

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

Docket No. 11A-917E

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF
COLORADO FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR
THE HAYDEN EMISSIONS CONTROL PROJECT

**STATEMENT OF POSITION
OF
LESLIE GLUSTROM**

MARCH 21, 2012

I. INTRODUCTION AND SUMMARY	2
II. COST OF THE HAYDEN EMISSION CONTROL PROJECT	3
III. XCEL'S ALTERNATIVE ANALYSIS	7
III. ISSUES RELATED TO COAL SUPPLY.....	10
IV. RECOGNIZING CHANGED CIRCUMSTANCES.....	16
V. SUMMARY	19

I. INTRODUCTION AND SUMMARY

This docket was established by Decisions C10-1328 and C11-0121 from Docket 10M-245E (the “Clean Air Clean Jobs” docket)¹ to review the costs of the addition of Selective Catalytic Reduction (SCR) pollution control to reduce emissions of nitrogen oxides (NOx) from the Hayden 1 and 2, coal plants near the town of Hayden west of Steamboat, Colorado.

Hayden 1 is a 184 MW coal plant commissioned in 1965. Xcel owns 75.5% of Hayden 1 or 139 MW. Hayden 2 is a 262 MW coal plant commissioned in 1976. Xcel owns 37.4% of Hayden 2 or 98 MW.² The other co-owners of the Hayden coal plants are the Salt River Project and PacifiCorp.³

In this docket, the Administrative Law Judge has ruled in Interim Order R12-0231-I that:

...the scope of this proceeding is limited to the proposed costs of the Hayden emission control project as well as the coal costs as those costs directly relate to the cost effectiveness of the project, the efficacy of imposing cost cap, and the details associated with the emission control project as specified by the Commission in Decision Nos. C10-1328 and C11-0121. (¶11, Interim Order R12-0231-I)

This Statement of Position will summarize what is known about the costs of the Hayden Emission Control Project, discuss Xcel’s analysis of alternatives, discuss coal cost issues as they relate to the cost effectiveness of the project and, finally, discuss the importance of monitoring changed circumstances to ensure that Xcel follows a prudent course of action at this pivotal time in the 21st century.

¹ Hearing Exhibit 11 (Xcel Response to Glustrom 11-4) acknowledges that in the 10M-245E, “Clean Air Clean Jobs” docket that Xcel “did not perform any quantitative analysis of installing emissions controls equipment at Hayden Station as opposed to retiring one or more of the Hayden Station plants.”

² From Hearing Exhibit 6, Answer Testimony of Leslie Glustrom, page 8.

³ From Hearing Exhibit 1, Direct Testimony of Xcel witness Karen Hyde, page 3, line 23 to page 4, line 2. These co-owners are expected to pay their shares of the SCR system, but it is unclear who will be responsible if the co-owners fail to pay their portions of the SCR capital or operating costs.

II. COST OF THE HAYDEN EMISSION CONTROL PROJECT

From the record in this proceeding, we know the following about the Hayden Coal Plants and the projected costs of the Hayden Emission Control Project.

Hayden Unit 1

Year Commissioned	1965 ⁴
Age in 2012	47 Years Old
Hayden 1 Original ⁵ Capital Spend	\$87.9 million ⁶
Hayden 1 Accumulated Depreciation	\$60.5 million ⁷
Hayden 1 Net Plant	\$27.4 million ⁸
Cost of SCR ⁹ (Xcel share) ¹⁰	\$55.8 million ¹¹
Year SCR Expected to Begin Operation	2015 ¹²
Age of Hayden 1 when SCR Begins	50 years old
Expected Return on Rate Base from Hayden 1 SCR	\$34 million ¹³
Cumulative Difference in Rate Base in “With SCR” Case	\$193.3 million ¹⁴
Expected Return on Rate Base from Add’l Capital Expenditures ¹⁵	\$16.6 million
Cumulative Variable Costs from 2016 to 2030 (2011 Dollars)	\$43.2 million ¹⁶
Cumulative Fixed Costs from 2016 to 2030 (2011 Dollars)	\$31 million ¹⁷
Cumulative Fuel Costs from 2015 to 2030 (Xcel estimate)	\$508.6 million ¹⁸
Discount rate used by Xcel for Future Fuel and O&M Costs	7.609% ¹⁹

⁴ Hearing Exhibit 6, Answer Testimony of Leslie Glustrom, page 8

⁵ During cross examination on March 8, 2012, Xcel witness Hyde stated that “Original” Capital Spend was the accumulated capital expenditures on the plant.

⁶ See LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

⁷ See LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

⁸ See LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

⁹ SCR stands for Selective Catalytic Reduction a method of controlling emissions of nitrogen oxides (NOx)

¹⁰ The full cost of the SCR for Hayden 1 is \$73.9 million. See Hearing Exhibit 3, Direct Testimony of Xcel witness Vader, page 7, line 9

¹¹ From Hearing Exhibit 3, Direct Testimony of Xcel witness Vader, page 7, line 10

¹² From Hearing Exhibit 3, Direct Testimony of Xcel witness Vader, page 5, line 3

¹³ For expected return on rate base see Hearing Exhibit 19 (Glustrom 6-8.A1), take the rate base from the “SCR” in the lower box under Hayden 1, multiply by 8.6% (0.086) from the top of Hearing Exhibit 19 (Glustrom 6-8.A1), and sum the result and add \$000 for a total of a little over \$34 million.

¹⁴ From Hearing Exhibit 19 (Glustrom 6-8.A1), Keeping Hayden 1 on line will require additional capital expenditures other than for the SCR (see also Hearing Exhibits 15, 16, and 17). From Hearing Exhibit 19 (Glustrom 6-8.A1), determine the difference between the “Existing Rate Base” in the “With SCR” case and the “Existing Rate Base” in the “Without SCR” case and sum the years for a difference of about \$193.3 million additional rate base in the “with SCR” case for Hayden 1.

¹⁵ From Hearing Exhibit 19 (Glustrom 6-8.A1), Keeping Hayden 1 on line will require additional Capital Expenditures other than for the SCR (as detailed in Hearing Exhibits 15, 16 and 17). From Hearing Exhibit 19 (Glustrom 6-8.A1), determine the difference between the “Existing Rate Base” in the “With SCR” case and the “Existing Rate Base” in the “Without SCR” case for Hayden 1 and multiply the difference for each year by 0.086 (for the 8.6% Return on Rate Base shown at the top of Glustrom 6.8.A1). Then sum the years from 2011 to 2029 and add \$000 for a total of approximately \$16 million in additional return on rate base due to increased capital expenditures, other than for the SCR itself. 2030 was omitted as the Existing Rate Base in the “With SCR” case is negative.

¹⁶ From Hearing Exhibit 42, Xcel response to Glustrom 6-15, Docket 11A-917E

¹⁷ From Hearing Exhibit 42, Xcel response to Glustrom 6-15, Docket 11A-

¹⁸ From Hearing Exhibit 15. Sum the total fuel costs for Hayden 1 from 2015 to 2030 for approximately \$508.6 million (nominal \$) in cumulative fuel costs from 2015-2030 for Hayden 1 using Xcel’s estimated fuel costs. Hayden 1 fuel costs are in the neighborhood of \$25-35 million/year over the 2015-2030 time frame.

Hayden Unit 2

Year Commissioned	1976 ²⁰
Age as of 2012	36 years old
Hayden 2 Original ²¹ Capital Spend -	\$118.9 million ²²
Hayden 2 Accumulated Depreciation	\$55.1 million ²³
Hayden 2 Net Plant	\$63.8 million ²⁴
Cost of SCR (Xcel share) ²⁵	\$34.0 million ²⁶
Year SCR Expected to Begin Operation	2016 ²⁷
Age of Hayden 2 When SCR Begins	40 years old
Expected Return on Rate Base from Hayden 2 SCR	\$20.65 million ²⁸
Cumulative Difference in Rate Base in “With SCR” Case	\$11.53 million ²⁹
Expected Return on Rate Base from Add'l Capital Expenditures	\$0.99 million ³⁰
Cumulative Variable Costs from 2016 to 2036 (2011 Dollars)	\$30.4 million ³¹
Cumulative Fixed Costs from 2016 to 2036 (2011 Dollars)	\$23.4 million ³²
Cumulative Fuel Costs from 2015 to 2036 (Xcel estimate)	\$537.9 million ³³
Discount rate used by Xcel for Future Fuel and O&M Costs	7.609% ³⁴

¹⁹ From Hearing Exhibits 9 and 10

²⁰ From Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits, page 8

²¹ During cross examination on March 8, 2012, Xcel witness Hyde stated that “Original” Capital Spend was the accumulated capital expenditures on the plant.

²² From LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

²³ From LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

²⁴ From LWG-2 attached to Hearing Exhibit 6, Glustrom Answer Testimony and Exhibits

²⁵ The full cost of the SCR for Hayden 2 is expected to be about \$91.0 million. See Hearing Exhibit 3, the Direct Testimony of Xcel witness Vader, page 7, line 9

²⁶ From Hearing Exhibit 3, Direct Testimony of Xcel witness Vader, page 7, line 11

²⁷ From Hearing Exhibit 3, Direct Testimony of Xcel witness Vader, page 5, line 3

²⁸ From Hearing Exhibit 19. For expected return on rate base see Hearing Exhibit 19, take the rate base from the “SCR” in the lower box under Hayden 2, multiply by 8.6% (0.086) and sum the result and add \$000 for a total of about \$20.65 million.

²⁹ From Hearing Exhibit 19. Keeping Hayden 2 on line will require additional Capital Expenditures other than for the SCR (see also Hearing Exhibits 15, 16 and 18). From Hearing Exhibit 19 (Glustrom 6-8.A1), determine the difference between the “Existing Rate Base” in the “With SCR” case and the “Existing Rate Base” in the “Without SCR” case and sum the years for a difference of about \$11.53 million of additional rate base in the “with SCR” case for Hayden 2.

³⁰ From Hearing Exhibit 19 (Glustrom 6-8.A1), Keeping Hayden 2 on line will require additional Capital Expenditures other than for the SCR (as detailed in Hearing Exhibits 15, 16 and 17). From Hearing Exhibit 19 (Glustrom 6-8.A1), determine the difference between the “Existing Rate Base” in the “With SCR” case and the “Existing Rate Base” in the “Without SCR” case for Hayden 2 and multiply the difference for each year by 0.086 (for the 8.6% Return on Rate Base shown at the top of Glustrom 6.8.A1). Then sum the years from 2011 to 2035 and add \$000 for a total of approximately \$0.99 million in additional return on rate base due to increased capital expenditures, other than for the SCR itself. 2036 was omitted as the Existing Rate Base in the “With SCR” case is negative.

³¹ From Hearing Exhibit 42, (Xcel Response to Glustrom 6-16, Docket 11A-917E)

³² From Hearing Exhibit 42, (Xcel Response to Glustrom 6-16, Docket 11A-917E)

³³ From Hearing Exhibit 15 (Xcel Response to Glustrom 2-18). Sum the total fuel costs for Hayden 2 from 2015 to 2036 for approximately \$537.9 million (nominal \$) in cumulative fuel costs from 2015-2030 for Hayden 2 using Xcel’s estimated fuel costs. Hayden 2 fuel costs are in the neighborhood of \$19-29 million/year over the 2015-2036 time frame.

³⁴ From Hearing Exhibits 9 (Xcel Response to Glustrom 1-23) and 10 (Xcel Response to Glustrom 7-3)

Observations regarding the information in the record as summarized above include:

- Hayden 1 is already an old plant and will be 50 years old when the SCR begins operation.
- Hayden 2 is also relatively old and will be 40 years old when the SCR begins operation.
- Xcel's share of the SCR for Hayden 1 (\$55.8 million) is more than twice the existing Hayden 1 "net plant" (i.e. remaining investment on which Xcel is authorized to earn its return on³⁵), so adding the SCR will approximately triple the "net plant" for Hayden 1 and will (very likely) have the effect of increasing Xcel's earnings and profit from the Hayden 1 coal plan.
- Xcel's share of the SCR for Hayden 2 (\$34 million) is a little more than 50% of the existing Hayden 2 net plant and will also (very likely) have the effect of increasing Xcel's earnings and profits from the Hayden 2 coal plant .
- For Xcel, making the capital investment for the SCR will likely result in increased Return on Rate Base³⁶ and therefore profit for both the SCR and for the other capital expenditures required to keep the Hayden coal plants operating until their expected retirement dates as follows:

³⁵ Xcel earns its Weighted Average Cost of Capital ("WACC") on its net plant that is added to rate base. Capital investments are typically added to "rate base" and increase Xcel's "return on" investment and increase earnings. Hearing Exhibit 19 (Glustrom 6-8.A1), shows Xcel's expected Return on Rate Base as 8.6%. Increasing costs or poor management could reduce or eliminate the increased earnings that follow capital investments and increases in rate base.

³⁶ See Hearing Exhibit 19 for capital expenditures on the SCR as well as other capital expenditures needed to keep the Hayden 1 and 2 coal plants on line and the calculations explained in the footnotes above.

Hayden 1-Expected Return on Rate Base for Xcel

Return on Rate Base for SCR	\$34 million
Return on Rate Base for other Capital Expenditures	<u>\$16.6 million</u>
Total Expected Return on Rate Base for Hayden 1	\$50.6 million

Hayden 2—Expected Return on Rate Base for Xcel

Return on Rate Base for SCR	\$20.65 million
Return on Rate Base for Other Capital Expenditures	<u>\$0.99 million</u>
Total Expected Return on Rate Base for Hayden 2	\$21.64 million

- The cost to ratepayers for deciding to move forward with the SCRs involves many more costs than just the return of the approximately \$90 million capital investment. These additional expenses are summarized above and include:

**Costs to Ratepayers for Hayden 1 and 2
Through the Expected Retirement Dates**
(In Addition to the \$90 Million for the SCR)³⁷

Return on Rate Base for Hayden 1	\$50.6 million
Return on Rate Base for Hayden 2	\$21.6 million
Variable Operating Expenses Hayden 1 to 2030 (2011 \$)	\$43.2 million
Variable Operating Expenses Hayden 2 to 2036 (2011 \$)	\$23.4 million
Fixed Operating Costs Hayden 1 to 2030 (2011 \$)	\$31 million
Fixed Operating Costs Hayden 2 to 2036 (2011 \$)	\$23.4 million
Fuel Costs for Hayden 1 2015- 2030 (Xcel estimate)	\$508.6 million
Fuel Costs for Hayden 2 2015-2036 (Xcel estimate)	\$537.9 million

All of the costs above are in addition to the approximately \$90 million capital investment needed for the SCR controls on Hayden 1 and 2 and are significant expenses that will be borne by rate payers over the next 25 years if Xcel proceeds with the SCR on Hayden 1 and 2.

[Rest of page left intentionally blank.]

³⁷ References for the numbers are found under the lists for Hayden 1 and Hayden 2 earlier in this Statement.

As can be seen from the above facts in the record of this proceeding, Xcel stands to gain significant “Returns on Rate Base” (i.e. profits) if it proceeds with installing SCR technology on the Hayden coal plants, while ratepayers will be responsible for hundreds of millions of dollars of fuel and operating costs for these aging coal plants. In the 21st century there are very likely better alternatives, as discussed below.

III. XCEL’S ALTERNATIVE ANALYSIS

Xcel witness Karen Hyde testified that Xcel had analyzed the economics of adding controls to the Hayden coal plants versus a retirement scenario and determined (after correcting for heat rate issues)³⁸ that there was a \$269 million present value savings for the emissions control project. As described in Hearing Exhibits 9 and 10 and during cross examination of Ms. Hyde on Thursday March 8, 2012, the Present Value calculation is the difference between two runs of Xcel’s Strategist model using Xcel’s assumptions for both scenarios—one with adding the SCRs and one with retirement—and then determining the Present Value of the difference. Future expenses (capital, operating and fuel) are discounted at 7.609% per year to arrive at the “Present Value” number.

Issues with Xcel’s alternative analysis include:

- The \$269 million in present value savings claimed by Xcel witness Hyde is less than 1% of the \$36-\$37 billion³⁹ in total modeled costs of the two Strategist runs as seen from the top of CEC 1-3.A6 found in Hearing Exhibit 8.

³⁸ See the testimony of Ms. Hyde early on the morning of March 8, 2012 for the corrected estimate of present value savings.

³⁹ 1% of 36 billion would be \$360 million.

- Xcel discounts future fuel and operating costs (including the chemicals needed to operate the SCR) at 7.609% per year.⁴⁰ For example, the \$34.7 million in expected fuel costs for Hayden 1 in 2030⁴¹ would equate to only about \$7.7 million when discounted at 7.609% for 19 years to convert it to 2011 “Present Value” dollars. While Xcel may be able to earn 7.609% on their money, very few ratepayers are earning 7.609% and even fewer (if any) are establishing accounts that are earning 7.609% and which can be used to pay future fuel costs for themselves or their children. As a result, discounting future fuel and operating costs has the effect of largely masking the future operating costs that ratepayers will be responsible for while Xcel is authorized to earn its 8.6% return on capital investment for the SCR and other capital expenditures made on the Hayden coal plants.
- For the “retirement” scenario, Xcel has assumed that the Hayden coal plants will be replaced with 2 natural gas combustion turbines.⁴² While the details of the modeling effort are not clear, operating combustion turbines is often the most expensive way to generate electricity.⁴³
- Xcel did not do any sensitivities that considered higher coal cost escalation rates than the less than 2% /year that they have assumed.⁴⁴ As explained below, if coal costs escalate faster than the less than 2%/year assumed by Xcel, this could have hundreds of millions of dollars of cost impacts for ratepayers.

⁴⁰ See Hearing Exhibit 10, Xcel Response to Glustrom 7-3.

⁴¹ See Hearing Exhibit 15 (Xcel Response to Glustrom 2-18)

⁴² See Hearing Exhibit 24 (Xcel Response to Glustrom 9-8). For examples of the assumptions associated with combustion turbines see page 21 in Hearing Exhibit 40. In general, combustion turbines are the most expensive resources to operate due to high (inefficient) heat rates and high variable operating costs.

⁴³ Under cross examination on March 8, 2012 Xcel witness Hyde noted that the largest driver in the alternative analysis was the fuel cost differential between coal and natural gas.

⁴⁴ See Hearing Exhibit 14 (Xcel Response to Glustrom 3-27).

- Xcel has assumed that fixed and variable operating costs escalate at low rates⁴⁵—and then discount them at 7.609%. If these costs escalate faster than Xcel has assumed, then this will add to the expense of operating the Hayden plants with SCRs.
- Xcel does not have a contract for the chemicals for operating the SCR⁴⁶ and these costs could be higher than projected.
- Xcel did not do any sensitivity runs assuming increased air, water or coal ash regulation occurring over the next 25 years.⁴⁷
- Xcel did not do any sensitivity runs assuming higher prices on carbon dioxide emissions.⁴⁸ Whether or not there is a price levied on carbon emissions, it is widely recognized that the production and use of fossil fuels has large social and environmental costs—even though these don't show up on our utility bills.
- No analysis was done of meeting or managing increased demand using low cost demand side measures including efficiency and demand response. Xcel only assumed that the Hayden coal plant capacity would be replaced with 2 combustion turbines—typically the most expensive way to generate electricity.⁴⁹
- Xcel has not carefully considered the fact that coal plants—particularly coal plants with pollution controls—make it more difficult to incorporate higher levels of renewable energy which require flexible generation resources—not inflexible resources such as coal plants.⁵⁰
- Importantly, Xcel may not need to replace the Hayden coal plants. Currently, Xcel has several hundred MW of excess capacity on its system and hundreds of MW of existing

⁴⁵ See Hearing Exhibit 20 (Xcel Response to Glustrom 2-17)

⁴⁶ See Hearing Exhibit 21 (Xcel Response to Glustrom 9-11)

⁴⁷ See Hearing Exhibit 22 (Xcel Response to Glustrom 8-14 and 8-15)

⁴⁸ See Hearing Exhibit 23 (Xcel Response to Glustrom 9-2 and 9-3)

⁴⁹ See Hearing Exhibit 24 (Xcel Response to Glustrom 9-8)

⁵⁰ See Hearing Exhibit 40 (Direct Testimony of Xcel witness Ford in the 10M-245E docket), page 18, lines 3-22.

natural gas plants that can be contracted with if needed.⁵¹ In addition, there could be significant reductions in future load if Boulder⁵² or other communities decide to leave the Xcel system or if large numbers of customers opt to install solar systems as costs fall and leasing and financing arrangements become increasingly common. If the Hayden coal plants aren't needed to meet Xcel's load, then the costs outlined above are all unnecessary and will create serious issues for Xcel and its ratepayers.⁵³

III. ISSUES RELATED TO COAL SUPPLY

As discussed in the Testimony of Xcel witness Susan Arigoni (Hearing Exhibits 5 and 6), the Twentymile mine that has been supplying the Hayden coal plants is “expected to be played out sometime in 2013.”⁵⁴ As a result Xcel has entered into a coal supply agreement with Peabody coal to develop the Sage Creek mine.⁵⁵

There are numerous issues related to Xcel's plans to obtain coal through the Peabody Sage Creek mine including:

- Opportunities to seek competitive coal supplies are limited.⁵⁶
- The coal costs under the agreement with Peabody are not guaranteed; rather the prices provided by Xcel witness Arigoni are estimates of future costs.⁵⁷

⁵¹ See Hearing Exhibit 7, Answer Testimony of Leslie Glustrom, page 19

⁵² Boulder voted on November 1, 2012 to continue exploring the option of municipalizing its electric supply and leaving the Xcel system. While the outcome of the Boulder situation is unknown, there is significant risk that other communities will consider leaving Xcel's system in order to pursue cleaner options and to avoid paying for Xcel's large investments in coal plants.

⁵³ It is very likely that retiring the coal plants will achieve greater reductions in emissions of NOx (See Hearing Exhibit 41 (Xcel Response to Glustrom 2-14) for remaining emissions of NOx—and certainly retiring the coal plants will also eliminate emissions of other pollutants such as carbon dioxide and mercury.

⁵⁴ From Hearing Exhibit 5, Direct Testimony of Xcel witness Arigoni, page 3, lines 20-21

⁵⁵ From Hearing Exhibit 5, Direct Testimony of Xcel witness Arigoni, page 9, lines 3-16 and Hearing Exhibit 30 (Xcel Response to Glustrom 1-7)

⁵⁶ During cross examination on March 8, 2012, Ms. Arigoni stated that there were three “openers” that would allow Xcel to seek other competitively priced coal supplies

⁵⁷ From Exhibit LWG-15 (Xcel Response to Glustrom 1-20) attached to Hearing Exhibit 7, the Answer Testimony of Leslie Glustrom and also in SA-2 attached to Hearing Exhibit 6 the Rebuttal Testimony of Xcel witness Arigoni

- Xcel does not have a good track record of predicting future coal costs. Xcel witness Arigoni’s Direct Testimony discusses how the assumptions used by Xcel’s consultant Wood Mackenzie in the 10M-245E docket have not “proved out” and how Xcel is already having to increase its estimate of coal costs, only 18 months after the close of the 10M-245E record.⁵⁸
- As acknowledged by Xcel witness Arigoni on March 8, 2012, under Section 2-B of the Peabody coal agreement, “Sage Creek LLC does not have current reserves to meet its obligations post January 1, 2023.”⁵⁹
- The Peabody agreement does not extend past 2027 and coal costs beyond 2027 are mere estimates from Xcel. In addition, the source of the coal beyond 2027 is unknown.⁶⁰
- As discussed in depth below, coal costs are rising approximately 5-10% per year—not the 2% or less that Xcel assumes in its models. Ratepayers, of course, pay 100% of actual costs—not Xcel’s modeled (and discounted) costs. For the Hayden 1 and 2 coal plants that is likely over \$500 million total (using Xcel’s estimates)⁶¹ for each plant (**or over \$1 billion**) that will be paid for coal from 2015 to the retirement date of the Hayden coal plants. This is money that will literally go “up the smoke stack” and will not be invested in 21st century, low- and no-carbon and low pollution resources. If Xcel’s coal cost estimates are low, ratepayers will be spending a lot more than \$1 billion on fuel that will be sent up the smoke stack—along with all the carbon dioxide and other pollutants that will be emitted.

⁵⁸ See Hearing Exhibit 5, the Direct Testimony of Xcel witness Arigoni, pages 9-12

⁵⁹ The Peabody coal agreement was provided in Discovery in response to Glustrom 1-19 but was not entered into the record of the proceeding as it was lengthy and Xcel objected during the March 8, 2012 hearing to having the agreement in the record of this 11A-917E proceeding.

⁶⁰ See Hearing Exhibit 5, Direct Testimony of Xcel witness Arigoni, page 12 and Hearing Exhibit 27 (Xcel Response to Glustrom 5-28).

⁶¹ See Hearing Exhibit 15 (Xcel Response to Glustrom 2-18) and sum the fuel cost estimates provided by Xcel therein.

Xcel's Coal Cost Estimates

Xcel's coal cost estimates can be found in SA-2 attached to the Rebuttal Testimony of Xcel witness Arigoni and in Hearing Exhibit 28 (Xcel Response to Glustrom 5-28). These cost estimates are shown below. Xcel assumes approximately a 2% per year increase in coal costs to 2027 and then a 1.5% per year increase from 2027 to 2028 (as acknowledged by Xcel witness Arigoni during cross examination on March 8, 2012.)

Actual coal costs for the Hayden plants from 2003 to 2011 (except 2008) to as provided by Xcel are summarized in the table below.

Table LWG-1
Actual Cost of Coal for the Hayden Coal Plant (\$/MMBTU)
2003-2007 from Hearing Exhibit 44, 2009 from Hearing Exhibit 45,
2010 and 2011 from Hearing Exhibit 29

2003	\$1.02/MMBTU
2004	\$1.00/MMBTU
2005	\$1.02/MMBTU
2006	\$1.57/MMBTU
2007	\$1.57/MMBTU
2008	Available in the 10M-245E Record
2009	\$1.41/MMBTU
2010	\$1.58/MMBTU
2011	\$1.64/MMBTU (Through November)

As can be seen from Table LWG-1 above, the actual cost of coal has been increasing a lot more than 2% per year. Calculated from 2004, coal costs for Hayden have increased an average of over 9% per year.⁶² Calculated from 2003, coal costs at Hayden has increased about 7.5 % per year.⁶³

While no one can foretell the future, it appears questionable for Xcel to assume that coal costs will only increase 2% per year or less from now until 2036. For comparison sake, Xcel's projected coal costs are shown below along with coal costs that increase 5% /year and 10% /year.

Table LWG-2

Coal Cost (\$/MMBTU) as a Function of Escalation Rate

Xcel Estimates are From SA-2⁶⁴ and Hearing Exhibit 28
5% Per Year and 10% Per Year Escalation Rates are Calculated Using an Excel Spreadsheet.⁶⁵

	<u>Xcel Estimate</u>	<u>5%/Yr</u>	<u>10%/Year</u>
2012	2.19	2.19	2.19
2013	2.23	2.30	2.41
2014	2.31	2.41	2.65
2015	2.35	2.54	2.91
2016	2.39	2.66	3.21
2017	2.48	2.80	3.53
2018	2.52	2.93	3.88
2019	2.56	3.08	4.27
2020	2.65	3.24	4.69
2021	2.69	3.40	5.16
2022	2.74	3.57	5.68
2023	2.78	3.75	6.25
2024	2.83	3.93	6.87
2025	2.87	4.13	7.56
2026	2.92	4.34	8.32
2027	2.97	4.55	9.15
2028	3.04	4.78	10.06
2029	3.08	5.02	11.07
2030	3.13	5.27	12.18
2031	3.17	5.53	13.39
2032	3.21	5.81	14.73

⁶² $(64/100 \times 100)/7 = 9.1\%$ average increase per year in coal costs for Hayden from 2004-2011

⁶³ $(62/102 \times 100)/8 = 7.5\%$ per year increase in coal costs for Hayden 2003-2011.

⁶⁴ SA-2 is found with Hearing Exhibit 6, the Rebuttal Testimony of Xcel witness Susan Arigoni

⁶⁵ Escalation rates can also be calculated and checked using an online compound interest calculator such as the one at http://www.moneychimp.com/calculator/compound_interest_calculator.htm

2033	3.26	6.10	16.21
2034	3.30	6.41	17.83
2035	3.35	6.73	19.61
2036	3.40	7.06	21.57

As can be seen from Table LWG-2 above, if coal costs escalate at 5% per year or more, it will make a very big difference in the costs that will be passed on to ratepayers and **the over \$1 billion** in fuel costs under Xcel’s cost estimate can balloon rapidly. Examples of fuel costs in future years using Xcel’s cost estimates and 5% /year and 10% per year cost escalators are below.

Table LWG-3
Coal Costs (Cumulative and Selected Years) for the
Hayden 1 Coal Plant Using Xcel’s Coal Cost Estimate
and 5% and 10% Per Year Coal Cost Escalators

Coal costs in \$/MMBTU are from Table LWG-2 above.
000’s of MMBTU are from Hearing Exhibit 13 (Xcel Response to Glustrom 8-11). Totals are in nominal \$.

Year	Coal Cost Using Xcel’s Coal Cost Estimate⁶⁶	Coal Cost Assuming 5% Per Year Coal Cost Escalation	Coal Cost Assuming 10% Per Year Coal Cost Escalation
2015	\$25.03 million	\$26.99 million	\$31.04 million
2020	\$31.76 million	\$38.78 million	\$56.26 million
2025	\$34.46 million	\$49.58 million	\$90.76 million
2030	\$34.81 million	\$58.61 million	\$135.4 million
Cumulative Fuel Cost 2015-2030	\$504.4 million	\$688.7 million	\$1,206 million (\$1.206 billion)

⁶⁶ There are slight differences between the fuel costs provided by Xcel in Hearing Exhibit 15 (Xcel Response to Glustrom 2-18) and the calculated fuel costs using the \$/MMBTU from SA-2 and the 000’s of MMBTUs from Hearing Exhibit 13 (Xcel Response to Glustrom 8-11) but the differences are not large.

Table LWG-4
Coal Costs (Cumulative and Selected Years) for the
Hayden 2 Coal Plant Using Xcel’s Coal Cost Estimate
and 5% and 10% Per Year Coal Cost Escalators

Coal costs in \$/MMBTU are from Table LWG-2 above.
000’s of MMBTU are from Hearing Exhibit 13 (Xcel Response to Glustrom 8-11). Totals are in nominal \$.

Year	Coal Cost Using Xcel’s Coal Cost Estimate	Coal Cost Assuming 5% Per Year Coal Cost Escalation	Coal Cost Assuming 10% Per Year Coal Cost Escalation
2015	\$19.29 million	\$20.81 million	\$23.93 million
2020	\$19.36 million	\$23.64 million	\$34.30 million
2025	\$24.79 million	\$35.67 million	\$65.31 million
2030	\$27.14 million	\$45.70 million	\$105.58 million
2036	\$26.76 million	\$53.74 million	\$156.67 million
Cumulative Fuel Costs 2015-2036	\$531.2 million	\$816.0 million	\$1,745 million \$1.745 billion

From the above tables, it can be seen that if coal costs increase at a rate greater than the 2%/year (or less) that Xcel is assuming, ratepayers could be responsible for very high fuel costs for the Hayden coal plants over the next 25 years.

Combining the fuel costs from 2015 to their respective retirement dates⁶⁷ gives the following cumulative fuel costs (nominal \$) for the Hayden coal plants under Xcel’s coal cost assumptions and under assumptions of 5% /year and 10% /year cost escalations.

⁶⁷ Hayden 1 is scheduled for retirement in 2030 and Hayden 2 for retirement in 2036.

Table LWG-5
Cumulative Coal Costs for Both Hayden 1 and 2
From 2015-Retirement

Using Xcel’s Coal Cost Estimates and Assuming 5%/Year and 10%/Year Coal Cost Escalations

	Assuming Xcel’s Coal Cost Projections	Assuming 5%/Year Coal Cost Escalation	Assuming 10%/Year Coal Cost Escalation
Cumulative Fuel Costs Hayden 1 and 2 to Retirement	\$1.035 Billion	\$1.504 Billion	\$2.951 Billion

From Table LWG-5 above, it can be seen that even in the best case scenario using Xcel’s coal cost projections, ratepayers are likely to be responsible for **over \$1 billion** in coal costs for the Hayden coal plants from 2015 to retirement. This is money that will literally go “up the smokestack” and not be invested in less-polluting 21st century resources.

If coal costs escalate at a rate higher than Xcel’s projections ratepayers’ liability for fuel costs could be much, much higher. If coal costs continue to escalate in the 7-9%/year that they have been escalating in the previous decade then ratepayers could be expected to pay **over \$2 billion** for coal costs for the Hayden coal plants. As described above, discounting these rates at 7.609% has the effect of significantly reducing these costs in Xcel’s models—but ratepayers pay actual costs—not discounted costs.

[Rest of page left intentionally blank.]

It is now obvious that adding an SCR to the Hayden coal plants can lead to significant profits for Xcel due to the 8.6% Return on Rate Base, but doing so leaves ratepayers vulnerable to large fuel and operating costs—cumulative costs that are likely to be well above \$1 billion for the coal alone for the Hayden plants.

If Xcel’s coal cost estimates are low, then ratepayers could be vulnerable for \$2 billion or more in fuel costs if the Hayden plants stay on line into the 2030’s. Alternatively, the Hayden coal plants could become uneconomical leaving Xcel and its ratepayers with large stranded assets—stranded assets that are on top of the other large investments in coal that Xcel has made in recent years including Comanche 3 and the approximately \$250 million spent for pollution controls for the Pawnee coal plant in Brush.

**As discussed below,
making large and imprudent investments in last century’s technology
that carry very large fuel cost risk is not good for
Xcel, its ratepayers or the State of Colorado.**

IV. RECOGNIZING CHANGED CIRCUMSTANCES THAT WERE NOT AND COULD NOT BE ADDRESSED IN THE 10M-245E (“CLEAN AIR CLEAN JOBS”) DOCKET

There are many circumstances that have changed since the Colorado PUC issued its final decision (C10-1328) in the 10M-245E (“Clean Air Clean Jobs”) docket on December 15, 2011. Some of these changing circumstances are described below.

To ensure that Xcel makes a prudent investment for the Company and its ratepayers, it would be wise for the Commission to encourage the Company to reevaluate the wisdom of the Hayden Emission Control Project in light of these changing circumstances which include:

- Declining costs of wind power⁶⁸
- Increases in Xcel’s wind curtailment costs,⁶⁹
- Continued and projected decline in the cost of solar installations⁷⁰
- The need for flexibility in accommodating increased levels of renewable energy⁷¹
- Increased cost of coal and coal supply constraints making coal no longer the cheapest form of generation⁷²

⁶⁸ For information on the declining costs of wind power, see for example Dockets 10A-377E, 11A-689E and 11A-833E. This is all information that Xcel knows or should know and which should be considered before making a large investment in the Hayden coal plant.

⁶⁹ For information on the increases in Xcel’s wind curtailment costs, see Dockets 11A-418E and 11A-689E.

⁷⁰ For information on the declining costs of solar energy installed on Xcel’s system in Colorado, see Dockets 11A-135E and 11A-418E. In addition there are radio and internet ads prevalent in early 2012 noting that by leasing solar energy rate payers can avoid the up front costs and pay for the solar at a price comparable to or less than their monthly electric bill. As coal costs mount and solar costs likely decline this could lead to significant reductions in Xcel’s load.

⁷¹ For information on the need for flexibility in accommodating increased levels of renewable energy see Docket 11A-869E and the Testimony of Xcel witness Greg Ford in the 10M-245E docket which is also Hearing Exhibit 40 in this 11A-917E docket, page 18, lines 3-22

⁷² The costs of coal for the Hayden plant can be determined through the “EIA 423” database which can be accessed at . Coal supply issues related to the Hayden plants are discussed in this Statement of Position from Leslie Glustrom for the 11A-917E docket. In addition, starting in 2011, it has become clear that eastern coal plants (particularly those in New York including the Dunkirk, Huntley and Cayuga coal plants) are no longer economic resources and their owners are experiencing significant financial distress as a result. These stories from New York should serve as a “cautionary tale” for Xcel as it decides whether to make large investments in aging coal plants.

- The potential loss of franchise communities if Xcel continues to make unwise investments in coal infrastructure at a time when an increasing number of rate payers are making it clear they want clean energy, not dirty coal plants.⁷³

Information on each of the above topics has surfaced **since** the final decisions were made in the 10M-25E “Clean Air Clean Jobs” docket. Since the information surfaced **after** the Clean Air Clean Jobs decisions, it could **not** possibly have been considered by the Commission in that docket.

Much of the information on changing circumstances outlined above originates with Xcel, so the Company either knows or should know this information and should consider the long term consequences of making large and very likely imprudent investments in coal plants in the 21st century when lower cost and cleaner alternatives are already available—or will soon be.

The Commission should direct Xcel to monitor the large number of changing circumstances that could make an investment in pollution controls for the Hayden coal plant not prudent. The Commission should warn Xcel that a CPCN for the pollution control project does not provide a guarantee of prudence and that Xcel should expect the prudence of its investment to be challenged based on information that the Company either knows or should know which indicates that making a large investment in the Hayden coal plant in the 21st century is not prudent.

V. SUMMARY

As a result of all of the above, the Commission is respectfully requested to do the following:

⁷³ In addition to the outcome of the Boulder election on November 1, 2011 authorizing Boulder to move ahead with an analysis of the possibility of municipalizing, it is clear to anyone who is paying attention that Xcel’s customers increasingly favor clean energy—not dirty energy from coal plants. As we move through the next three decades it is very likely that Xcel’s ratepayers will find one or more ways to liberate themselves from paying for Xcel’s imprudent investments in dirty coal plants.

- Ensure that Xcel ratepayers will not be held accountable for any costs related to the SCR installation or increased operating costs at the Hayden plant that are the responsibility of present or future co-owners of the Hayden coal plants.
- Establish a cost cap on the installation of the SCR.
- Establish a cost cap on recovery of fuel costs with any coal costs that are greater than 110% of Xcel's projected costs in this docket being the sole responsibility of Xcel's shareholders, not ratepayers.
- Establish a cost cap on Variable and Fixed Operating Costs with any costs that are greater than 110% of Xcel's projected costs being the sole responsibility of Xcel's shareholders, not ratepayers.
- Remind Xcel of the importance of monitoring changed circumstances and ensuring that all investments are prudent in light of changing circumstances—the granting of a CPCN notwithstanding.

Respectfully submitted this 21st day of March 2012,

/s/Leslie Glustrom

Leslie Glustrom
4492 Burr Place
Boulder, CO 80303
lglustrom@gmail.com,
303-245-8637

CERTIFICATE OF SERVICE

I, Leslie Glustrom, do hereby certify that a copy of this **STATEMENT OF POSITION OF LESLIE GLUSTROM** was filed through the Colorado PUC E-Filing system for the 11A-917E docket on this 21st day of March 2012 and a courtesy copy was provided to the parties by e-mail.

/s/ Leslie Glustrom _____

Leslie Glustrom,
4492 Burr Place
Boulder, CO 80303
lglustrom@gmail.com
303-245-8637