017.”
bankruptcy in 2015 and 2016\textsuperscript{27} and numerous smaller coal companies also declaring 
bankruptcy.\textsuperscript{28} Yet, Xcel continues to pour money into its Colorado coal plants while asking to 
earn 10.25\% on the equity portion of those expenditures, showing no apparent awareness of what 
is very likely the structural decline of the US coal industry.

The fundamental issue affecting the US coal industry is that the US coal that can be 
easily accessed and mined at a profit is largely gone. The remaining coal is harder to access and 
the cost to access the coal is too high to allow for reasonable (or in some cases, any) profit 
margins. When production costs rise while there is pressure from alternatives that keep prices 
from rising in parallel, profit margins thin and eventually go away—all concepts that were 
detailed in the reports in Attachments LWG-9 and LWG-10 that have previously been submitted 
to the Colorado PUC in proceedings related to PSCo’s plans for coal expenditures.

Figure LWG-8, below, shows how US coal consumption has dropped off quite dramatically 
since the peak in 2008.

\textsuperscript{27} Alpha Natural Filed for Bankruptcy August 2015  
\url{https://www.forbes.com/sites/nathanvardi/2015/08/03/u-s-coal-company-alpha-natural-resources-files-for-bankruptcy/#24f529ce4379}  
Peabody filed for bankruptcy April 2016  
Arch filed for bankruptcy Jan 2016  
\url{https://www.reuters.com/article/us-arch-coal-restructuring-idUSKCN0UP0MR20160111}  
\textsuperscript{28} For a 2015 report on the structural decline in the US coal industry, see \url{https://www.carbontracker.org/reports/the-us-coal-crash/}
In recent months there have been three more dramatic coal company bankruptcies affecting the Powder River Basin in Wyoming which supplies the coal to the Pawnee coal plant in Brush and the Comanche coal plants in Pueblo.

29 Westmoreland filed for bankruptcy in October 2018 https://westmoreland.com/restructuring/
In addition, as reported by S&P Global on September 10, 2019 and copied in part below, the EIA issued a 2019 coal production update significantly cutting projections for coal production and consumption for 2019 and future years.

The EIA expects the share of U.S. generation from coal will average just 25% in 2019 and 22% in 2020, down from 28% in 2018. As coal generation drops, natural gas and renewable energy resources are expected to gain a larger share of total generation.

Coal consumption in the U.S. is expected to total 593.4 million tons in 2019 and 548.4 million tons in 2020, a decline from 687.3 million tons in 2018. Meanwhile, the export markets for coal is expected to weaken going forward as higher freight costs and uncertainty in metallurgical coal markets dampen international demand for coal.

The EIA projects Central Appalachia coal production will fall from 200.1 million tons of in 2018 to 183.0 million tons in 2019 before falling even further to 151.1 million tons in 2020. Western coal production is expected to drop off from 418.3 million tons in 2018 to 363.6 million tons in 2019 before falling to 338.6 million tons in 2020. Coal from the Interior of the U.S. is expected to decline from 137.1 million tons to 127.4 million tons between last year and 2019, but then remains roughly level at 127.7 million tons of production in 2020, according to the EIA forecast.

Figure LWG-9, below, shows the top Powder River Basin coal mines and producers.

Importantly, all of these top producers have either been through or are in bankruptcy—a sign that the economics of coal is—shall we say—very challenged. These geologic and financial challenges were clearly detailed in Attachments LWG-9 and LWG-10—both of which have previously been submitted to the Colorado PUC in several proceedings involving Xcel.
More than 40% of coal produced in the United States comes from 16 mines in the Powder River Basin (PRB), a mining region primarily located in northeast Wyoming and southeast Montana. Four companies collectively own more than half of those PRB mines, and those 10 mines produced 87% of the Basin’s coal in 2018. Two of those companies, Cloud Peak and Blackjewel, filed bankruptcy this year. The two other companies, Peabody and Arch Coal, are proposing a joint venture that involves some of the PRB mines.

Figure LWG-10, below, shows #1 US coal producer, Peabody Energy’s stock price from April 2017 to September 2019. This does not appear to bode well for Peabody Energy (who already went through bankruptcy in 2016)—and it also doesn’t bode well for any utility that is assuming that “someone” will produce coal to keep their coal plants running until 2070—Xcel currently is doing in Colorado.

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30 Attachment LWG-11 is the EIA’s Table 9 for 2017 (the most recent year available) showing actual production from the top US coal mines including those shown in Figure LWG-9. EIA Table 9 for 2017 can be found at https://www.eia.gov/coal/annual/pdf/table9.pdf
31 Xcel’s current retirement date for the Comanche 3 coal plant in Pueblo is 2070 as documented in “AKJ-2” in Docket 16A-0396E.
Figure LWG-10
Stock Price for Peabody Energy (“BTU”) April 2014-April 2017
From https://www.reuters.com/companies/BTU.N/charts

As discussed further below, this rate case involves the expenditure of hundreds of millions of dollars on Xcel’s Colorado coal plants. There are a host of environmental and economic reasons to oppose pouring money into old coal plants, but perhaps the most fundamental reason is the rapid collapse of the U.S. coal industry.

The easily accessible coal in the United States has already been mined and turned into CO2 which is now in the atmosphere and the oceans. While the future is always, by definition, unknown, there is good reason to believe that U.S. coal is unlikely to be available in large quantities at a reasonable price in the 2030s and beyond—and the substantial collapse of the US coal industry could come well before that.

It is long past time that the Colorado PUC (both Commissioners and Staff) took a hard look at the facts that have been before it for many years and stopped assuming that it is “just and
reasonable” to have ratepayers pay for hundreds of millions of dollars of expenditures on generation assets that are—or are rapidly becoming—obsolete and therefore “stranded.”

We have made very large mistakes in Colorado as a result of not understanding these basic facts about the dominant fuel on Xcel’s Colorado system (i.e. coal) and it is long past time that these abuses were corrected as required by C.R.S. §40-3-102.

It is “abusive” to continually force Xcel’s customers to pay “return of and return on” for expenditures on obsolete—and polluting—generation—especially when thousands of MW of low-cost, cleaner generation and demand side options exist.

It is especially “abusive” to force ratepayers to pay 9-10% return\textsuperscript{32} on the equity portions of these ill-advised expenditures by Xcel in Colorado. It is long past time that the Colorado PUC woke up to this situation and corrected it—quickly!

V. FIND CACJ EXPENDITURES ON PAWNEE AND HAYDEN IMPRUDENT AND REDUCE RETURN ON ANY ALLOWED EXPENDITURES TO THE COST OF DEBT

Q. PLEASE DESCRIBE YOUR POSITION ON PSCO’S REQUEST TO TRANSFER RECOVERY OF CLEAN AIR CLEAN JOBS EXPENDITURES INTO RATE BASE.

A. As discussed above and below, Xcel should have known that moving ahead with the Clean Air Clean Jobs (“CACJ”) expenditures on the Pawnee and Hayden coal plants was not prudent. The Commission should send a clear message to Xcel that it should have known better and that it must move forward in the 21\textsuperscript{st} century with its eyes wide open—even if it has been granted a CPCN. Xcel is the “driver” of PSCo and it needs to drive a lot more prudently than it has been.

\textsuperscript{32} For example, see the Direct Testimony of PSCo witness Brooke Trammell, page 148, lines 9-13.
Possible actions for the Commission to take with respect to the CACJ expenditures on the Pawnee and Hayden coal plants include:

a) Disallowing all (or a significant amount) of the CACJ expenditures in order to send a strong message to Xcel to “drive” more carefully.

b) Disallowing the increase cost of the Pawnee pollution controls above the cost projected in Proceeding 11A-325E.

c) Reducing the return on equity for any of the allowed expenditures made on Pawnee and Hayden under the CACJ to the cost of debt—or at the very least, to something well below 9%.

d) Sending a strong message to Xcel that expenditures on old coal plants will no longer be assumed to be necessary and will receive very serious scrutiny going forward.

Table LWG-6 below shows the amounts of CACJ expenditures that Xcel is asking to transfer to rate base in this proceeding.

<table>
<thead>
<tr>
<th>Gross Plant in-Service</th>
<th>Total Company</th>
<th>Retail Allocation</th>
<th>Retail Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherokee 2X1CC</td>
<td>$583,883,318</td>
<td>91.18%</td>
<td>$532,381,691</td>
</tr>
<tr>
<td>Pawnee SCR</td>
<td>$288,880,540</td>
<td>91.18%</td>
<td>$263,399,733</td>
</tr>
<tr>
<td>Hayden Unit 1</td>
<td>$49,218,732</td>
<td>91.18%</td>
<td>$44,877,377</td>
</tr>
<tr>
<td>Hayden Unit 2</td>
<td>$27,420,812</td>
<td>91.18%</td>
<td>$25,002,150</td>
</tr>
<tr>
<td>Total CACJ</td>
<td>$949,403,402</td>
<td></td>
<td>$865,660,951</td>
</tr>
</tbody>
</table>

**Table LWG-6**

**Clean Air Clean Job Expenditures that Xcel is Asking to Transfer to Rate Base**

*From Discovery Response LWG2-2, Docket 19AL-0268E*
For the reasons discussed in this testimony, Xcel’s Colorado customers should not be responsible for paying the full cost plus 9-10% return on equity for the expenditures on the Pawnee and Hayden coal plants.  

Given what Xcel knew or should have known, the expenditures on Pawnee and Hayden were not prudent and this testimony and attachments are being submitted in this proceeding in accordance with the statutory requirements to ensure that rates are “just and reasonable” (C.R.S. § 40-3-101(1)) and that “abuses” are corrected (C.R.S. §40-3-102) and in accordance with PUC Rule 3617(d) (4 C.C.R. 723-3) which is copied below.

As provided for in PUC Rule 3617 (d) (I) (B, Xcel knew or should have known that the expenditures they were going to make on the Pawnee and Hayden plants were not prudent given the seriousness of the climate crisis and the compelling reasons to reduce emissions of carbon dioxide, the strong questions about coal supplies and the likelihood that low-carbon wind and solar resources would soon be lower cost than Xcel’s fossil fuel fleet. This information was

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33 It is possible that the expenditures on the Cherokee 2 x 1 combined cycle coal plant will also become obsolete before they are fully depreciated, but I am not challenging these expenditures as I believe they were as prudent as they could be at the time—though it would be nice to have responsibly sourced natural gas to run those turbines.
provided to the Commission by myself and many others starting in 2005—long before the CACJ expenditures were undertaken. Detailed information was submitted in Dockets 04A-214E, 06S-34EG, 07A-447E, 08S-520E, 09AL-299E, 10M-245E, 11A-325E, 11A-869E and 11A-917E—
all of which occurred before Xcel undertook the large investments in the Pawnee and Hayden coal plants.

The following attachments to this 19AL-0268E testimony provide a few of the many examples of information that was available to Xcel underscoring the need to take climate change, coal supplies and the declining cost of renewable energy seriously and not to proceed with large investments in coal plants.

LWG-13—Docket 07A-447E April 2008 Comments of Professor James White on Climate Science

LWG-14—Docket 07A-447E April 2008 Comments of Dr. Juerg Schmidli on Climate Science

LWG-15—Docket 07A-447E April 2008 Testimony of Dr. Kevin Trenberth on Climate Science

LWG-16—07A-447E Answer Testimony of Leslie Glustrom

LWG-17—08S-520E Answer Testimony of Leslie Glustrom

LWG-18—10M-245E Glustrom Application for RRR of C10-1328

34 Refer to Ms. Glustrom’s testimony and attachments in these dockets. Additional information was submitted by other parties and by the hundreds of Xcel customers who testified in the public hearings held in these proceedings.
Clearly Xcel has been told time and again that expenditures on coal would not be prudent and it had abundant evidence that the declining costs of renewable energy would soon make low carbon generation lower cost than fossil fuel generation. It is past time that the Colorado PUC stopped making Xcel’s customers pay “full freight” on Xcel’s ill-advised expenditures like the CACJ expenditures on Pawnee and Hayden. These expenditures were spent on coal plants that added more carbon dioxide to the atmosphere and oceans leaving a planet whose climate and ecosystems will become increasingly unstable—and in many regions, unlivable...while it was clear that lower-cost and cleaner alternatives were just “on the horizon.” (See Attachments LWG 13-21).

Below is an excerpt of page 1 of LWG-15, Dr. Kevin Trenberth’s April 2008 Answer Testimony in Docket 07A-447E describing Dr. Trenberth’s impeccable credentials. In addition, there were several other climate scientists35 who submitted Answer Testimony in the 07A-447E docket, describing the seriousness of climate change—and this was, of course, long before Xcel moved forward with very large expenditures intended to keep the Pawnee and Hayden coal plants running.

35 Other internationally recognized climate scientists who submitted Answer Testimony in Docket 07A-447E include Dr. Pieter Tans and Dr. Mark Serreze.
An unwillingness to read the facts that were presented to them many times and ignoring the facts displayed by their own analyses, leading to a stance of willful ignorance, is not a prudent way to “drive” a utility. Xcel either knew or should have known that large expenditures on coal plants were imprudent—and they knew it (or should have known it) many, many years before choosing to make large investments in the Pawnee and Hayden coal plants.

A Certificate of Public Convenience and Necessity provides a presumption of prudence, but it is not a guarantee—any more than a green light is a guarantee of prudence that it is OK to proceed forward if there are pedestrians in the cross walk. It is up to the “driver” of the vehicle or the utility to use their best judgment so as not to injure anyone.
Given what Xcel knew or should have known long before proceeding with the CACJ expenditures on Pawnee and Hayden, it was not prudent to spend several hundred million dollars on old coal plants as emissions of carbon dioxide (and mercury and all the other pollutants that come from coal plants) would indeed injure (and kill) thousands of people and the cost of operating the coal plants would soon exceed the costs of generation from cleaner sources. The failure of Xcel to heed these warning is most assuredly not something that should be rewarded with full cost recovery and a 9-10% return on equity!

Here is how one commentator\textsuperscript{36} described it

Asset stranding results when assets have suffered from unanticipated or premature write-downs, devaluations or conversion to liabilities. The first point to note is that nothing about climate change is unanticipated, and climate policy action is certainly not premature, but on the contrary fully predictable and overdue. \textbf{Thus, there are no stranded assets in fossil energy companies caused by climate policy or the shift to green energy; any write-downs are the consequence of bad investment decisions and unjustified valuations, investments made in willful ignorance of the true costs and risks.} (Emphasis added.)

As yet further evidence that Xcel knew many years ago that there were significant risks related to climate change and emissions of CO2, below are some excerpts related to climate risks from PSCo’s 2010 10-K.\textsuperscript{37}

\textsuperscript{36} Quote taken from R. Andreas Kramer, a Senior Fellow at the Institute for Advanced Sustainability Studies in Potsdam, Germany. The full commentary is available here.
\textsuperscript{37} Available from http://investors.xcelenergy.com/SEC-Filings
From Table LWG-6, above, it can be seen that Xcel’s expenditures on the Pawnee plant at issue here are over $288 million (with about $263 million being requested to add to PSCo’s rate base.) In docket 11A-325E (Pawnee CACJ Emission Controls) PSCo estimated that the Pawnee pollution controls would “only” cost $236.5 million as seen in paragraph 20 from Colorado PUC decision C12-0159E, reproduced below, along with the paragraphs from that
same decision that discuss the burden of proof that PSCo bears to demonstrate the prudence of its expenditures on the Pawnee coal plant.38

The Commission should review this increase in costs for the Pawnee CACJ expenditures and the requirements of Decision C12-0159E (as well as Decision R12-0593, paragraphs 78-80 in Docket 11A-917E related to Hayden) carefully as part of its deliberations in this 19AL-0268E docket.

**From Colorado PUC Decision C12-0159E, Docket 11A-325E**

1. Public Service

   20. Public Service estimates the costs of the SCR and LSD at Pawnee to be $236.5 million in Docket No. 10M-245E. Public Service also includes the additional costs of the sorbent injection controls at Pawnee in its analysis of the total estimated cost and rate impacts of the Company’s entire emission reduction plan pursuant to the CACJA.

[Rest of page left intentionally blank.]

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38 Similar language regarding PSCo’s burden of proof exists in the decision granting the Hayden CPCN from Docket 11A-917E, Decision R12-0593, paragraphs 78-80.
Accordingly, the presumption of prudence that flows from the granting of the CPCN does not obviate the requirement that Public Service present robust Direct Testimony that will enable the Commission to determine what portion of the actual costs incurred are properly chargeable to ratepayers.

40. Public Service fully carries the burden of proof that the Company acted in a prudent manner in constructing the facility. The general presumption of prudence that attaches to the CPCN is rebuttable. Hence, an intervenor challenging the construction costs may make a *prima facie* showing through Answer Testimony that the Company acted in some imprudent manner. Although such a prudence challenge is generally necessary for some amount of the actual costs incurred to be disallowed, fair and efficient rate case proceedings require that the Company not wait until the development and filing of Rebuttal Testimony in order to carry its burden of proof.

41. We find that the record in this proceeding does not support the establishment of a prospective, not-to-exceed maximum level of expenditures for the Pawnee project. Similarly, by this Order, we are making no findings or conclusions as to whether the cost estimate that Public Service has provided in this proceeding is the appropriate starting point against which the prudence of actual costs may be tested. We will also decline to require Public Service to submit semianual reporting of progress as to milestones, budget, and deviations from budget.

Xcel’s decision to proceed with the CACJ expenditures, given what it knew or should have known, was not prudent. Xcel’s Colorado customers should not have to pay for that imprudent decision—and Xcel should certainly not be earning 9-10% on the equity portion of the expenditure.
VI. DISALLOW 50% OF 2018 RUSH CREEK EXPENDITURES—TOO EXPENSIVE AND NOT PRUDENT

Q. PLEASE DESCRIBE YOUR POSITION ON THE RUSH CREEK WIND FARM EXPENDITURES

A. I am a strong proponent of using carbon-free electrical generation sources like wind farms, but the Rush Creek Wind Farm was too expensive and Xcel knew it for sure by late 2017—but does not appear to have taken any steps to address the high cost of the Rush Creek project.

A significant amount of the Rush Creek expenditures in late 2017 and 2018 should be disallowed as Xcel’s customers should not be required to pay significantly more for resources than is needed in order to keep rates “just and reasonable.”

From page 6 of PSCo’s 2018 10-K, (Attachment LWG-2) it is clear that the cost of the Rush Creek wind farm is about $29/MWh with the pertinent excerpt copied below.

Excerpt from PSCo 2018 10-K, Page 6 (Attachment LWG-2)

- Rush Creek became operational in December 2018. The 2019 average cost per MWh is expected to be $29.

In late November 2017, Xcel received the bids it received in response to the Request for Proposals (RFP) issued as part of the 2016 Electric Resource Plan, Docket 16A-0396E. The 30-Day Report from PSCo on these bids is Attachment LWG-22. The median price (i.e. half the bids are lower in cost) for the bids is summarized on page 10 of 12 of PSCo’s 30-Day Report and it can be seen that there are thousands of MW of wind, solar and wind/solar/storage projects bidding in under $29/MWh. At that point in time, Xcel should have taken active steps to reduce

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39 The final wind bids that PSCo accepted were between $11 and $18/MWh as stated in the 120-Day Report for Docket 16A-0396E, (bottom of page 50, top of page 51.)
the costs of the Rush Creek Wind Farm because it was clear (as many of us had predicted previously) that the $29/MWh, while perhaps a good price in 2013, was much too high for a wind farm that would go into service in 2018 with wind costs falling dramatically.

Attachment LWG-23 shows PSCo’s expenditures on the Rush Creek Wind Farm by month and year including:

**Expenditures on Rush Creek Production (Not Including Transmission)**

*From Attachment LWG-23, CPUC Discovery Response 1-5 (19AL-0268E)*

- $46.3 million in December 2017
- $359.3 million in 2018

So Xcel continued to spend over $400 million dollars on the Rush Creek wind farm after it unequivocally knew that wind prices had dropped dramatically and it was paying much too much for the Rush Creek wind farm.

Ratepayers should not be expected to pay for “gold plated” wind farms like the Rush Creek wind farm. Consequently, a significant amount of the expenditures made in December 2017 and throughout 2018 should be disallowed. I am suggesting that since the Rush Creek wind farm cost about twice as much as it should have, that the PUC disallow $200 million or approximately one half of the Rush Creek expenditures (detailed in Attachment LWG-23) made in December 2017 and throughout 2018.

Xcel could have easily known earlier than November 2017 that it was paying too much for the Rush Creek wind farm, so only disallowing $200 million is actually not a very steep price to pay for Xcel having proceeded cavalierly even after it knew it was paying way too much for the Rush Creek wind farm.
In general, the Commission needs to send a strong message to Xcel that it needs to stop going to the Commission and claiming that it needs to “rush, rush” to get the Rush Creek wind farm or some other generation outside of the standard bidding process. Ratepayers have already paid for way too much of this in the last decade\(^\text{40}\) and the PUC should make it clear that it will not take it lightly when Xcel abuses the bidding process so that it can own a resource that is significantly more expensive than it almost certainly would have been if it had been put out for bid.

**VII. REDUCE RETURN ON CAP EX ON FOSSIL FUEL RESOURCES TO 4% AND REQUIRE ESSENTIAL RELIABILITY ANALYSES IN THE FUTURE BEFORE SPENDING MORE THAN $1 MILLION ON A FOSSIL FUEL PLANT**

Q. PLEASE DESCRIBE YOUR RECOMMENDATION ON THE TREATMENT OF CAPITAL EXPENDITURES ON EXISTING COAL AND NATURAL GAS/FOSSIL METHANE GENERATION

A. Xcel has known for many years that wind and solar generation and demand-side measures could save ratepayers money. Once that became clear, Xcel should have begun taking a hard look at the hundreds of millions it was spending most years on maintaining its fossil fuel fleet and start phasing out that generation as quickly as possible so as to avoid throwing “good money after bad.”

With respect to Capital Expenditures on fossil fuel generation (e.g. see Xcel Witness Kyle Williams testimony and exhibits KIW-1 and KIW-2), the Commission should consider all of the following:

\(^{40}\) Large PSCo-owned resources that have not been put out to bid in the last decade include the Comanche 3 coal plant, the Cherokee combined cycle plant, the Fort St. Vrain 5 and 6 turbines and the Rush Creek wind farm.
1) Disallowing a percentage of the capital expenditures made on coal and natural gas generation after 2014.

2) Reducing the return on these capital expenditures to the cost of debt—or at least to something well below 9%.

3) Sending a strong message that capital expenditures made on fossil fuel generation will be receiving close scrutiny going forward and without a detailed analysis of why any particular capital expenditure is **essential** for system reliability, capital expenditures on fossil fuel generation will carry a presumption of **imprudence**.

Figure LWG-11, below is from Xcel’s 2011 120 Day Report (Docket 11A-869E) submitted to the PUC in September 2013 showing how adding wind and solar to Xcel’s Colorado system will save money. Once Xcel knew this, they should have accelerated plans to phase out their fossil fuel generators—not pour hundreds of millions of dollars of capital expenditures into them as documented in the testimony and exhibits of Xcel witness Kyle Williams.

[Rest of page left intentionally blank.]
While it has been clear for a long time that coal will soon be obsolete, it is also likely that natural gas will also become obsolete with a growing number of media reports\textsuperscript{41} of natural gas being replaced with solar and storage and detailed analyses warning about investments in natural gas. While the Colorado PUC failed to heed the warnings about coal, they can now avoid making the same mistake with respect to natural gas.

Attachment LWG-25 is the 2015 report “Natural Gas Gamble” from the Union of Concerned Scientists. Attachment LWG-26 is the recent report from Rocky Mountain Institute warning that natural gas generation will soon be obsolete. Attachment LWG-27 is the recent

\textsuperscript{41} See for example https://www.latimes.com/environment/story/2019-09-10/ladwp-votes-on-eland-solar-contract
And
report from the Institute for Energy Economics and Financial Analysis documenting the financial challenges facing the natural gas fracking industry.

I am desperately hoping that the Colorado PUC does not ignore all the warning signs about natural gas the way they did about coal. Xcel’s Colorado customers have already paid way too much for fossil fuel expenditures that are or will be stranded. This is an “abuse” that should be corrected in accordance with C.R.S. §40-2-103.

VIII. REQUIRE REPORTS OF EXPENSES BY PLANT AND BY YEAR—PUT PSCo ON NOTICE THAT FOSSIL FUEL EXPENSES WILL NO LONGER BE AUTOMATICALLY APPROVED

Q. PLEASE DESCRIBE YOUR POSITION ON OPERATION AND MAINTENANCE EXPENSES FOR FOSSIL FUEL GENERATION.

A. As described in detail throughout this testimony and in the attachments, money spent on fossil fuel assets is very likely misspent as it is literally going “up the smokestack.” Instead Xcel should be taking a very hard look at its fossil fuel fleet and not spending any significant amounts of money on these resources that are already obsolete (coal) or soon will be (natural gas/fossil methane.) Only if a resource is shown to be essential for reliability should it be maintained. Otherwise it is past time to let these aging resources die a peaceful death and instead spend the money on much cleaner supply and demand side solutions that will keep Colorado powered in the 21st century.

The operating and maintenance expenses for Xcel’s assets is found in KIW-3 and KIW-4, with a break down by fuel type provided in response to LWG13-48 in this 19AL-0268E proceeding, as copied below.
DISCOVERY REQUEST LWG13-48:

With respect to KIW-3 and KIW-4, and the $143,513,331.75 in PSCo 2018 O&M costs, is it possible to provide a breakdown of these expenses by generation fuel type—e.g. coal, natural gas, hydro, other? If so, please provide such an overall breakdown. Thank you.

RESPONSE:

Please see the Table below.

<table>
<thead>
<tr>
<th>Generation Fuel Type</th>
<th>Sum of 2018 PSCo Electric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>72,288,950.52</td>
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<tr>
<td>Gas</td>
<td>44,430,917.16</td>
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<td>Hydro</td>
<td>5,241,698.87</td>
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<tr>
<td>Wind</td>
<td>2,218,436.22</td>
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<tr>
<td>Support Organizations</td>
<td>19,242,687.52</td>
</tr>
<tr>
<td>Decommissioned Plant Expense</td>
<td>90,641.46</td>
</tr>
<tr>
<td>Grand Total</td>
<td>143,513,331.75</td>
</tr>
</tbody>
</table>

Sponsor: Kyle I. Williams                Response Date: August 30, 2019

From discovery response LWG13-48 (Docket 19AL-0268E) copied above, it can be seen that over $100 million dollars was spent by PSCo on last century’s resources—$72 million on coal and $44 million on natural gas.

The Commission should send a very clear signal to Xcel that these expenses will no longer be presumed to be prudent unless there is a strong showing that they were essential for reliability—and that the analysis includes an accounting for the social cost of carbon and other external costs accompanying the production and use of fossil fuels.

To help Xcel determine what expenses will and won’t be seen as prudent, the Commission should require an annual forecast of operating and maintenance expenses by fossil fuel plant with a justification for why this fossil fuel generation is essential for reliability in the coming year. To do otherwise would require Xcel’s Colorado customers to pay for expenses that
are not just and reasonable given the availability of thousands of MW of wind, solar and storage options below 3 cents/kwh as shown in Figure LWG-6A, above.

A Visual Summary….

This testimony has been full of facts and figures, but if you have made it this far, it is time to reward you with an image to help summarize what is going on.

I am very grateful for the stated intention of Xcel to reduce their carbon emissions, but it is long past time that the Commission made sure that the expenditures that Xcel is making in Colorado (and that it is asking for its customers to pay for…) are in line with both the statutory mandates governing the PUC (including giving the “fullest possible” consideration of clean energy technologies as called for in C.R.S. §40-2-123(1)) and in line with Xcel’s stated intentions. Otherwise, Xcel is just doing a variation on the old refrigerator magnet joke…

Whenever I say the word “diet,”
(or in Xcel’s case “carbon reduction”),
I wash my mouth out with chocolate
(or expenditures on carbon-emitting assets).

![Image of a baby eating a cake]
OK. Now back to more facts and figures…..

IX. OTHER ISSUES TO EXAMINE

Q. PLEASE BRIEFLY DESCRIBE SOME OF THE OTHER ISSUES YOU WOULD LIKE THE COMMISSION TO EXAMINE

A. There are a number of other issues that I believe the Commission should examine closely as part of this “rate review” for PSCo. These are briefly described below. In addition, I expect other parties to brief a number of issues and I reserve the right to also discuss those in my Statement of Position.

A. Tax Cut and Jobs Act Treatment

From the excerpt below from PSCo’s 2018 10-K (Attachment LWG-2, page 22 as copied in Figure LWG-1 above, with the years 2018, 2017, 2016 going from left to right), it can be seen that in 2018, PSCo only paid $113.7 million in income taxes or $138.5 million less than the $252.2 million paid in income taxes in 2017. While PSCo was required to return $42 million to its customers as a result of the Tax Cut and Jobs Act (TCJA) proceeding 18M-0401E, it appears that the $138.5 million less that PSCo paid in taxes in 2018 was a lot more than it passed through to its Colorado customers. The Commission is requested to take a close look at what is going on with PSCo’s actual tax burden in light of the TCJA passed by Congress in late 2017.

<table>
<thead>
<tr>
<th>Income before income taxes</th>
<th>665.4</th>
<th>746.3</th>
<th>737.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income taxes</td>
<td>113.7</td>
<td>252.2</td>
<td>273.9</td>
</tr>
<tr>
<td>Net income</td>
<td>$ 551.7</td>
<td>$ 494.1</td>
<td>$ 463.5</td>
</tr>
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</table>
B. EAF—Equivalent Availability Factor

Given the press of other demands, I do not have time at this point to research the Equivalent Availability Factor issue. I believe other parties (like the PUC Staff and the OCC) may do this, and I encourage the Commission to take a close look at how to handle this issue.

For reference, the EAF for Xcel’s Colorado fossil fuel generation plants is given in the table below copied from Discovery Response CPUC10-5 in this 19AL-0268E docket.

<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cherokee 4</td>
<td>85.47</td>
<td>87.36</td>
<td>79.16</td>
<td>64.95</td>
<td>78.81</td>
<td>92.82</td>
<td>77.38</td>
<td>82.64</td>
<td>83.61</td>
<td>94.03</td>
<td>86.79</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Cherokee 6</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Comanche 1</td>
<td>91.17</td>
<td>71.10</td>
<td>91.56</td>
<td>84.03</td>
<td>75.75</td>
<td>89.54</td>
<td>91.65</td>
<td>76.73</td>
<td>92.47</td>
<td>95.67</td>
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<td>Comanche 2</td>
<td>76.66</td>
<td>93.72</td>
<td>89.19</td>
<td>69.80</td>
<td>72.89</td>
<td>93.82</td>
<td>78.20</td>
<td>88.76</td>
<td>93.77</td>
<td>77.13</td>
<td>96.39</td>
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<tr>
<td>Comanche 3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fort St. Vrain 1</td>
<td>83.46</td>
<td>95.89</td>
<td>75.45</td>
<td>80.21</td>
<td>93.02</td>
<td>85.46</td>
<td>80.66</td>
<td>93.51</td>
<td>95.35</td>
<td>84.03</td>
<td>77.96</td>
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<tr>
<td>Fort St. Vrain 2</td>
<td>92.04</td>
<td>95.73</td>
<td>76.60</td>
<td>85.92</td>
<td>85.84</td>
<td>82.85</td>
<td>93.63</td>
<td>89.59</td>
<td>84.56</td>
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<td>87.30</td>
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<td>84.49</td>
<td>96.96</td>
<td>89.22</td>
<td>79.82</td>
<td>90.24</td>
<td>88.49</td>
<td>76.87</td>
<td>94.76</td>
<td>94.49</td>
<td>92.29</td>
<td>90.84</td>
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<tr>
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<td>86.16</td>
<td>94.46</td>
<td>94.50</td>
<td>82.17</td>
<td>91.42</td>
<td>89.64</td>
<td>80.54</td>
<td>90.73</td>
<td>94.16</td>
<td>91.31</td>
<td>89.23</td>
</tr>
<tr>
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<td>96.63</td>
<td>95.79</td>
<td>76.34</td>
<td>96.39</td>
<td>92.83</td>
<td>66.97</td>
<td>97.84</td>
<td>95.87</td>
<td>76.35</td>
<td>92.95</td>
<td>99.00</td>
</tr>
<tr>
<td>Hayden 2</td>
<td>93.31</td>
<td>87.10</td>
<td>96.71</td>
<td>96.03</td>
<td>69.63</td>
<td>96.07</td>
<td>95.47</td>
<td>85.78</td>
<td>96.54</td>
<td>81.15</td>
<td>87.92</td>
</tr>
<tr>
<td>Pawnee</td>
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<td>91.15</td>
<td>56.05</td>
<td>87.85</td>
<td>76.81</td>
<td>86.43</td>
<td>79.95</td>
<td>70.59</td>
<td>91.57</td>
<td>74.00</td>
<td>95.04</td>
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<tr>
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<td>98.48</td>
<td>94.24</td>
<td>89.98</td>
<td>96.84</td>
<td>88.85</td>
<td>76.88</td>
<td>64.95</td>
<td>85.75</td>
<td>70.17</td>
<td>91.89</td>
<td>90.97</td>
</tr>
<tr>
<td>Rocky Mountain 2</td>
<td>93.30</td>
<td>88.98</td>
<td>93.72</td>
<td>90.32</td>
<td>88.06</td>
<td>77.95</td>
<td>63.92</td>
<td>88.76</td>
<td>68.01</td>
<td>92.21</td>
<td>90.38</td>
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<tr>
<td>Rocky Mountain 3</td>
<td>96.10</td>
<td>92.69</td>
<td>91.57</td>
<td>93.21</td>
<td>90.26</td>
<td>79.70</td>
<td>63.09</td>
<td>85.31</td>
<td>65.54</td>
<td>93.25</td>
<td>92.54</td>
</tr>
</tbody>
</table>

Table LWG-7

Equivalent Availability Factors (EAF) for Xcel’s Colorado Fossil Fuel Resources

Data from Discovery Response CPUC10-5 (Docket 19AL-0268E)
C. Comanche 3

It is clear that the Comanche 3 coal plant has had numerous problems going back to the problems bringing the plant on-line in 2009 and 2010. This can be seen in the Equivalent Availability Factor data in Table LWG-7, above and in the Capacity Factor Data in Table LWG-8 below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity Factor for the Comanche 3 Coal Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>64.64%</td>
</tr>
<tr>
<td>2016</td>
<td>75.66%</td>
</tr>
<tr>
<td>2017</td>
<td>71.89%</td>
</tr>
<tr>
<td>2018</td>
<td>65.40%</td>
</tr>
</tbody>
</table>

Both the EAF and the capacity factor for Comanche 3 are quite low and the plant has experienced numerous unplanned outages since it was put into service in 2010. At least reductions in output from a wind or solar farm can often be predicted. When Comanche 3 goes off line the grid loses 800 MW of power—just like that, often with no warning. Talk about unreliable!!

If a new car was “in the shop” this often it would be classified as a “lemon,” and so it appears it is with Comanche 3. In the meantime, Xcel’s Colorado customers are paying “return of and return on” this approximately billion dollar expenditure every year. Every time

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42 The outages for Comanche 3 for the years 2015-2018 were supplied to Ms.Glustrom in response to Discovery Question LWG10-2.A1 in this 19AL-0268E proceeding, but I promised myself I wouldn’t exceed 28 attachments for this testimony….). If anyone would like a copy of the list of Comanche 3 outages, please contact me.

43 Return on a billion dollar investment for Xcel is over $70 million in the first year and for many years thereafter as the plant depreciates over its 60 year life span and assuming Xcel’s Weighted Average Cost of Capital stays above 7% as it is now.
Comanche 3 breaks down or needs a replacement of “this-that-or-the-other-thing,” Xcel’s Colorado customers are paying for back-up power and return of and return on the capital expenditures—as well as millions of dollars a year in operating and fuel expenses. This has been going on for a long time and it is past time that Xcel’s Colorado customers were provided relief from paying all of this for a resource that is already obsolete and it isn’t even 1/6th the way through its expected 60 year life. Once again, the Commission needs to protect Xcel’s Colorado customers from having to put “good money after bad” to keep this already-obsolete plant going when those hundreds of millions of dollars could be spent building low-carbon, low-cost wind, solar and storage resources and investing in 21st century demand management solutions.

In short, it is long past time that the Commission took a hard look at the situation with Comanche 3 and put both Xcel and its customers out of their collective misery for this billion dollar mistake. 44

X. CONCLUSION

Q. PLEASE DESCRIBE THE CONCLUSIONS YOU ARE ASKING THE COMMISSION TO MAKE AS A RESULT OF YOUR TESTIMONY.

A. Xcel is in fine shape with $551 million in after-tax net income in Colorado in 2018. They certainly want a rate increase, but they certainly don’t need it as detailed in this testimony.

In contrast, Xcel’s Colorado ratepayers have been the subject of numerous rate increases in this century, totaling over $500 million per year in additional income for Xcel-Colorado. They have been paying for excess capacity and poorly conceived decisions to spend over $1 billion on

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44 A detailed history of the Comanche 3 process in Colorado is provided in the 2009 report by Ms. Glustrom entitled, “Comanche 3—Colorado’s Billion Dollar Mistake” available from Ms. Glustrom or the website of Clean Energy Action.
coal plants and hundreds of millions on natural gas plants that either are already, or soon will be, obsolete. It is long past time that these abuses were corrected as called for in C.R.S. § 40-2-103.

Q. DOES THIS CONCLUDE YOUR ANSWER TESTIMONY.

A. Yes. Thank you.