

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

3
4 Docket No. 10M-245E
5

6 IN THE MATTER OF COMMISSION CONSIDERATION OF PUBLIC SERVICE
7 COMPANY OF COLORADO PLAN IN COMPLIANCE WITH HOUSE BILL 10-1365,
8 “CLEAN AIR-CLEAN JOBS ACT.”
9

10
11 **ANSWER TESTIMONY**

12
13 **OF**

14
15 **LESLIE GLUSTROM**

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18
19 **SEPTEMBER 17, 2010**
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1 **LIST OF ATTACHMENTS**

2
3 **Attachment 1**

4 *Coal Costs for Xcel's Colorado Plants for 2003-2007*
5 (Discovery Response LWG 3-7, Docket 07A-447E)

6
7 **Attachment 2**

8 *Coal Costs for Xcel's Colorado Coal Plants 2008*
9 (Supplemental Attachment K provided by Xcel in Docket 10M-245E)

10
11 **Attachment 3**

12 *Coal Costs for Xcel's Colorado Coal Plants 2009*
13 (Discovery Response LWG 2-4, Docket 10M-245E)

14
15 **Attachment 4**

16 *Coal Costs Used in Xcel's Modeling 2010-2046*
17 (Supplemental Attachment J provided by Xcel in Docket 10M-245E)

18
19 **Attachment 5**

20 *Original Cost, Net Plant Remaining and Expected Retirement Date for Xcel's Colorado*
21 *Coal Plants*
22 (Discovery Response LWG 1-6, Docket 10M-245E—2 Parts)

23
24 **Attachment 6**

25 *"Coal: Cheap and Abundant... Or Is It? Why Americans Should Stop Assuming that the*
26 *U.S. Has a 200-Year Supply of Coal," by Leslie Glustrom February 2009*
27 Available for free download at
28 http://www.cleanenergyaction.org/sites/default/files/Coal_Supply_Constraints_CEA_021
29 [209.pdf](http://www.cleanenergyaction.org/sites/default/files/Coal_Supply_Constraints_CEA_021)

30
31 **Attachment 7**

32 *Eagle Butte Mine Reclamation Status January 2010*
33 This is a file that exceeds 100 MB that will be posted on the internet for download.

34
35 **Attachment 8**

36 *Final EIS Eagle Butte Coal Lease—Executive Summary August 2007*
37 Bureau of Land Management, Wyoming (Casper Office)

38
39 **Attachment 9**

40 *Belle Ayr Mine Reclamation Status Map January 2010*
41 This is a file that exceeds 100 MB that will be posted on the internet for download

42
43 **Attachment 10**

44 *Final EIS South Gillette Coal Lease—Executive Summary August 2009*
45 Bureau of Land Management, Wyoming (Casper Office)

- 1 **Attachment 11**
2 *Office of Surface Mining Reclamation and Enforcement Annual Evaluation Wyoming*
3 *Regulatory Program 2009*
4 Program administered by the Wyoming Department of Environmental Quality
5
- 6 **Attachment 12**
7 *Colorado Coal Directory, 2005 (Information Series 71) by Christopher Carroll*
8 Colorado Geological Survey, Department of Natural Resources, Denver, CO
9
- 10 **Attachment 13**
11 *Colorado Coal Production 1986-2008*
12 Graph of Data from EIA Table 1 Annual Coal Reports
13
- 14 **Attachment 14**
15 *Colorado Mines Declare Force Majeure 2007-2008 (2 Parts)*
16 Supplemental Discovery Response LWG 19-7 Docket 09AL-299E
17
- 18 **Attachment 15**
19 *Energy Information Administration Quarterly Coal Report 2009 Q4*
20 Energy Information Administration, Department of Energy
21
- 22 **Attachment 16**
23 *Description of Power Factor*
24 Discovery Response PL1-1 Docket 09AL-299E
25
- 26 **Attachment 17**
27 *Xcel Not Conducted Any Studies of Low Power Factor Loads*
28 Discovery Response PL1-5, Docket 09AL-299E
29
- 30 **Attachment 18**
31 *Xcel's Tariff Provisions on Power Factor-Colorado*
32 Discovery Response PL1-8, Docket 09AL-299E
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INTRODUCTION AND SUMMARY

Q: PLEASE STATE YOUR NAME, ADDRESS AND CONTACT INFORMATION

A: My name is Leslie Glustrom. I live at 4492 Burr Place, Boulder, Colorado. My phone number is 303-245-8637 and my e-mail address is lglustrom@gmail.com.

Q: ARE YOU AN XCEL RATEPAYER AND HAVE YOU PARTICIPATED IN OTHER COLORADO PUC DOCKETS?

A: Yes, I am an Xcel ratepayer and I have been an active participant in the following dockets at the Colorado PUC:

- 05A-072E Comanche-Daniels Park Transmission
- 07A-107E/07A-196E 2013 Contingency Plan/Tri-State Gas Contracts
- 07A-421E Pawnee Smoky Hill Transmission
- 07A-521E Interruptible Service Option Credit
- 07A-447E Xcel 2007 Resource Plan
- 07A-469E Fort St. Vrain Turbines
- 08S-520E Xcel 2009 Rate Increase
- 09AL-299E Xcel 2010 Rate Increase
- 09A-772E Xcel 2010 Renewable Energy Compliance Plan and Windsorce
- 10A-24E Smart Grid Certificate of Public Convenience and Necessity

In addition, I have followed many other Colorado PUC dockets related to Xcel and have read much of the testimony and many of the decisions in these other dockets.

Q: PLEASE SUMMARIZE THE PURPOSE OF YOUR TESTIMONY.

A: The purpose of my testimony is to provide the Commission with the following information and recommendations:

- 1) Inappropriately low coal costs have understated the benefits of Xcel’s Preferred Plan and are likely to lead to additional costs borne by ratepayers in future years unless the Commission considers the reasons for recent large increases in coal costs. Detailed analyses of coal costs at Xcel’s Colorado coal plants are provided.

- 1 2) Detailed information is provided on coal mining issues in both Colorado and
2 Wyoming. This information should be carefully considered before making a long-term
3 commitment to the Pawnee plant in Brush.
- 4 3) The Commission should attempt to retire the Cherokee 4, Valmont 5 and Pawnee
5 plants as quickly as possible in order to avoid exposure to coal supply constraints and
6 large increases in coal costs over the coming decade.
- 7 4) Xcel should be required to study power factor issues on the customer side of the meter
8 and address these before asking rate payers to make large investments in equipment
9 needed to correct power factor issues and provide voltage support.

10 **Q: PLEASE EXPLAIN THE BASIS OF YOUR RECOMMENDATIONS**

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12 A: Due to the shortness of time and two other large deadlines this week—as well as the
13 large volume of testimony likely to be filed in this docket, I have decided to provide my
14 testimony in the form of bullet points summarizing the points being made in my Answer
15 Testimony with the data provided in the Attachments. Hopefully this will provide the
16 Commission and the other parties with a novel format and a break from the many pages
17 of testimony that are expected to be filed in this Docket.

18 **COAL COSTS AND COAL MINING ISSUES**

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20 **A) Coal Cost Escalation Much Too Low**

- 21 • Attachment 1 provides coal costs for Xcel’s coal plants for the years 2003-2007.
22 It shows Colorado coal costs began rising in 2005 as their long term coal contracts
23 expired.
- 24 • Attachment 2 provides coal costs for Xcel’s coal plants for the year 2008 for the
25 plants under consideration in this 10M-245E Docket.

- 1 • Attachment 3 provides Xcel’s 2009 coal costs for the plants under consideration
2 in this 10M-245E Docket.
- 3 • 2003-2009 coal costs by plant summarized in Table LWG-1; Average percentage
4 increase from 2005-2009 is summarized in Table LWG-2

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Table LWG-1
Xcel's Coal Costs for Coal Plants
in the 10M-245E Docket
2003-2009

(Price in \$/MMBTU; Data from Attachments 1-3;
2008 and 2009 Costs are Average of Per Plant Costs in Attachments 2 and 3;
Cherokee is a Weighted Average of the Four Units for 2008 and 2009)

Coal Plant	2003	2004	2005	2006	2007	2008	2009
Arapahoe	\$1.07	\$0.94	\$1.01	\$1.24	\$1.37	\$1.38	\$1.47
Cherokee	\$1.02	\$1.01	\$1.06	\$1.46	\$1.41	\$1.76	\$1.86
Hayden	\$1.02	\$1.00	\$1.01	\$1.57	\$1.57	\$1.54	\$1.41
Pawnee	\$0.93	\$0.96	\$0.98	\$1.01	\$1.02	\$0.98	\$1.05
Valmont	\$1.21	\$1.20	\$1.49	\$1.90	\$1.78	\$2.04	\$1.99

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Table LWG-2
Xcel's Coal Cost Escalation for Coal Plants
in 10M-245E Docket
2005-2009 Average Cost Escalation
(Using Data from Table LWG-1)

Coal Plant	2005 Coal Cost (a)	2009 Coal Cost (b)	% Increase 2005-2009 (b-a)/a x 100 = (c)	Average Increase/Year 2005-2009 c/4 = (d)
Arapahoe	\$1.01	\$1.47	45.54%	11.39%
Cherokee	\$1.06	\$1.86	75.47%	18.86%
Hayden	\$1.01	\$1.41	39.6%	9.90%
Pawnee	\$0.98	\$1.05	7.14%	1.78%
Valmont 5	\$1.49	\$1.99	33.55%	8.39%

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- 1 • Table LWG-2 indicates that while Pawnee coal costs have escalated about 1.78%
2 per year between 2005 and 2009, the other coal plants on Xcel’s Colorado system
3 have seen average **annual** coal cost escalations of between 8 and 18%--clearly
4 much more than the approximate 1.6% annual escalation assumed in
5 Supplemental Attachment J found in Attachment 4 to this Answer Testimony.
- 6
- 7 • Examples of the possible impact of increased coal costs at the Cherokee, Valmont
8 and Pawnee plant are shown in Tables LWG 3, LWG 4 and LWG 5.
- 9 • Supplemental Attachment J found in Attachment 4 to this Answer Testimony
10 indicates that Xcel has assumed that coal costs will escalate from \$1.77 in 2010 to
11 \$2.16 in 2022. This is an increase of about 22% over a 12 year period or
12 approximately a 1.8% annual increase. This will be used as the base escalation
13 rate in Tables LWG-3 through LWG-5.

Table LWG-3

An Example of the Potential Impact of
Higher Coal Cost Escalation Rates
on the Cherokee 4 Plant Costs
Cherokee 2009 Coal Costs from Attachment 3
All numbers are in millions

Coal Cost Escalation Rate

	1.8%/Yr	5%/Yr	10%/Yr	15%/Yr
2009	31.3	31.3	31.3	31.3
2010	31.8634	32.865	34.43	35.995
2011	32.43694	34.50825	37.873	41.39425
2012	33.02081	36.23366	41.6603	47.60339
2013	33.61518	38.04535	45.82633	54.7439
2014	34.22025	39.94761	50.40896	62.95548
2015	34.83622	41.94499	55.44986	72.3988
2016	35.46327	44.04224	60.99485	83.25862
2017	36.10161	46.24436	67.09433	95.74742
2018	36.75144	48.55657	73.80376	110.1095

2019	37.41296	50.9844	81.18414	126.626
2020	38.0864	53.53362	89.30255	145.6199
2021	38.77195	56.2103	98.23281	167.4628
2022	39.46985	59.02082	108.0561	192.5823
Total	493.3503	613.4372	875.617	1267.797
Delta	0	120.0869	382.2667	774.447

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- Table LWG-3 shows the following increased costs (compared to a 1.8% Increase/Year) for coal for the Cherokee 4 plant using cost escalators that fall in the range shown in Table LWG-2.

<u>Impact of Higher Cost Escalator on Coal Costs for Cherokee 4</u>	
(Data from highlighted numbers in Table LWG-3)	
5% Increase/Year	\$120 million more in costs by 2022
10% Increase/Year	\$382 million more in costs by 2022
15% Increase/Year	\$774 million more in costs by 2022

- Table LWG-3 is a striking example of the impact of a more realistic cost escalator on the possible cost of operating Cherokee 4 until the year 2022.
- Note that Table LWG-2 indicates that in the last 5 years, coal costs at the Cherokee plant have been increasing over 18% per year on average, so the increased costs shown in Table LWG-3 using more realistic cost escalators is likely to be conservative.
- I asked several times to get Xcel to use more realistic coal costs and coal cost escalators. My Motions requesting these more realistic cost estimates were dismissed or otherwise not fully addressed in Decisions C10-0808, C10-0853 and C10-0963. Despite the strong evidence that the cost of coal for the Pawnee plant shown in Table LWG-2 is likely abnormally low when compared to coal cost escalations at other Xcel plants, the Commission unfortunately declined to ensure that Xcel at least ran sensitivity runs to show the impact of more realistic coal cost

1 escalators.¹ Examples of the potential impact of higher coal cost escalation rates
 2 for the Pawnee and the Valmont 5 coal plants are presented in Tables LWG-4 and
 3 LWG-5.

4 **Table LWG-4**
 5 **An Example of the Potential Impact of**
 6 **Higher Coal Cost Escalation Rates**
 7 **on the Pawnee Coal Plant Costs**
 8 **Pawnee 2009 Coal Costs from Attachment 3**
 9 **All numbers are in millions**

10 **Coal Cost Escalation Rate**

	1.8%/Yr	5%/Yr	10%/Yr
2009	23.55	23.55	23.55
2010	23.9739	24.7275	25.905
2011	24.40543	25.96388	28.4955
2012	24.84473	27.26207	31.34505
2013	25.29193	28.62517	34.47956
2014	25.74719	30.05643	37.92751
2015	26.21064	31.55925	41.72026
2016	26.68243	33.13721	45.89229
2017	27.16271	34.79408	50.48152
2018	27.65164	36.53378	55.52967
2019	28.14937	38.36047	61.08263
2020	28.65606	40.27849	67.1909
2021	29.17187	42.29242	73.90999
2022	29.69696	44.40704	81.30099
Total	371.1949	461.5478	658.8109
Delta to 2022	0	90.35292	287.616
2022	29.69	44.41	81.3
2023	30.22442	46.6305	89.43
2024	30.76846	48.96203	98.373
2025	31.32229	51.41013	108.2103
2026	31.88609	53.98063	119.0313
2027	32.46004	56.67966	130.9345
2028	33.04432	59.51365	144.0279
2029	33.63912	62.48933	158.4307
2030	34.24463	65.6138	174.2738
2031	34.86103	68.89449	191.7011

¹ While the Commission stated in Decisions C10-0808 and C10-0853 that Xcel should run sensitivity runs that illustrate the impacts of a reasonable range of views of projected fuel costs, but when Xcel failed to run these sensitivities, the Commission declined (in Decision C10-0963) to take any action to ensure that it did what the Commission had directed it to do in Decision C10-0808 and C10-0853.

2032	35.48853	72.33921	210.8713
2033	36.12732	75.95617	231.9584
2034	36.77761	79.75398	255.1542
2035	37.43961	83.74168	280.6696
2036	38.11352	87.92876	308.7366
2037	38.79957	92.3252	339.6103
2038	39.49796	96.94146	373.5713
2039	40.20892	101.7885	410.9284
2040	40.93268	106.878	452.0213
2041	41.66947	112.2219	497.2234
Total	707.1956	1468.459	4656.457
Delta 2022 to 2042	0	761.2634	3949.262

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- Once again, Table LWG-4 shows the striking impact of using higher escalation rates for coal costs. Xcel’s has proposed retiring the Pawnee plant in 2041 under their Preferred Plan in this 10M-245E Docket and the impact of a higher coal cost projected out to 2041 is shown in Table LWG-4. The preferred retirement date for Pawnee of 2041 is shown in Discovery Request LWG 1-6 which is Attachment 5 to this Answer Testimony. For the Pawnee plant, the coal cost escalation analysis shows the following:

9 Impact of Higher Coal Cost Escalators on the Cost of the Pawnee Plant

10 Data from the highlighted data in Table LWG-4

12 5% Increase/Year	\$90 million in increased costs to 2022 \$761 million in increased costs 2022-2041
15 10% Increase/Year	\$287 million in increased costs to 2022 \$3,989 million in increased costs 2022-2041

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- Table LWG-5 presents a similar analysis of the impact of using a more realistic coal cost escalation rate on the costs for the Valmont 5 coal plant.

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Table LWG-5
An Example of the Potential Impact of
Higher Coal Cost Escalation Rates
on the Valmont 5 Coal Plant Costs
Valmont 2009 Coal Costs from Attachment 3
All numbers are in millions

Coal Cost Escalation Rate

	1.8%/Yr	5%/Year	10%/Year	15%/Year
2009	22.07	22.07	22.07	22.07
2010	22.46726	23.1735	24.277	25.3805
2011	22.87167	24.33218	26.7047	29.18758
2012	23.28336	25.54878	29.37517	33.56571
2013	23.70246	26.82622	32.31269	38.60057
2014	24.12911	28.16753	35.54396	44.39065
2015	24.56343	29.57591	39.09835	51.04925
2016	25.00557	31.05471	43.00819	58.70664
2017	25.45567	32.60744	47.30901	67.51263
Total	213.5485	243.3563	299.6991	370.4635
Delta	0	29.80774	86.15053	156.915

- Once again, Table LWG-5 shows the impact of using higher escalation rates for coal costs. For the Valmont plant, the coal cost escalation analysis shows the following:

Impact of Higher Coal Cost Escalators on the Cost of the Valmont Plant

Data from the highlighted data in Table LWG-5

5% Increase/Year	\$29 million in increased costs to 2017
10% Increase/Year	\$86 million in increased costs to 2018
15% Increase/Year	\$156 million in increased costs to 2018

- Table LWG-6 summarizes the cost impacts of using higher coal cost escalation rates as shown in Tables LWG-3 through LWG-6.

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B) Colorado Coal Production has Been Declining and Costs Have Been Rising in Recent Years, Independently of Any Decisions Made in This Docket

- Information on Colorado coal production is found in Attachments 13-15 to Ms. Glustrom’s Answer Testimony and shows that Colorado coal production has been dropping significantly in recent years—independently of any decisions made in this Docket.

C) Wyoming Coal Production Facing Constraints

- The following section provides background on the Wyoming mines serving Xcel’s Pawnee plant in Brush, Colorado and the Comanche plants in Pueblo, Colorado. It will also discuss the present life span of these mines and the serious constraints facing future expansions of these mines. These facts are likely to have serious consequences for the future cost of coal for these plants and will form the foundation for the argument that ratepayers—as well as the environment—will likely be better off if the Pawnee plant is retired at the earliest possible date.
- Xcel’s Pawnee plant in Brush is supported by the Eagle Butte mine in the Powder River Basin of Wyoming and Xcel’s Comanche plants in Pueblo are supported by the Belle Ayr mine in the Powder River Basin of Wyoming. This was confirmed in Discovery Response LWG 2-4 from Xcel to Ms. Glustrom in this 10M-245E Docket. Both of these mines are owned by Alpha Natural Resources whose website is <http://www.alphanr.com/Pages/Default.aspx>
- The 2009 Alpha Natural Annual Report is found at the following link <http://files.shareholder.com/downloads/ALNR/954545964x0x373410/8ecce3fc->

[a5a5-4cf6-86f5-f5710f92a367/alpha10K.pdf](http://www.alpha-natural.com/a5a5-4cf6-86f5-f5710f92a367/alpha10K.pdf) The Alpha Natural Annual Report is about 390 pages long and so is not attached, but key sections are reproduced below.

- At page 10 in the Alpha Natural 10-K, it is noted that production in the Powder River Basin was down in 2009 compared to 2008. It remains to be seen whether this is a temporary decline due to reduced economic activity or the beginning of the decline of production in Wyoming’s Powder River Basin coal field. As described further below, despite the EIA’s projection of growth in coal production, there are strong reasons to expect coal production Wyoming to decline in future years. Indeed, it appears that EIA has assumed that if demand for PRB coal increases, then production to meet that demand will naturally follow. This fails to consider the very real and very serious constraints on future expansion of the PRB coal mines. These constraints on PRB coal mine expansion will be discussed further below.

Coal Production. United States coal production was approximately 1.1 billion tons in 2009. The following table, derived from data prepared by the EIA, sets forth production statistics in each of the major coal producing regions for the periods indicated.

Production by Region	Actual ⁽¹⁾			Preliminary ⁽²⁾	Projected ⁽²⁾		Annual Growth	
	2006	2007	2008	2009	2015	2030	2009-2015	2015-2030
	(Tons in millions)							
Powder River Basin	473	480	496	459	521	635	2%	1%
Central Appalachia	236	227	216	216	141	104	(7)%	(2)%
Northern Appalachia	137	133	136	121	157	159	4%	—
Illinois Basin	95	96	99	93	123	125	5%	—
Other	222	211	205	193	213	237	2%	1%
Total	<u>1,163</u>	<u>1,147</u>	<u>1,172</u>	<u>1,082</u>	<u>1,155</u>	<u>1,260</u>	1%	1%

⁽¹⁾ Actual data estimates are based on coal production information published in the EIA’s coal production website.

⁽²⁾ Preliminary and projected data based on EIA Annual Energy Outlook 2010.

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- 1 • At page 14, the following description is offered of Alpha Natural Resources
2 Wyoming mines—the Belle Ayr and Eagle Butte mines which supply Xcel’s
3 Colorado coal plants at Brush (“Pawnee”) and in Pueblo (“Comanche”).

4 **Alpha Coal West**

Our Alpha Coal West business unit is located in the Powder River Basin. Alpha Coal West consists of our Belle Ayr and Eagle Butte operations, which collectively shipped 20.8 million tons in 2009. Coal is mined primarily using the truck and shovel mining method. We control approximately 709.3 million tons of coal reserves through our Alpha Coal West business unit and all of the coal reserves are assigned to active mines. There are 630 salaried and hourly employees at our Alpha Coal West business unit.

Belle Ayr consists of one mine that produces sub-bituminous, low sulfur coal for sale primarily to utility companies. Belle Ayr extracts coal from a coal seam that is 75 feet thick. The mine sells 100% of raw coal mined and no washing is necessary. Belle Ayr shipped 12.4 million tons of coal in 2009. We plan to apply to lease several hundred million tons of surface mineable, unleased federal coal that adjoins Belle Ayr’s property under the LBA process. If we prevail in the bidding process and obtain these leases, we will be able to extend the life of the mine. Belle Ayr has the advantage of shipping its coal on both of the major western railroads, the BNSF Railway and the Union Pacific Railroad to power plants located throughout the West, Midwest and the South.

Eagle Butte consists of one mine that produces sub-bituminous, low sulfur coal for sale primarily to utility companies. Eagle Butte extracts coal from coal seams that total 100 feet thick. The mine sells 100% of raw coal mined and no washing is necessary. Eagle Butte shipped 8.4 million tons of coal in 2009. Coal from Eagle Butte is shipped on the BNSF Railway to power plants located throughout the West, Midwest and the South. The mine also ships a small portion by truck.

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- 7 • The merger of Alpha Natural and Foundation Coal in 2009 is described on page
8 58 of Alpha Natural’s 2009 Annual Report as follows:

9

We are the surviving corporation of the Merger between Old Alpha and Foundation. Prior to the Merger, Old Alpha, together with its affiliates, was a leading supplier of high-quality Appalachian coal to the steel industry, electric utilities and other industries, with mining operations in Virginia, West Virginia, Kentucky and Pennsylvania. Old Alpha was also the nation’s largest supplier and exporter of metallurgical coal, a key ingredient in steel manufacturing. Prior to the Merger, Foundation, together with its affiliates, was a major U.S. coal producer operating mines and associated processing and loading facilities in Pennsylvania, West Virginia and Wyoming. Foundation primarily supplied steam coal to U.S. utilities for use in generating electricity and also sold steam coal to industrial plants and metallurgical coal to steel companies.

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- 12 • On page 93 of Alpha Natural’s Annual Report the company acknowledges that
13 after the merger with Foundation Coal, it carried a liability for below market-
14 priced coal supply agreements as follows:

Acquired Coal Supply Agreements

Application of acquisition accounting in connection with the Merger resulted in the recognition of a significant asset for above market-priced coal supply agreements and a liability for below market-priced coal supply agreements on the date of the acquisition. The coal supply agreements were valued based on the present value of the difference between the expected contract revenues based on the stated contract terms, net of royalties and taxes imposed on sales revenues, and the estimated net contract revenues derived from applying forward market prices at the acquisition date for new contracts of similar duration and coal qualities. The coal supply agreement assets and liabilities are being amortized over the actual amount of tons shipped under each contract. Coal supply agreement assets valued in the Merger were \$529,507 and coal supply agreement liabilities valued in the Merger were \$25,610. The coal supply agreement liability is reported in *Other non-current liabilities* in the Consolidated Balance Sheets. Amortization of coal supply agreement assets was \$133,016 of expense and amortization of coal supply agreement liabilities was a credit to expense of (\$5,408), equating to a net expense of \$127,608 for the year ended December 31, 2009 and reported as *Amortization of acquired coal supply agreements, net* in the Consolidated Statements of Operations. Accumulated amortization related to the coal supply agreement assets and liabilities was (\$133,016) and \$5,408, respectively, as of December 31, 2009. Future net amortization expense related to *Acquired coal supply agreements, net* is expected to be \$255,152, \$91,140, \$31,706, and (\$1,709) for the years ending December 31, 2010, 2011, 2012, and 2013, respectively.

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2 • In order to understand the likelihood that the cost of coal at the Pawnee coal plant
 3 will increase in the coming years it is important to examine the data provided by
 4 the Companies that operate the Eagle Butte mine that supplies the Pawnee plant
 5 (as well as the Belle Ayr mine that supplies the Comanche plants in Pueblo.) Until
 6 mid-2009, those mines were owned by Foundation Coal.

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8 • The 2008 Annual Report for Foundation Coal (the predecessor of Alpha Natural)
 9 can be found archived at the following link--

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<http://www.sec.gov/Archives/edgar/data/1301063/000119312509042600/d10k.htm>

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[m](http://www.sec.gov/Archives/edgar/data/1301063/000119312509042600/d10k.htm) Again, this Annual Report is over 200 pages long, but key excerpts will be

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reproduced below. The Foundation Coal 2008 Annual Report provides the

13

following information regarding 2008 production at the Foundation Coal Powder

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River Basin mines on page 10.

The following table provides summary information regarding our principal mining complexes as of December 31, 2008:

Mining Complex	Number		Mining Technology	Transportation	Tons Produced in 2008 (In millions)	Tons Sold ⁽¹⁾ in 2008 (In millions)
	of Mines	Type of Mine				
Wyoming						
Belle Ayr	1	Surface	Truck-and-Shovel	BNSF, UP	28.7	28.8
Eagle Butte	1	Surface	Truck-and-Shovel	BNSF, Truck	20.5	20.4

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- On page 12 of Foundation Coal’s 2008 Annual Report they had this to say about their Wyoming operations:

Wyoming Operations

We control approximately 760.3 million tons of coal reserves in the Powder River Basin, the largest and fastest growing U.S. coal-producing region. Our subsidiaries, Foundation Coal West, Inc. and Foundation Wyoming Land Company, own and manage two sub-bituminous, low sulfur, non-union surface mines that sold 49.2 million tons of coal in 2008, or 71% of our total production volume. The two mines employ approximately 620 salaried and hourly employees. Our Powder River Basin mines have produced over one billion tons of coal since 1972.

Belle Ayr Mine

The Belle Ayr mine, located approximately 18 miles southeast of Gillette, Wyoming, extracts coal from the Wyodak-Anderson Seam, which averages 75 feet thick, using the truck-and-shovel mining method. Belle Ayr shipped 28.8 million tons of coal in 2008. The mine sells 100% of raw coal mined and no washing is necessary. Belle Ayr has approximately 255.6 million tons of reserves. Based on 2008 production levels, the reserves at Belle Ayr will sustain projected production for approximately 9 years if market conditions warrant. We plan to apply to lease several hundred million tons of surface mineable, unleased federal coal that adjoins Belle Ayr’s property under the LBA process. If we prevail in the bidding process and obtain these leases, we will be able to extend the life of the mine. Belle Ayr has the advantage of shipping its coal on both of the major western railroads, the BNSF Railway and the Union Pacific Railroad.

Eagle Butte Mine

The Eagle Butte mine, located approximately eight miles north of Gillette, Wyoming, extracts coal from the Roland and Smith Seams, which total 100 feet thick, using the truck-and-shovel mining method. Eagle Butte shipped 20.4 million tons of coal in 2008. The mine sells 100% of the raw coal mined and no washing is necessary. On February 20, 2008, our affiliate successfully bid on a new federal coal lease adjacent to the western boundary of the Eagle Butte mine, containing approximately 224.0 million tons of proven and probable reserves. The lease became effective on May 1, 2008. Eagle Butte has approximately 504.7 million tons of reserves. Based on 2008 production levels, the reserves at Eagle Butte will sustain production levels for approximately 25 years if market conditions warrant. Coal from Eagle Butte is shipped on the BNSF Railway to power plants located throughout the West, Midwest and the South. The mine also ships a small portion by truck.

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- On page 14 of Foundation Coal’s 2008 Annual Report they had this to say about their long term contracts:

Long-Term Coal Supply Agreements

As of January 26, 2009, we had a total sales backlog of over 259 million tons of coal, and our coal supply agreements have remaining terms ranging from less than one year to 13 years. For 2008, we sold approximately 86% of our sales volume under long-term coal supply agreements with duration of longer than twelve months. Our primary customer base is in the United States. We expect to continue selling a significant portion of our coal under long-term supply agreements. Our strategy is to selectively renew, or enter into new, long-term supply contracts when we can do so at prices we believe are favorable. As of January 26, 2009, we had sales and price commitments for approximately 97% of our planned 2009 shipments, approximately 59% of our planned 2010 shipments and approximately 29% of our planned 2011 shipments. To the extent we do not renew or replace expiring long-term coal supply agreements, our future sales have increased exposure to market fluctuations.

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- On page 43 of Foundation Coal’s 2008 Annual Report they describe their

10 “reserves” in this fashion:

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The table below summarizes the locations, coal reserves in millions of tons and primary ownership of the coal reserves. Tonnage is on an as-received wet basis and the quality figures represent an approximate reserve average.

Operating Segments	Proven and			Average Btu/lb (Tons in millions)	Average Sulfur Content (lbs SO ₂ /mmBtu)	Ownership
	Probable Reserves (1)	Assigned Reserves	Unassigned Reserves			
	Powder River Basin	760.3	760.3			
Northern Appalachia	730.5	243.3	487.2	12,934	3.6	Primarily Owned
Central Appalachia	232.0	87.6	144.4	12,629	1.3	Primarily Leased
Illinois Basin	26.1	26.1	-	11,069	3.0	Primarily Leased
Total	1,748.9	1,117.3	631.6			

(1) Proven and probable coal reserves are classified as follows:

Proven reserves —Reserves for which: (i) quantity is computed from dimensions revealed in outcrops, trenches, workings or drill holes; grade and/or quality are computed from the results of detailed sampling; and (ii) the sites for inspection, sampling and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well-established.

Probable reserves —Reserves for which quantity and grade and/or quality are computed from information similar to that used for proven reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation.

We believe that we have sufficient reserves to replace capacity from depleting mines for the foreseeable future and that our current reserves are one of our strengths. We believe that the current level of production at our major mines is sustainable for the foreseeable future.

Our reserve estimate is based on geological data assembled and analyzed by our staff of geologists and engineers. Reserve estimates are annually updated to reflect past coal production, new drilling information and other geological or mining data. Acquisitions or sales of coal properties will also change the reserves. Changes in mining methods may increase or decrease the recovery basis for a coal seam as will plant processing efficiency tests. We maintain reserve information in secure computerized data bases, as well as in hard copy. The ability to update and/or modify the reserve database is restricted to a few individuals and the modifications are documented.

Our mines in Wyoming are subject to federal coal leases that are administered by the U.S. Department of Interior under the Federal Coal Leasing Amendment Act of 1976. Each lease requires diligent development of the lease within ten years of the lease award with a required coal extraction of 1.0% of the reserves within that 10-year period. At the end of the 10-year development period, the mines are required to maintain continuous operations, as defined in the applicable leasing

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- On page 46 of Foundation Coal's 2008 Annual Report, the Company provided the following financial data showing the declining net income experienced between 2005 and 2008.

[Rest of page left intentionally blank.]

	Successor				For the Period From April 23, 2004 (date of incorporation) Through December 31, 2004	Predecessor Seven Months Ended July 29, 2004
	Twelve Months Ended December 31,	Twelve Months Ended December 31,	Twelve Months Ended December 31,	Twelve Months Ended December 31,		
	2008	2007	2006 (In thousands)	2005		
Statement of Operations Data:						
Revenues:						
Coal sales	\$ 1,663,080	\$ 1,452,702	\$ 1,440,162	\$ 1,292,411	\$ 436,035	\$ 544,882
Other revenue ⁽¹⁾	27,050	36,961	30,159	24,518	8,561	6,153
Total revenues	1,690,130	1,489,663	1,470,321	1,316,929	444,596	551,035
Costs and expenses:						
Cost of coal sales (excludes depreciation, depletion and amortization)	1,321,638	1,131,506	1,110,922	936,201	345,791	484,457
Selling, general and administrative expenses (excludes depreciation, depletion and amortization)	66,702	58,719	50,721	48,437	24,596	27,375
Accretion on asset retirement obligations	11,429	10,155	8,510	8,507	3,300	4,020
Depreciation, depletion and amortization	212,166	202,029	183,201	211,186	84,843	61,236
Amortization of coal supply agreements	1,368	(3,414)	(13,122)	(84,903)	(67,238)	8,837
Net change in fair value of derivative instruments	9,447	-	-	-	-	-
Employee and contract termination costs and other	-	14,656	-	-	-	-
Write-down of long-lived assets ⁽²⁾	-	-	30,782	1,633	-	-
Income (loss) from operations	67,380	76,012	99,307	195,868	53,304	(34,890)
Other income (expense):						
Interest expense	(46,960)	(53,666)	(64,525)	(59,495)	(26,677)	(18,010)
Interest income	992	3,531	3,010	1,161	507	1,274
Other ⁽³⁾	-	-	(112)	-	530	(90,789)
Income (loss) from continuing operations before income tax (expense) benefit and equity in losses of affiliates	21,412	25,877	37,680	137,534	27,664	(142,415)
Income tax (expense) benefit	(7,168)	7,812	(4,106)	(46,461)	(13,600)	51,824
Equity in losses of affiliates	(810)	-	-	-	-	-
Income (loss) from continuing operations	\$ 13,434	\$ 33,689	\$ 33,574	\$ 91,073	\$ 14,064	\$ (90,591)

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- On page 51 of Foundation Coal's 2008 Annual Report they provide the following description of operations at their Wyoming mines—Eagle Butte and Belle Ayr—and they note an 18% decrease in production from the Eagle Butte mine for 2008 compared to 2007.

Coal sales revenues in the Powder River Basin for the twelve months ended December 31, 2008 increased \$28.3 million, or 6% compared to coal sales revenues for the twelve months ended December 31, 2007 as a result of higher coal sales realization per ton partially offset by lower coal sales volumes. Coal sales realization per ton increased 11% period-over-period as a result of increased pricing per ton sold. Coal sales volumes in the Powder River Basin decreased 2.4 million tons, or 5% period-over-period due to a combination of transportation interruptions caused by adverse weather conditions including extensive flooding in the Midwest, the Company's decision to limit production due to market conditions for Powder River Basin coal, and reduced shipments on certain coal supply agreements tied to customer requirements. An 18% period-over-period decrease in production and shipments at Eagle Butte was partially offset by a 8% increase in production and shipments at Belle Ayr.

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- On page 55 of Foundation Coal's 2008 Annual Report they provide the following information about their sales of coal, including information on both the cost of the sales and the production cost of the coal. It is important to note that for Foundation's two Powder River Basin mines (i.e. Eagle Butte and Belle Ayr) the sales price for the coal went up 11%, but the production cost went up 28%--and as would be predicted, net income from the Powder River Basin operations also

1 declined significantly. Near the bottom of page 55, Foundation noted that
 2 operating costs increased about \$71 million. Then, as discussed above,
 3 Foundation Coal was acquired by Alpha Natural in the middle of 2009.

The market price of coal is influenced by many factors that vary by region. Such factors include, but are not limited to: (1) coal quality, which includes energy (heat content), sulfur, ash, volatile matter and moisture content; (2) transportation costs; (3) regional supply and demand; (4) available competitive fuel sources such as natural gas, nuclear or hydro; and (5) production costs, which vary by mine type, available technology and equipment utilization, productivity, geological conditions, and mine operating expenses.

The energy content or heat value of coal is a significant factor influencing coal prices as higher energy coal is more desirable to consumers and typically commands a higher price in the market. The heat value of coal is commonly measured in British thermal units or the amount of heat needed to raise the temperature of one pound of water by one degree Fahrenheit. Coal from the Eastern and Midwest regions of the United States tends to have a higher heat value than coal found in the Western United States.

Prices for our Powder River Basin coal, with its lower energy content, lower production cost and often greater distance to travel to the consumer, typically sells at a lower price than Northern and Central Appalachian coal that has a higher energy content and is often located closer to the end user. Illinois Basin coal generally has lower energy content and higher sulfur than Northern and Central Appalachian coal, but it has higher energy content than Powder River Basin coal.

	Twelve Months Ended December 31,		Increase (Decrease)	
	2008	2007	Tons/\$	Percent
(Unaudited, in thousands, except coal sales realization per ton and cost of coal sales per ton)				
Powder River Basin				
Tons sold	49,197	51,617	(2,420)	(5)%
Coal sales realization per ton	\$ 10.11	\$ 9.08	\$ 1.03	11%
Total revenues	\$ 500,618	\$ 470,886	\$ 29,732	6%
Cost of coal sales per ton ⁽¹⁾	\$ 8.23	\$ 6.45	\$ 1.78	28%
Income from operations	\$ 25,560	\$ 75,376	\$ (49,816)	(66)%
Northern Appalachia				
Tons sold	14,398	12,993	1,405	11%
Coal sales realization per ton	\$ 44.72	\$ 40.14	\$ 4.58	11%
Total revenues	\$ 650,373	\$ 533,789	\$ 116,584	22%
Cost of coal sales per ton ⁽¹⁾	\$ 31.80	\$ 27.31	\$ 4.49	16%
Income from operations	\$ 94,626	\$ 91,694	\$ 2,932	3%
Central Appalachia				
Tons sold	6,913	8,484	(1,571)	(19)%
Coal sales realization per ton	\$ 71.17	\$ 52.60	\$ 18.57	35%
Total revenues	\$ 496,589	\$ 458,271	\$ 38,318	8%
Cost of coal sales per ton ⁽¹⁾	\$ 58.53	\$ 46.68	\$ 11.85	25%
Income (loss) from operations	\$ 22,511	\$ (2,982)	\$ 25,493	855%

⁽¹⁾ Excludes selling, general and administrative expense; depreciation, depletion and amortization; accretion expense; and changes in fair value of derivative instruments.

Powder River Basin —Income from operations decreased \$49.8 million period-over-period due to increased operating costs of \$74.1 million and a \$5.4 million mark-to-market loss on financial swaps related to diesel fuel, partially offset by increased revenues of \$29.7 million. As explained in the revenue section above, the increased revenues resulted from a 11% increase in coal sales realization per ton, partially offset by a 5% decrease in coal sales volumes. Coal sales volumes in the Powder River Basin decreased 2.4 million tons period-over-period due to a combination of transportation interruptions caused by adverse weather conditions including extensive flooding in the Midwest, the Company's decision to limit production due to market conditions for Powder River Basin coal, and reduced shipments on certain coal supply agreements tied to customer requirements. An 18% period-over-period decrease in production and shipments at Eagle Butte was partially offset by a 8% increase in production and shipments at Belle Ayr. Operating costs increased \$74.1 million for the twelve months ended December 31, 2008 compared to the twelve months ended December 31, 2007, reflecting higher period-over-period cost of sales of \$71.9 million, an increase in depreciation, depletion and amortization costs of \$1.3 million and an increase in other miscellaneous expenses of \$0.9 million.

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5 • For 2009, Alpha Natural Resources provided the following financial information

6 regarding their coal operations on page 139 of their Annual Report, showing a

7 loss of about \$37.6 million on their western coal operations.

8

Segment operating results and capital expenditures from continuing operations for the year ended December 31, 2009 and segment assets as of December 31, 2009 were as follows:

	Eastern Coal Operations	Western Coal Operations	All Other	Consolidated
Total Revenues	\$ 2,249,027	\$ 218,613	\$ 27,867	\$ 2,495,507
Amortization of acquired coal supply agreements, net	\$ 78,537	\$ 49,071	\$ —	\$ 127,608
Depreciation, depletion, and amortization	\$ 219,047	\$ 25,562	\$ 7,786	\$ 252,395
EBITDA from continuing operations	\$ 524,042	\$ 39,278	\$ (68,477)	\$ 494,843
Capital expenditures	\$ 157,121	\$ 18,310	\$ 11,662	\$ 187,093
Goodwill	\$ 304,900	\$ 47,681	\$ 5,287	\$ 357,868
Total assets	\$ 3,654,956	\$ 716,454	\$ 751,361	\$ 5,122,771

The following table presents a reconciliation of EBITDA from continuing operations to *Income from continuing operations* :

	Year Ended December 31, 2009			
	Eastern Coal Operations	Western Coal Operations	All Other	Consolidated
1 EBITDA from continuing operations	\$ 524,042	\$ 39,278	\$ (68,477)	\$ 494,843
Interest expense	(18,843)	(2,275)	(61,707)	(82,825)
Interest income	(2,887)	—	4,656	1,769
Income tax benefit (expense)	—	—	33,023	33,023
Depreciation, depletion and amortization	(219,047)	(25,562)	(7,786)	(252,395)
Amortization of acquired coal supply agreements, net	(78,537)	(49,071)	—	(127,608)
Income from continuing operations	<u>\$ 204,728</u>	<u>\$ (37,630)</u>	<u>\$ (100,291)</u>	<u>\$ 66,807</u>

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- Further information about the Eagle Butte mine and reasons why production costs are likely to be rising in coming years (and driving up coal costs for the Pawnee plant) can be found by examining the map of the Eagle Butte mine that is Attachment 7 to Ms. Glustrom’s Answer Testimony as well as the Executive Summary of the Bureau of Land Management Final Environmental Impact Statement for the coal lease by application for the Eagle Butte Mine which is Attachment 8 to Ms. Glustrom’s Answer Testimony and the 2009 Office of Surface Mine Reclamation 2009 Evaluation Report of the Wyoming Regulatory Program which is Attachment 11 to Ms. Glustrom’s Answer Testimony. All of these documents paint a picture of the Eagle Butte mine that is facing increased

1 operating costs and that is running out of room in its existing pit and that will face
2 significant surface obstructions in its expansion and will require significant work
3 to reclaim the existing disturbed areas. In addition, page 3-8 in the August 2007
4 Bureau of Land Management (“BLM”) Environmental Impact Statement for the
5 Eagle Butte Mine which can be obtained from the Casper, Wyoming office of the
6 BLM, it is detailed that the average overburden in the existing Eagle Butte mine is
7 200 feet while the average overburden in the proposed expansion area is 325 feet.

- 8 • Similar information on Belle Ayr mine is provided in Attachments 9, 10 and 11.
9 According to page 3-11 in the August 2009 Final Environmental Impact
10 Statement for the South Gillette Coal Lease Applications (available from the
11 Wyoming BLM, Casper Office) indicates that the overburden in the existing Belle
12 Ayr mine averages about 213 feet while the average overburden in the proposed
13 expansion area is 295 feet.
- 14 • In addition, Ms. Glustrom hereby respectfully requests that the Commission take
15 administrative notice of USGS 2008-1202 which is a 92 MB report detailing the
16 geology of the Gillette coal field in the Powder River Basin. The report is
17 discussed in Attachment 6 and can be found in full at
18 <http://pubs.usgs.gov/of/2008/1202/> . The title of the report is “Assessment of Coal
19 Geology, Resources, and Reserves in the Gillette Coalfield, Powder River Basin,
20 Wyoming.”
- 21 • All of this information on the Eagle Butte and Belle Ayr Mines underscores the
22 strong likelihood that the cost of coal for the Pawnee plant is likely to increase
23 significantly in the coming years—and strongly supports retiring the Pawnee plant

1 at the earliest possible date in order to avoid the likely increased costs shown in
2 Table LWG-4 above.

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4 **D) Fundamental Geologic and Economic Reasons Why Coal Costs are Likely**
5 **to Increase in Future Years**
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7 There are a host of reasons to believe that due to geologic, economic, legal and
8 transportation constraints, future coal costs are likely to increase—until the time that
9 demand for coal in this country and around the world has dropped significantly. These
10 reasons are outlined in Attachment 6 to this Answer Testimony. These issues related to
11 fundamental constraints on coal supply also provide support for accelerating the
12 retirement of the Valmont 5 and Cherokee 4 plants at the earliest possible dates.

13
14 **E) Need to Support Transition Planning for Colorado Coal Workers and**
15 **Communities**
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17 Independent of what decisions are made in this docket, there is a pressing need to
18 support transition planning for Colorado coal workers and communities as Colorado coal
19 mines are playing out and production costs are making Colorado coal less economically
20 attractive.

21 **F) Colorado Should Support Using More Colorado Coal in Colorado Coal**
22 **Plants**
23

24 During the transition away from coal, Colorado should ease the strain put on
25 Colorado workers and communities by supporting the use of Colorado coal in Colorado
26 coal plants. Xcel should be directed to undertake the appropriate test burns and economic
27 analyses and report back to the Commission during the next Resource Plan.

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THE POWER FACTOR ISSUE

- Attachments 16-18 indicate that Xcel has not done any studies on power factor issues related to their Colorado system. The Commission should direct Xcel to undertake these studies and do a detailed cost-benefit analysis on ways to correct power factor issues—including on the customer side of the meter—before approving large expenditures for addressing power factor and providing voltage support.

Q: DOES THIS CONCLUDE YOUR TESTIMONY AT THIS TIME?

A: Yes. Thank you.